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THE
ANTHROPOLOGICAL REVIEW.

FEBRUARY, 1864.

ON HUMAN HAIR AS A RACE-CHARACTER, EXAMINED
BY THE AID OF THE MICROSCOPE.

By Dr. PRUNER-BEY.*

PRELIMINARY OBSERVATIONS.

FROM the highest antiquity has the human hair attracted the attention of observers; but, down to a very recent period, it was merely the contour and the external aspect which were taken into consideration. These two characters were thus at all times indicated as distinguishing nations and individuals. The terms *λειότριχες*, *συλότριχες*, *ξανθοί*, *πυρρόι*, etc., constantly occur in Greek authors and their successors.

Modern science has somewhat enlarged the field of observation as regards colour; but it was only by the use of the microscope that we are enabled to add fresh characters to those accessible to the naked eye. It is by these means that Heusinger was enabled to indicate the elliptic form of the hair of the Negro. Koelliker confirmed this observation, and added other characters. Erdl applied the microscope to the study of the colour in animals. Brown finally, according to the tendency of the American school, published in the remarkable work of Schoolcraft, his researches, in which he endeavours to establish specific characters, or nearly so, for the hair of the Aryan, the Negro, the Chinese, and the American, both in the form of the bulb and the body, and also in the structure of the latter, at least as regards the presence or the absence of the so-called medullary canal.

This question has for many years excited my warmest interest.

* Read before the Anthropological Society of Paris, March 19, 1863.

What, an anatomical system at present considered merely as a secretion of the skin, or at any rate as a simple appendage, should this represent clearly defined distinctive characters in the races of man inhabiting the globe? What, a single hair sufficient finally to distinguish one stock from another? At first, this seemed to me absolutely impossible. Nevertheless, on turning our attention to the animal kingdom as a whole, and specially to the vertebrate animals, the variety and importance of these appendages become incontestable at once. In fishes and amphibia they assume the form of scales; that of feathers in birds; and even in certain mammifers prickles are substituted for fleece. The felt of wild animals presents some distinct and constant characters in colour, texture, and distribution. In man, excepting some regions, as the face (in the male), the armpits, the pubes, etc., the surface presents generally only the rudiments of the fleece of animals; it is the hair of the head which distinguishes man in this respect.

I do not enter in this paper into the minute or elementary-structure of the human hair. In this respect man differs no more from the animal than in the other organic systems, as regards their ultimate elements; hence there can obtain no difference between human races. But, as we shall presently see, there is a great difference in the conformation of the bulb or the body, as seen in transverse sections; and such there is also in the relative volume, the disposition and the contents of the medullary canal, which may even be absent. These characters can only be studied by the aid of the microscope. I have thought it proper microscopically to examine also the down on different regions of the body in individuals belonging to our race; the apes also, specially the anthropoids, seemed to me to deserve a place in this investigation.

I take this opportunity to return my sincere thanks to those honourable *savants* who have furnished me with samples of hair for microscopic examination. Without the kind aid of Messrs. Quatrefages, E. Rousseau, de Montagu, d'Abbadie, l'Abbé Domeneck, E. Duhouset, and Potteau, this unpretending treatise would probably never have seen the light.

I sincerely regret that, for certain races which inhabited or still inhabit North America and High Asia, I had no materials at hand. I would, however, fain believe that the varied forms of human hair are all represented by the samples I had at my disposal, and that, consequently, those peoples I was compelled to omit may be ranged by the side of such made known in these researches.

II. THE EXTERNAL CHARACTERS OF HUMAN HAIR AS SEEN BY
THE NAKED EYE.

The hair of the races of man presents, at first sight, very striking peculiarities in regard to its length, abundance, colour, and its smooth, curly, frizzled, crisp, or woolly condition, quite apart from the grotesque forms given to it by artificial practices which are met with both among the most civilised and the most savage peoples. This fact shows the importance which man instinctively and voluntarily has everywhere attached to that ornament which decks his head and frames his face, the noblest parts of his body.

We shall now examine the extreme variation of the characters visible to the naked eye. As regards the length of the hair, what a contrast between the stiff and sleek hair of the Blackfeet and the Sioux,* which almost reaches the heel, and the twisted tufts of the Negress and the Bosjesman, which scarcely reach the shoulder! We must take note, that the length of the hair greatly differs in the two sexes of the same stock; its length also varies so much in the same race, and even in the same families, that it is unnecessary to dwell on this character. We possess, moreover, no certain data in this respect; but, at all events, we must, to some extent, attribute the peculiarity both to the influence of climate and aliment.

The abundance of hair is subject to so many individual variations, that it cannot form a really distinctive character. As a general rule, the finer and more supple the hair, the greater the number of hairs in a given space. On this point, we need merely to compare the head of the Negro with that of an American.

The colour of the hair has at all times fixed the attention of travellers and authors. On the one hand, it harmonises to a certain degree with the colour of the skin and the iris; and, on the other, it presents more or less persistence, according to race. Black hair is met with in nearly all parts of the globe—under the equator, the pole, as well as in the temperate zone. It is the appanage of the Esquimaux, as well as that of the Negro, the Hindoo, the Malay, and of many European nations. Such is not the case in regard to the other extreme of the chromatic scale; viz. the light hair, with its nearly imperceptible shades between flaxen, straw, and gold colour, to which we must add carrotty and fiery red hair. From this last there is a transition to reddish-brown; from this to light brown, dark brown,

* The hair of the mummies of the Aymarás of Peru is also distinguished by its length and stiffness.

or chestnut, etc. Among these innumerable shades, the light hair belongs to but few races, which chiefly inhabit Europe; such as the Germanic branches, Slaves and Celts of the Aryan stock, and the Finnish branch of the Turanian stock. Some light haired individuals are found among other peoples; as among the Armenians, who are partly of Aryan origin, the Semitics of Syria, among the Jews, and perhaps in Africa among the Berbers of the Atlas.* The red hair, on the contrary, seems represented, at least by some individuals, in all known races, whether equatorial or boreal. Whilst the red colour forms on the one hand, as it were, a bond of union between the most distinct races, the brown colour may be considered as establishing the transition between the light and the darkest shade. In point of fact, there are, excepting the Negroes, few black haired races among whom there are not many instances of brown hair, approaching more or less the red. This applies both to the inhabitants of the highest north, as to the Polynesian islanders, to the Americans, as well as to the Turanians, etc.

The inhabitants of Africa, exclusive of the northern coast, present few variations in the colour of the hair. This is also the case in America, where black and brown predominate. Some rare exceptions in Peru and among the Mandans deserve notice. As regards the Peruvians, we have as yet no right to discard the idea of intermixture; and as to some Mandans with light and silvery hair, living in subterraneous cabins, they always appeared to me to owe that peculiarity to a partial leucosis. Oceania resembles in this respect America, presenting the same colours, and probably less exceptions. It is different in Asia; but there also must the black and brown be considered as the most prevalent colours, excepting on some spots in the high table lands of the Himalaya, and specially in the west of that continent, where the juxtaposition or the intermixture of different races present samples of all shades of hair, as we find in Europe, here and there. It is the Aryan race in its numerous ramifications which inhabits these regions, and which presents, besides all the cranial forms, also all shades in the hair, from the jet black hair of the Hindoo to the pale yellow of the German or the Slavonian.

* Among the Berbers, I have hitherto only found that ash-grey colour, which is also met with among other allophyletic nations in Arabia, Egypt, among the Turks, etc. It must, moreover, be borne in mind, that the use of lie-wash, of powders and ointments, produces an artificial colour of the hair. I have seen all kinds of shades, from a fiery red to a silvery white, produced by these means. Just as originally dark hair may become discoloured by such means, so may it, *vice versa*, appear black, as I found in a wig from the Fiji islands. A thick black powder encrusted the circumference of each hair, and the original brown colour could only be seen after repeated washings.

From what precedes, we arrive at the conclusion that the colour of the hair alone is insufficient to characterise a race; for we have seen that the same colour—black, for instance—is the appanage of almost all the great groups of mankind, and that all shades may be met with in one and the same race. It is this last circumstance which must be taken in account in considering the question whether the colour of hair in a race may change in time and a different climate. Though numerous documents seem to refute the idea of a change, I must ask how we can explain the great variety of colour in the Aryan family, supposed to have descended from one stock; I, moreover, must appeal to daily observation. How many children with fair or reddish hair do not at puberty have it changed into nut-brown! A change in a contrary direction, that is to say from dark to light (apart from the gradual change to white by age), is rare, though not absolutely impossible. The variegated colour of the hair of an individual, and even in a single hair from the bulb to the point, must not be omitted; nor the different colour of the down covering various parts of the same body.

Characters as important as those of colour are deduced from the stiffness, flexibility, straight or frizzled condition of the hair. The hair is *smooth* when the hairs are rectilinear, *curly* when they curve at the extremity, *frizzled* when they form curves in their whole length, and *crisp* when they are disposed in small or large ringlets resembling wool.

Perfectly smooth hair is the appanage of the Americans, the peoples of High Asia, China, Japan, Malasia, etc. It is less common in Europe, and almost unknown in Africa. Curly hair is more or less found in the Aryan race, among the Semitics, in Polynesia and Australia, and individually also among the races cited above. Frizzled hair is very prevalent in Africa, arising frequently from the commixture of Nigritian blood, as in Egypt, in Abyssinia, amongst the Gallas, etc. It is also sporadically found among the Arabs and the Jews; more rarely among some European Aryans. The crisp hair predominates in Africa among the Negroes, the Hottentots, and in Melanesia.

As regards the latter region we must establish a distinction. Although there are Papuas with very fine hair, separated in tufts, crisp, and approaching that of the Negro and Hottentot, there are others who are '*mop-headed*,' wearing those enormous wigs, of which we possess descriptions and samples, and whose hair is far from presenting the characters of the first variety, as we shall show from

microscopic examination. We must here notice that Africa contains peoples possessing similar wigs as the Hadendoas, and that the Cafusos of South America offer another instance of this kind. I have, even in Europe, met with three individuals whose hair had the same aspect; but I had no opportunity of subjecting them to microscopic examination.

The general form which results from the stiffness or flexibility of the hair, appeared to me the most striking and persistent character. There is no Negro without more or less crisp hair; there is no American without hair like a horse-mane, so to say; no Aryan who possesses either of these characteristic hairs on the head. With such a result, furnished by simple inspection, we ask, what is the cause of this diversity? It is for the microscope to answer the question. It will tell us that these differences result from the thickness and the contours of the hair, apart from the various dispositions which characterise the interior of the body of the hair, which will also be revealed to us by the instrument.

One word, on the implantation of the hair on the surface of the integument, before proceeding to microscopic examination. In the great majority of the races of man, the hair issues from its cutaneous envelope in an oblique direction, and the disposition of the hairs and the down presents according to the regions of the head and the body, the aspect of vortices, eccentric and concentric curves. In the Hottentot, the Papuan with crisp hair, and in a great portion of Negro peoples, the hair is implanted perpendicularly*, and disposed in large or small round tufts. The Bosjesman presents, as far as I am aware, the smallest tufts.

III. GENERAL OBSERVATIONS ON THE HAIR EXAMINED BY THE MICROSCOPE IN A LONGITUDINAL DIRECTION.

I distinguish, like all anatomists, in each hair the root and the stem. The first consists of the bulb and the papilla. With regard to the shaft, it is not sufficient to examine it at any point in its length; it is requisite separately to examine the base, and specially the point, which presents certain peculiarities. The elements composing the hair are the epithelium, the cortical or fibrous, and the medullary substance.

1. THE ROOT. The great diversity in aspect exhibited by the hair of different races, leads to the supposition that the root should,

* Is this diversity caused by the great thickness of the scalp in the Nigritian races?

if not in structure, at least in conformation, present some notable differences. And, in fact, I have, in the hair belonging to individuals of different races, found bulbs and roots cylindrical, conical, spindle or club shaped, and others of globular form, or flattened at the base. Contractions and incisions were not wanting. The inferior extremity may be very slender or enlarged, and, in the first case, curved like a hook. I have seen such roots in desiccated hair torn from their follicles.

At the beginning of my researches, I felt inclined to consider the variations in the form of the root as race peculiarities; but, on extending my observations to a number of individuals, I changed my opinion. The reasons why I attach no importance to the form of the bulb are the following. In the first place, I found that individuals of the same race present remarkable differences in the form of the hair-bulb, and, what is more, even the hairs of the same individual show great diversities in this respect. All this may be explained by the metamorphosis of the bulb during its development, and by its gradual atrophy, which accompanies the falling off of the hair. To arrive in this respect at a fair result, we ought to examine the fresh bulbs of sound hair, which I have hitherto had no opportunity of doing.

2. **THE SHAFT.** The shaft, when subjected to microscopic examination in the direction of its length, presents differences according to the state of its development. For, before attaining its full growth, the hair passes, so to say, through an embryonic stage; and it is noteworthy that the down is abundantly intermingled with the hair in the polar races, as, for instance, in the Esquimaux and Laps.* In this stage the hair is transparent, having in the above races the appearance of a silvered empty tube; for I have never been able to detect the cellular thread which characterises the hair with a medullary substance. Whenever the point of the hair is finely drawn out, it contains a very transparent central canal. In such cases the transverse partitions gradually disappear on approaching the point; even the hair of the Bosjesman and the American possess this character.† It is rare that the portion of the stem contained in the follicle, though transparent, shows a well-defined canal.

* The same condition is observed in animals of the polar regions, in the polar dog.

† When the point of the hair, not being very fine, terminates in a pencil, the tubes composing it are equally transparent. The same thing is observed in the knots which I have seen on the hair of the inhabitants of the Deccan. These knots are bristling with small transparent and diverging tubes. I am inclined to consider these cylindrical and diaphanous cellules as the primitive element of the cortical substance, which changes its form by the juxtaposition in the mass of the stem.

Every hair completely developed, and examined longitudinally by the aid of the microscope, belongs to one of the following classes :—

(a) It presents in its whole tract a central line perfectly diaphanous, with well-defined sides, more or less wide, according to the decreasing or diminishing thickness of the hair. We are involuntarily led to consider the silvery portion a canal without medullary substance. I have employed no reagents to assure myself whether it has a cellular structure; I simply describe what I have seen, without engaging in histological researches. I also ignore whether this canal be empty or whether it contains air, a gaseous or oily fluid. I simply confine myself to describe its presence.

(b) In a second class of hair we perceive a cellular canal positively filled, and with less regular margins than in the first class. It is frequently broken off, and we find in its place a transparent gap, without any medullary substance. This is distinguished from the cortical substance by its tint, which is either darker, as a general rule, or lighter, or has a greyish, smoky aspect, specially in white hair. Thus, in black hair, the medullary substance is brownish when visible; in dark brown hair it is reddish or orange colour; it is of a golden yellow in lighter coloured hair, whether perceived in the whole tract of the hair in the form of a full canal, or whether it merely presents more or less elongated cellular clusters, which usually diminish in thickness towards their extremities.

(c) There is a third class of hair which, apart from the cutaneous extremity and the point, presents nothing in the whole tract indicative that the structure of the centre differs from the rest. There are only here and there seen fine whitish lines which might be taken as interstices situated between the elongated or fibrous cellules which constitute the cortical substance.

In reviewing the human races, and distributing them according to the three categories just established, we place in the first category the Aryan family, and specially its branches with light hair. It is only by way of exception that we find the medullary canal empty and silvery in the light hair of some Berbers, Turks, or ancient Egyptians; and in such cases the origin of the individual might be somewhat doubtful. But even in the Aryan race, the presence of a diaphanous canal is not constant. It is found in most Europeans with light hair, as in Germans, Slavonians, Celts, Frenchmen, Italians, &c. In Ireland the presence of a full canal is found in the hair of some light individuals, and the dark-haired European nations also possess, at least in the thick hairs, a distinct medullary substance, whilst the

finest hairs of the same head have an empty canal. What, therefore, constitutes the rule in the light hair of the Aryans of Europe occurs in our country as an exception in the dark hair of the same race.*

To the second category belong the greater portion of human races, such as the Esquimaux, the Laps, the Americans in general, the Turanians, the Polynesians, the Australians, &c.

The third class comprises the blackest hair. Thus, the Negro, the Papuan, the inhabitants of Southern India, the Malays, &c., possess hair which, examined in a longitudinal direction, present no difference between the cortical and the medullary substance. We should, however, deceive ourselves in deducing from this a general rule as regards these peoples. For, when the hair of a Bosjesman or a Negro is less deep in colour, when it approaches brown or red the medullary substance is seen as distinct as in other races. Besides, though in jet black hair the substance is not visible, we are not justified in concluding that it is altogether absent.

After what has been stated, we attach only a relative value to the preceding classification; for we have just seen that the Aryan race presents in its different branches all the indicated varieties as regards the relations of the central substance to the peripheral. We must, also, bear in mind that the hair of the same individual belongs, according to the degree of its development, or the variety of colour, to either of these categories. I have further observed that the three conditions indicated may be found in the same hair: thus, the point and the inferior extremity of the stem may have a diaphanous centre; the adjoining portions of these parts may have a coloured medullary thread; whilst in the intermediate portion neither of the above conditions exists.

Whilst the inspection of the hair in a longitudinal direction is indispensable for the appreciation of the value of the indicated differences, it is nevertheless insufficient to establish a convenient base of classification. There is another method to attain our object: by subjecting to the microscope the transverse section.

IV. MICROSCOPIC EXAMINATION OF THE TRANSVERSE SECTIONS OF HAIR.

The transverse sections of hair must be as fine as possible. Whenever they are coarsely made, the hair collapses in the direction of its

* The Aryans of Asia, the Persians and Hindoos, for instance, whose hair is very black, belong either to the second or third category; either their hair presents the medullary coloured thread, or nothing particular can be distinguished in the centre.

length, and we then cannot properly estimate its circumference. I used for my observations a small microscope by Oberhaeuser, Flan-
din's micrometer, and microtome, very carefully manufactured by
Mr. Hartnaek. Without the microtome it seems to me very difficult,
if not impossible, to obtain transverse sections sufficiently fine for
exact study.

The figures accompanying my description express *hundreds of millimeters*. The transverse section of the hair is sometimes quite circular, but frequently more or less elongated, when two diameters must be indicated. I always place the large diameter before the second, separating them by the mark (:) indicative of their proportion. It must also be borne in mind that the two terms of the proportion express the *absolute dimensions* in hundreds of millimeters.

The transverse sections of the hair enable us to examine the form of their contour, and to establish their different diameters and their thickness by micrometry, as well as to assure ourself of the presence or absence of a medullary substance, and its relation to the cortical substance. By these means the differential characters, if any exist in the human races, may be clearly established.

This portion of my researches being the most important, I have, for the convenience of the reader, adjoined plates. In order to exclude, on my part, any preconceived idea, I abstain from formulating in this place a rigorous classification; for, before classifying, we must ascertain whether the subject admits of it. Nevertheless, in order to proceed methodically, I separate the three great races of man in well-known groups, *s.g.*, as Aryans, whatever their *habitat*; whilst at the same time I comprise such races whose hair presents analogous characters as in Negroes and certain Papuans.

Before entering into any details, I must offer some remarks, in order to avoid repetition. Hairs plucked from the same head always differ in thickness, sometimes in colour as well as in the presence or absence of the medullary substance, and its relations to the cortical substance. It is not so as regards the form of their contours; *that is nearly constant in the same individual, except in crossbreeds*. Taking these facts into consideration, I have always examined numerous sections of several hairs of the same individual, besides which I have examined the hair of several individuals belonging to the same race. As I cannot in the plates represent all the sections I made, I shall confine myself to describe their general form without neglecting such which most deviate from it. I now proceed to the microscopic examination of the transverse sections of the human hair.

The reader is requested to supply, by the study of the plates, the brevity of the descriptions. The ordinary ciphers and the French or Greek letters will easily enable the reader to find the figures corresponding to the indications of the text.

1. NEGROES (VI).* Among the six Negroes there was only one in whom the form of the contours of some of his hairs differed from the usual form.† This is elliptic in the great majority of cases. Exceptionally the ellipsis presents an inwardly curved margin, the section is then reniform, or rather the ellipsis presents a depressed spot. As a mean term, the diameters of the Negro hair are 20 : 12. The finer the hair, the greater the proportion of the small to the large diameter; thus, whilst the thickest hairs give 30 : 15,‡ the finest hair gave 18 : 10, and even 15 : 10; and if these three proportions are reduced to hundreds, it will be found that the large diameter being represented by 100, the small diameter is 50 in the thickest hair, 55 in the intermediate, and 66 in the finest hair. From these data it appears that the hair of the Negro is flattened in proportion to its thickness. In the six samples, one of which is of red colour, one-half present the medullary substance perfectly distinct at least in most of the sections. It is distinguished by a *small* central and circumscribed spot of the same form as that of the hair. In the sections as well as in the other three individuals examined, the medullary substance is absent; some marblings are, however, visible along the whole section. The hair of the Negro is thus elliptical and much flattened.§ The medullary substance does not always exist; the centre is never empty.

2. HOTTENTOT—BOSJESMAN (I). The hairs of the individual examined are some black and some white, their form being that of the Negro. The ellipsis is, however, somewhat narrower; for, as a mean term, the two diameters are 20 : 11. The sections of the white hair show the medullary substance separated, whilst the black are only marbled.

β The hair from the pubes of the Bosjesman female, known under the name of the Hottentot Venus, presented a very flattened ellipsis; the diameters, the thickest of them, are 20 : 10. Some of the sections are kidney-shaped. No trace of a medullary substance. The small circles produced by the scrolling are but 1.5 millimeters in width.

* The Roman numbers indicate the number of individuals whose hair was examined by the indicated method.

† Three sections presented in this individual a nearly circular form.

‡ The individual to whom these hairs belonged was born in Buenos-Ayres.

§ The flattening is seen in the direction of the scroll. The small circles caused in rolling present a width of 3.5 to 4 millimeters when the hairs are very fine, and in the contrary case of 5 to 8 millimeters.

3. PAPUANS OF NEW GUINEA (II). *a.* One of the heads of hair is very crisp; the form of its transverse sections, though always elliptic, is distinguished by the irregularity of one of its borders, which is either quite straight, or curved inwards in one or two spots; some sections are pointed at one of their extremities;* the proportions of the diameters denote *the greatest flattening which I have found in human hair*. The following are the dimensions—29 : 10 and 25 : 7 for the flattest; and 25 : 14 for the widest. The presence of the medullary substance is the rule in this individual, but the central spot which indicates it, is more contracted than in the Negro.

b. In the second individual, whose hairs are a little thicker, the contours of the ellipsis are more regular, though sometimes flattened on one of their borders. Diameters 32 : 14 and 28 : 13; no medullary substance in this Papuan, except in one section.

4. MELANESIANS OF OCEANIA. *a.* From *New Zealand* (IV). Three samples of these four heads of hair are of a yellow-reddish colour, the fourth is ash grey; these are likely discoloured by some hair wash. One sample presents the crisp aspect of the Negro hair, the rest present circles which succeed each other at different distances, so as to form tresses rather than tufts.

Though the general form of the sections is in these four samples still elliptic, it approaches the oval form by the enlargement of its small diameter. The crisp hair of the first sample, α , gives the diameters 22 : 15, whilst in the others, β , the measures give 24 : 18; 30 : 20; 33 : 22.

These hairs are generally thicker than those of the Negro, and it is a question whether the Malayo-Polynesian blood, so prevalent in Melanesia, did not run in the veins of the individuals whose hair is under examination. As regards the medullary substance, it is present in two samples and absent in the rest.

b. *Néo-Caledonians* (I). The same doubts as regards origin arise in the only specimen of hair I possess from New Caledonia. By its long exposure to the air the colour is ash-grey; it is much curled in all its length; the form of the section approaches the oval, but the margins are somewhat curved; the diameters vary between 30 : 20 and 27 : 25; the medullary substance is well defined.

c. *Tasmanians* (II). Two specimens from Van Diemen's Land, one black, the other yellowish-white, approach the hair of the New-Irelanders by their tresses, their diameters, and internal dispositions. Diameters of the black hairs = 25 : 15; of the light hairs = 25 : 15

* Compare with the Negro of Buenos-Ayres.

to 27 : 20. The first has no medullary substance; the second has it much enlarged.

5. ARCHIPELAGO FIJI (IV). Two of the four specimens are of a reddish flaxen colour, the two others blackish-brown. One of the last heads of hair has the appearance of a large mop-shaped, very crisp wig. This and the two first are characterised by the great thickness of each individual hair, the yellow or orange colour in the interior of the sections, the large black central spot, and by the elliptical form of the contours, which predominates in spite of the irregularities presented in this respect by the hairs of the wig; where we observe reniform and triangular sections with depressed points and irregular margins, forms which are seen in the hairs of the beard in the Aryan race. Diameters = 35 : 20 and 33 : 20 in two individuals; but in the wig we find 40 : 22; 37 : 22 and even 37 : 20 for the elliptical sections with regular form.

One of the specimens, which is of a blackish-brown, is distinguished from the rest by its relative fineness, and by the tendency of its sections to the oval form. Diameters = 28 : 20 and 22 : 16.

6. POLYNESIA. *a. Nukahiva* (I). Hair slightly frizzled and dark brown. The sections of the thick hairs have an elliptic form, whilst the fine hairs tend to the circular form.* Diameters = 30 : 15; 30 : 20; 25 : 20 and 22 : 10. The interior of these sections is reddish and marbled, scarcely any trace of a central spot.

b. Tikopia (II). One specimen of hair smooth, amber colour; the second specimen, of the same colour, but intermixed with reddish-brown hairs. Besides the ellipsis ordinarily with one straight border, there are observed sections enlarged in their small diameter and approaching the oval form. The diameters vary between 30 : 20; 27 : 12 and 27 or 23 : 20. The interior of the section presents the central spot or marblings.

c. New Zealand (III). These three scalps, black and dark-brown in colour, show in their sections a greater tendency to the circular form than the preceding. Diameters = 30 : 20; 30 : 25; 25 : 17 and 20 : 15. The central spot is very distinct.

7. MALASIA (I). Hair of a Malay girl, jet black, and slightly curled at the point; it presents, in its sections, forms intermediate between the circle and the perfect oval. Diameters = 35 : 27; 26 : 18; 25 : 17; 28 : 20 and 23 : 20. Some sections are irregular; the greater portions are only marbled; others have a central spot.

* Should this be a cross-bred?

8. AUSTRALIA (II). Hair from Port St. George; black, much scrolled, and consequently of doubtful origin, presents in its sections an enlarged and irregular ellipsis. Diameters = 30 : 20 : 25 : 20. Central spot very large.

Another specimen from the same country; colour red and very curly, consisting of finer hair, the sections of which are much flattened; their predominant form is the irregular ellipsis; there are also reniform sections. Diameters 25 : 15 to 25 : 30. Marblings without central spot.

9. JAPANESE (II). Man, and a girl seventeen years old. Hair of the male very black, stiff, and glossy; sections *perfectly round*. Their diameter is comprised between 25 and 22. The interior is marbled, rarely containing a small central spot. The sections of the hair of the girl present the same regular forms; most are round, some elongated; all have a large central spot. Diameters = 25 for the round, and 27 : 23 for the elongated.

10. SIAMESE (IV). Hair black and smooth. Besides perfectly circular sections, there are, in all individuals, some a little elongated. These latter present the following diameters: 28 : 20; 27 : 24; 26 : 24; and the largest are 30 : 23; 30 : 25. The greater part of the sections have a small central spot.

11. CHINESE (I). The hairs of the Chinese present sections of various forms, from the circular to the elliptic; the ellipsis is, however, never narrow. The following are the diameters for the elongated sections = 33 : 24; 30 : 21; 31 : 19; 30 : 25. The central spot is met with in one-half of the sections.

A cross-bred, whose father is a Chinese, and the mother a Siamese, presented in the sections of the hair a more or less circular form without any central spot.

12. AMERICANS FROM THE NORTH (I). I had only a few hairs from the cranium of a Choctaw at my disposal. The form of the sections of the fine hairs is nearly circular, whilst that of the thick hairs is somewhat elongated. The diameters of the latter are = 25 : 20. In the interior are seen marblings rather than central spots.

13. AMERICANS OF THE SOUTH. a. *Mummies of Aymards of Peru* (II). Hair very smooth, of considerable length, and of red colour, approaching brown. The form of the sections is nearly circular; but the margins are nearly always irregular and angular. The most elongated rings have diameters from 25 and 26 : 23. The central spot which exists in most of the sections is very large.

b. Americans of the South (1)*. Hair black and coarse. The principal form of sections is a circle of 25 in diameter, with a small central spot. The diameters of the elongated sections are = 20 : 19, and present in their interior marblings rather than a separate medullary substance.

c. Tribe of the Jambas (1)†. This glossy, dark, and very coarse hair, presents all forms from oval to the circle; hence a great variation as regards the diameter = 33 : 15; 33 : 22; 25 : 20; 25 : 23. Small central spot in all the sections.

It appears to me of interest to add to the preceding observations relating to deceased persons of probably pure origin, the following three made on living subjects of the same continent.

a. M. M—, a native of the Peruvian Andes, aged sixty-three, according to his own account a pure Indian. He is of lank stature; cranium brachycephalous and square, as usual in the Aymara race; cheekbones slightly prominent. The colour of the skin, and the *ensemble* of his physiognomy and stature, do not show his origin; the form of the cerebral cranium is, however, decidedly Indian. Let us now see what says the hair, which *M. M*— assures us was formerly light, but is now whitened, inclining to a greenish-yellow; it is also stiff.

What strikes us in the sections of this hair, is the complete irregularity in its contours,‡ and the tendency of the small diameter to enlarge; a single section, which is the smallest of the five I have examined, presents the circular form without central spot. In all the others the medullary canal is very large. Diameters = 30 : 18; 30 : 22; 25 : 20; 18 : 15, and 12 : 12.

β The son of the preceding, a boy twelve years old, whose mother is also an Indian woman, has a head of hair very abundant, thick, slightly wavy, dark brown.§ The sections of his hair are distinguished by their irregular contours; the smallest are rounded or square, whilst the larger are rather elongated. The form of the latter varies between a widened oval and pointed on one side (27 : 25), and an ellipsis with more or less interrupted borders (30 : 17; 30 : 20; 25 : 20). No traces of a medullary substance; the centre is transparent. Will this be the case at a more advanced age? We doubt it, as the father possesses the usual pigment, and we shall see in the

* Without any indication as regards origin.

† Province of Macas.

‡ This peculiarity appears to me to depend somewhat on age; for I have observed it, though less marked, in the hair of aged Aryans.

§ Excepting in the colour of the skin, the boy presents the Indian type.

sequel, in the children of the Basques, that they are in the same condition compared with the adults.

γ. M. M—z of Lima, aged twenty-three. His father is a Spaniard, his mother an Indian. His hair is black, fine, very curly. The form of the sections presents, only exceptionally, that of an ellipsis (25 : 13), of a widened oval (26 : 21), and of triangles blunted at the points. The centre is perfectly transparent. Mr. M—z has the features of the Spanish stock, and slightly Semitic.

14. ESQUIMAUX (II). One of the specimens, black in colour, presents a round, or but little elongated form. Diameter of the first = 30, of the second = 20 : 17. Another specimen, altered in colour and in structure by its position in the earth, presents, besides round, also elliptical sections, with irregular, straight, or curved borders. The diameters vary from 36 : 20 to 25 : 22. Whilst the first specimen of hair is marbled in its sections, the second shows, in the middle of these sections, large holes with regular contours. Thus the medullary substance resisted decomposition less than the cortical.

15. MONGOL (I). Hair reddish brown, intermixed with red hair. The form of the sections approaches the circular. Diameters 33 : 30; 25 : 23; 27 : 22. The central spot is large, and nowhere absent.

16. TURKS (II). One of the specimens, yellowish-grey, belongs to a Turk of Smyrna.* Though there are some rounded sections without central spot, the greater portion are very elongated, and present a small spot in the centre. The diameter of the latter varies between 30 : 15 and 23 : 17. The second of these sections belonged to a Kouroglou of Algeria. It is greyish-red, and is distinguished by the predominance of the round form in its sections, some of which are of a wide oval form = 17 : 15. It is noteworthy that the centre of all the sections is perfectly diaphanous.

17. EGYPTIANS. a. *Modern* (II). Though one specimen of these hairs be slightly frizzled and the second smooth, they present a great analogy in the form of their sections. The colour is intensely black. The predominant form is the ellipsis, with very irregular borders; most of the sections are reniform. By the side of these curved ellipses there are some very abnormal in form, more or less triangular.† In the ellipsis the diameters are 40 : 17; 30 : 18 and 17; 30 : 15; in the finest hairs, 25 : 15; 28 : 15. Central spot very large in all the sections.

b. *Mummies* (VI); a. *with thick black hair* (III). Of these antique

* The origin of this individual is doubtful.

† Compare the wig of the Fiji with the hair of the beard.

specimens of hair one only exactly corresponds with the preceding by the generally elliptical form of its sections and by the thickness of the hair (33 : 17; 33 : 20), as well as by the well marked central spots. The two other specimens show, in the form of their sections, a tendency towards the oval form (30 : 20; 22 : 15; 20 : 15). These are somewhat finer, with more regular contours; the medulla is not always separate from the cortical substance.

β. Two specimens are brown inclining to red, and one is of reddish-yellow colour (III). The hair in these specimens is finer than in the black. The darkest incline towards the enlarged oval form, of which the following are the proportions, 25 and 26 : 20; 23 : 17 and 18. Most of the sections have a transparent centre, a few only show a small spot. The two lightest specimens furnished elliptical, mixed with oval sections, of the following dimensions: *a*, 25 : 15 and 20; 11 and 12; * *b*, 25 : 20; 25 : 15 and 15 : 10. We must also notice that *a* presents the central spots, whilst that of *b* is perfectly diaphanous.

18. **BERBER KABYLE (I)**. The form of the sections varies between the ellipsis and the oval. Diameters = 28 : 17; 26 : 15; 25 and 23 : 18; no central spot.

19. **ARAB (I)**. This specimen of black hair presents in the sections chiefly the elongated irregular ellipsis (34 : 18; 32 : 16), with small central spots, also some triangular sections† by the side of a secondary form, which is oval (23 : 17; 20 : 16), and without any central spot.

20. **EAST INDIANS**. By the kindness of Mr. de Montagu and his friends in India, Colonel Pope, Colonel Speak, and Dr. Leith, I am in possession of sixteen specimens of hair from natives of the Presidency of Bombay and the central Deccan. In order not to encumber this short sketch with too many details, I shall confine myself to state the result of my researches on the hair of such native Indians considered as belonging to the primitive stock, to which I shall add the Hindoo Brahman as a member of the Aryan family. These specimens of hair are all, without exception, of a jet black, metallic or silky gloss, and the hairs more or less fine and curly; all this is probably the effect of climate. By the aid of the microscope we may ascertain what belongs to the race.

a. **Gond (I)**. The predominant form of the sections is elliptical (25 : 13 and 15); others present the pointed oval form (25 : 20), and

* *a* reminds us of the Bosjesman and the Negro, and *b* of the Aryan; but the presence of the two forms upon the same head modifies the first impression.

† Compare with the modern Egyptian, in whom there is sometimes a mixture of Arab blood.

there are some few perfectly round. Marblings in the interior; no central spot.

b. Kols (11). Scarcely any section of elliptical form; the greater number incline towards the wide oval; generally great tendency towards circular contours. Diameters 33:22; 23:17; 25:20; 23:20. Marblings, or very small central spots.

c. Bhil (1). Form of sections, either an irregular ellipsis or an enlarged oval. In the first variety there is usually a small central spot; in the second only marblings. Diameters 30:17 and 20; 26:18; 20:17.

† As regards the form of the sections all the other specimens belonging to the natives of India may be divided into two classes. Either it is the reniform ellipsis with a central spot which predominates, as for instance in a man of Ahmedabad, in a Varouli, and a Kathkouri; or the form is circular mixed with irregular sections, which predominate, as in an individual of Mhar. In this specimen the central spot is seen also in the nearly circular sections. These specimens present on the whole in their sections the two extreme forms. Ordinarily one of these forms predominates in the same head, intermixed with intermediate oval forms. My researches are, however, not sufficiently advanced to shew in such cases the primitive forms and the stock from which they are derived. I can only state the facts.

d. Brahman (1). Very regular form of sections presenting a striking resemblance to each other; sometimes an ellipsis, the long borders of which very straight, the small curved, sometimes an oval. Diameters, 22:14; 28:16. A small central spot well defined, presents the same contours as the section in general.

21. *PERSIANS* (11). The hair of these two specimens is somewhat thicker, as in the preceding. The forms of the sections are the same; namely, oviform ellipses, but with more equally curved border. Diameters, 30:17; 29:18; 29:20; 26:17. In one specimen the centre is diaphanous, in the second there is a well defined small spot.

22. *ARYANS OF EUROPE*. *a. Italian* (1). Hair chestnut colour. Sections oval, 23:17; 20:15; centre transparent.

b. Germans (14). Hair sombre flaxen, or light chestnut colour; two specimens of males and two of females. The general form of the sections is oval and regular. Exceptionally the borders are somewhat straight, angular or curved. Among a considerable number of sections the flattest is 30:16, and the most circular 25:30. The great majority presents the following dimensions: 22:15; 21:15; 25:15. In one specimen of the two males, and one of the two females, the

centre of all the sections is transparent; in the other of the male it is only transparent in some, and in the second female specimen it is scarcely transparent in any.

c. *Lithuanians* (II). The colour of these two specimens is of straw-yellow.* The sections are oval, with a tendency to the circular form, specially so in one specimen. Diameters, *a*, 24 : 19; 27 : 20; —*b*, 28 : 17; 28 : 20; 23 : 20. The centre is, without exception, transparent.

d. *Irish* (XLVIII). Excepting a single specimen obtained from a turf-pit, this collection has been formed from living persons by Abbé Domenech. I have subjected all these samples of hair to a double examination; first, to ascertain the variations of the hair in a nation comparatively little mixed, and composed, as history teaches, to a great extent of Aryan elements; and, secondly, to assure myself whether there be an allophyletic stock intermixed with the Aryans. Moreover, accident having placed at my disposal a specimen of hair of great antiquity, its comparison with that of the living might furnish a base for the establishment of what is constant in human races, even in a system of the organism which presents such small proportions.

A. The hair obtained from the turf-pit is smooth and reddish-brown. Sections oviform and elliptical = 22 : 16; 22 : 15; 20 : 15. The centre presents in most cases a small central spot; it is diaphanous in others.

B. The other forty-seven specimens may, according to their colour, be divided into three series, of which the first (16) comprises light hair, mostly golden light; the second (16) comprises dark hair, and the third (15) black hair. To spare the reader the trouble of tiresome details, I present a summary of the results obtained by the examination of the sections. And first, with regard to the volume of the hairs, the lighter the colour the finer the hairs, and *vice versa*. This rule is, however, subject to exceptions; there are three specimens of golden light, the hair of which attains the thickness of the black hairs. As regards the form of the contours of the sections, there is not a single specimen which does not present elliptical or oval sections; but whilst this is the predominant and almost exclusive form in the light hair, there are, on the contrary, in the dark specimens, besides elongated sections, others more or less circular. The irregular contours are rare in the first variety, and very frequent in the second. The light and fine hairs have generally a transparent centre,

* The cranial type of these two young savants is that of the Slavonian race, both in the cerebral as well as the facial cranium.

whilst the black as well as coarse light hair present central spots, at times very large. When now we consider the sufficiently constant form and volume of the hair belonging to the branches of the Aryan family, characters which are to a considerable extent found among the Irish, we can only, as regards the variations, attribute them to the commixture of a foreign element.* The examination of the hair of Basques will confirm this view. It results farther, from this examination, that in the intermixture of races there may be not merely fusion, but a change of characters; at least as regards the hair.

The following table, containing the measures of the extreme forms, will support the preceding remarks:—

B. LIGHT HAIR.	C. BLACK HAIR.
<i>Ordinary Proportions with Transparent Centre.</i>	
a. 20 : 15 ; 21 : 15 ; 20 : 13.	32 : 13 ; 15 : 12 ; 12 : 11.
β. 27 : 12 ; 25 : 12 ; 25 : 16 ; 20 : 12 ; 20 : 15.	31 : 20 ; 35 : 15 ; 24 : 20 ; 25 : 20.
<i>Exceptional Proportions and Central Spots.</i>	
γ. 30 : 16 ; 28 : 16.	34 : 15 ; 30 : 16 ; 27 : 15.
δ. 32 : 20 ; 30 : 21 ; 25 : 15.	30 : 18 ; 30 : 25.
ε. 34 : 19 ; 33 : 21 ; 27 : 15.	32 : 20 ; 23 : 21.

23. **BASQUES.** All shades, from flaxen to deep black, are represented in the Basques of the present day. The light colour is preferentially found among those inhabiting the coast and the highest mountains. The average colour of the hair of the Basques is chestnut.† The light hair curls very easily, which is generally not the case with the black.

a. Specimen of black hair from a child aged 11; some light coloured hair in the occipital region. All the sections approach the circular form; the most elongated are 25 : 20. No central spot.

b. Adult male with stiff black hair. All the sections are oval or enlarged ellipses; some are triangular. Central spot well marked. Diameters, 29 : 20 ; 23 : 18 ; 24 : 22 ; 27 : 23.

It is evident that these specimens approach both the American and the Turanian, just as the language of the Basques recalls the Iberian origin.

We now examine the light hair.

* The craniological researches of Mr. Wilde evidently prove that, before the historical epoch, there existed in Ireland, as well as in England, Scotland, France, etc., two different races, the one brachycephalous, and the other dolichocephalous.

† The Basques are, in my opinion, far from constituting a homogeneous race. I believe them, on the contrary, to be much mixed. The marriages of the ancient Iberians with the Celts have been already noticed by the classical authors. The study of the physical type, specially of the cranium (see M. Broca's collection in the Museum of the Society), confirms these historical data.

a. Specimen of light colour inclining to chestnut, wavy, much curled. Sections elongated and oviform, most of them without central spot. Diameters= $30:15$; $30:20$; $25:15$.

In order to show the effect of the commixture of heterogeneous races, as for instance the Aryan and Iberian, I have examined the hair of two brothers, whose father is a Basque and the mother an Irishwoman. The following are the results of the examination:—

A. Chestnut coloured hair, intermixed with white hairs, slightly curled. Most of the sections are elliptical, narrow, with a diaphanous centre. Diameters = $25:15$; $22:17$; $22:15$. But besides this predominant form, there are circular and triangular sections, &c. These latter sections have sometimes a small central spot.

B. Hair darker and stiffer. The elongated form of the sections is not absent ($30:15$; $25:17$; $20:15$; $20:17$); but more than one half of the sections approach the circular form and have a central spot, though it is smaller than in the Basque with black hair.*

24. *French*. The hair of the French, of which I have examined a considerable number of specimens, presents all the shades and forms found in the series 22 and 23, which is explained by the multiplicity of ethnic elements which compose that great nation.

SUPPLEMENT.

I.—*Examination of the hair in some other parts of the body.*

1. *Italians*.—a. Moustaches. Hair, white and yellowish. Most of the sections are very irregular in form, resembling, for example, a triangle, or the form of the sole of a shoe, etc.† These thick hairs attain considerable dimensions; the following are the measurements: $55:30$; $48:30$; $45:30$; $27:25$. The central spot is of relative size. In no section is it entirely absent.

b. The hairs on the genitals are also very thick; their contours are more regular, though some have very singular forms. In the sections with regular forms, the central spots are relatively small. Diameters = $38:15$; $38:18$; $38:23$.

c. The hairs on the coccygian region are fine, and approach, much more than the preceding, the hair on the head, by their dimensions and forms. Diameters = $23:14$; $28:13$. Scarcely any traces of a central spot.

d. The hairs on the chest present, generally, the form of a shoe-

* Of these two brothers, A represents the elongated cranium of the Celts, despite the Iberian origin of his father; whilst the cranium of B is rounder.

† That which is the exception in the hairs of some individuals, is the rule as regards the beard.

sole; some of the sections are more regularly elliptical. Diameters = 38 : 37 and 36 : 20. Large central spot.

e. The hairs of the armpit, all with very diaphanous centres, present in their sections more or less regular ellipses. Diameters = 30 : 16; 32 : 18; 30 : 13; 23 : 15.

2. *German*. The same characters as in the Italian are observed in the hair of the beard and the armpit. The hairs on the genitals present no abnormal form.

f. The down on the back of the hand presents in the section the oval form with transparent centre. Diameter = 13 : 9.

II.—Hairs on the heads of *Anthropomorphous Apes*.

a. *Male Chimpanzee*. The sections are large: between 30 and 23. Their form is generally circular or nearly so: for example, 25 : 24.

Female Chimpanzee. Hairs somewhat finer. The complete circular form more rare, approaching rather the oval. Diameters = 24 : 20; 18 : 14, and exceptionally 25 : 16.

In both sexes no trace of a medullary canal.

β. *Male Adult Gorilla*. Hairs very thick. The form of the sections rather irregular; partakes of the ellipsis and the oval. Diameters = 37 : 25; 35 : 25; 40 : 31; in the finest = 27 : 23. The medullary canal is enormously large.

† *Young Female Gorilla*. Hairs finer. Their sections are either very regular, or with borders, if not angular, at least deviating from the regular curve. Diameters = 20 : 15;* 22 : 16; 17 : 10. The medullary canal is small and *rarely placed in the centre*.

γ. *Orang-Outang*. Sections large and elongated in ellipses, without central spots. Diameters = 35 : 20; 31 : 18.

b. *Gibbon (Rafflesii)*. Hairs extremely fine. Sections oval and very regular, without central spots. Diameters = 15 : 12; 13 : 10.

c. *Cynocephalous Baboon*. Besides circular sections there are some elongated, with irregular contours. Diameters of the first = 25; of the second 25 : 20. Central spots *very large and elongated*.

Résumé.

1. Microscopic examination accounts for the different aspects which the hair of the human races presents to the naked eye. The flatter the hair the more it curls, and the rounder the hair, the more stiff and smooth it becomes.

2. One extreme end of the scale is represented by the Papuas, the

* A striking analogy, in early age, with the Aryan race, at least in regard to the diameters of the first two sections.

Bosjesmans, and the Negroes; the other by the Polynesians, the Malays, the Siamese, the Japanese, the Turanians, and Americans, not excepting the Esquimaux. The Aryans occupy the intermediate space.

3. The Basques differ from the Aryan stock as much by their hair as by their language.

4. Cross-breds are recognisable by the fusion and juxtaposition of the characters inherent in the hair of their parents.

5. It is much less the anatomical disposition of the constituent elements, than the *form* of the hair, which produces the characteristic differences. Anatomically there would only be the transparent centre deprived of medullary substance in some branches of the Aryan race which would deserve to be considered. But the fine points of the hair belonging to allophyletic races, as well as their down, present the same peculiarity.

6. A single hair, presenting the average form characteristic of the race, might serve to define it. But without pretending to this degree of certainty, it is indubitable that the hair of the individual bears the stamp of his origin.

7. Though there are appreciable differences in the form of hairs in the same individual, the extreme forms are only met upon the same head where there is commixture of blood.

8. The small scale assigned to the diameters of the hair explains the relative resemblances between single hairs belonging to individuals of different stocks; but in spite of this apparent inconvenience, the general or predominant form of the sections does not in the same race transgress certain limits, and it is upon this that we must base our diagnosis.

9. The hair examined by our method appears to us to possess an incontestable value for the study of characters inherent in the races of man.

10. Some will find in it forms of transition, for instance, from the Polynesian to the Melanesian, from the Malay and Lithuanian to the Turanian, etc.; from this and the Basque to the American, etc.; whilst others may energetically point out the different and constant forms even in this apparently insignificant appendage of the skin.

11. It is with the form of the hair as with the form of the cranium, however unequal may be the importance of these two characters.

12. I have confined myself to the study of facts. But whilst admiring the incomparable wisdom of the Creator, who has so marvelously diversified what is apparently so minute, I declare my inability to trace it back to the origin of the creature.

POTT ON MYTHS OF THE ORIGIN OF MAN AND
LANGUAGE.*

It would not be fair to judge Arius solely from Athanasius' account of him, or even the Rev. Robert Montgomery, from the extracts from his works given by his Edinburgh reviewer. So, knowing nothing of Dr. Kaulen, against whom this "Anti-Kaulen" is a counterblast, except from its pages, we can only say that he appears to be a theologian who has built a theory of the origin and development of language on a theological basis, and, in the course of raising this structure, has taken occasion to sweep away (in a subjective sense, at least) the fragments of construction which Wilhelm von Humboldt and our Halle Professor had set up on the ground. So far so good, but, as Professor Pott admits, many of his own fellow philologists think he might as well have let this adversary alone, and he sometimes almost thinks so himself. As far as the actual controversy is concerned, we think it will be judged in England that the advice of these friends was judicious. Every student of language must be glad to hear Professor Pott express his opinions on philological matters lying outside the range of his more special labours, but it is just the great positive value of the book that makes it seem a pity that these opinions should be mixed up in a controversy with an antagonist who is no match for him. An unpleasant feeling hangs over the reader, that if the two combatants were to change sides, Pott could just as easily hold up to ridicule the weakness of Kaulen's knowledge of comparative philology, as he does now. When Pott attacked Max Müller's views on the Turanian languages in the *German Oriental Society's Journal*, the case was a very different one, for here his antagonist was a man quite worthy to receive his hardest hits, put in with his utmost skill.

The influence of Professor Max Müller's teaching has been so great in England, that his views on the fundamental structure of language have been, to a great extent, accepted by students as though there were no other views in the world. A set of typical

* *Anti-Kaulen, oder Mythische Vorstellungen vom Ursprunge der Völker und Sprachen nebst Beurtheilung der zwei sprachwissenschaftlichen Abhandlungen Heinrich v. Ewald's.* Von A. F. Pott, Dr.; Prof. d. allg. Sprachwissenschaft, etc. Lemgo & Detmold. 1863.

forms of language—the isolating stage, the agglutinating stage, the inflecting stage—are shown gradually sliding into one another, and in the far background is shadowed forth the evolution of language from a unity not yet visible, but hoped to become visible some day. The theory is a beautiful one, and Max Müller's lucid explanation, and well-chosen instances, are commonly thought in England to have cast a bright light, not only on the theory of grammatical structure (which nobody disputes), but also over the deeper problem of tracing language in general to its primary source. We do not say that it has or has not done so, but it seems to us that English students are not sufficiently alive to the fact that in Germany, Max Müller's views on this point meet with but slender support, and that the lamp which he has carried into these recesses of philology is looked upon there as nothing but a scientific will-o'-the-wisp. The writer who has put the idea of grammatical structure so clearly before the world by his system of symbols—Schleicher, of Jena—has no hesitation in giving his opinion point-blank: "There was therefore not one original language, but there were many." And there are three men who have laid themselves out more than any other men living to accumulate a working scientific knowledge of numbers of different families of language, and who ought to be able to catch the loose threads meeting in the distant unity, if it were possible with our present knowledge. They are Pott of Halle, and Buschmann and Steinthal of Berlin. The first goes with all his might against the assumption, and, so far as we can depend on our recollection of the general tenour of the works of the other two, they seem to prefer sitting down in darkness to accepting the light of Bunsen and Max Müller.

It is in great measure against the philologists, from whose stores Herr Kaulen has helped himself to arguments for the unity of language, that Pott's attacks are directed. He goes, on the one hand, against Bunsen and his coadjutors, whom he considers to have assimilated root-words of various families by the process of reducing them to indefiniteness both in sound and sense, and, on the other hand, he attacks Max Müller and H. von Ewald as having striven with hardly better success to wring a unity of the origin of speech from the study of grammatical form, while they troubled themselves very little about the dissimilarity of roots (the word he uses, by the way, is *blutwenig*, an expression which, innocuous as it is in German, one of the odd vagaries of our English euphemism has surrounded with such an atmosphere of mysterious horror, that even the police reports will not print it in full). That there is any such resemblance

among all the families of languages both sides of the world which are neither isolating nor inflecting, as to justify us in connecting them, by genealogical descent, is an idea which Germany repudiates.

It does not appear to German philologists in general, that the Turanian languages, to use the word only for the great family in Asia and Europe to which it really belongs, make up with the isolating languages, such as Chinese, and the inflecting languages, like Sanskrit and Arabic, the rest of language as a whole. The *incorporating* languages of America are, in Steintal's opinion, to be kept separate from them, and so are the Polynesian. But, after all, the question comes, Does a morphological affinity prove a genealogical affinity, or even the probability of one? The gist of Max Müller's argument is that it does. Germany, unconvinced, waits for further proof, and in the meantime busies herself, for the most part, about matters that lie nearer at hand.

We take, at p. 111, a passage from our author, which gives, in a condensed form, his views on the problem of the origin of language :

“ ‘All races are one man, but with different names; one soul, but with different speech; one spirit, but with different tone.’ Thus far Tertullian. I am the last to bring an objection against this utterance. Then, unity of the human race, in spite of the difference—in spite of the manifoldness within it; unity, in spite of the sudden separation of speech and race, brought on, according to the Hebrew legend, as it were by a *deus ex machina*; unity as a species, in a physiological sense, in spite of the manifold differences of race; unity in spirit, even were the origin in the last instance from a single pair and the source of speech and race from that single original pair a mere dream, destined to yield before the infinitely more probable supposition of a pluralistic beginning of mankind on several points of the earth, not merely at a single centre. But a difference of language, not yet to be surveyed in its full extent, is a fact which, if we do not have recourse to miracle, and thereby renounce every rational and scientific explanation, must find a *natural* solution, whether one gets through with one original form for the thousandfold formation of languages, whence, in spite of their great number and variety of kind, they are to be derived, or whether (to me, so far, the only credible theory) a plurality of original languages, not yet settled as to number, are required for the origins of different families, which can hardly be united genealogically, as Indo-Germanic, Semitic, Chinese, Tatar, the languages of America, &c. From these roots I should conjecture radically different lines running from their source in parallel directions, so that these lines, without any kind of contact, even through mixture between languages of any two such families, should keep an equal distance from each other. On the other hand, there reigns in

the so-called radically connected languages, for example, within the Indo-German family, Sanskrit, Zend, German, Slavonic, Celtic, Greek, Latin, and then again within the Latin in its Romance daughter-languages, Italian, Spanish, Portuguese, Provençal, French, Wallachian (to say nothing of the still subordinate dialects), the principle of continual splitting and severance from an originally single line, which, like the trunk of a tree, divides into a plurality of branches and twigs. But he who, against all chance of success, seeks also for those families which are, as it seems to me, specifically distinct and genealogically unconnected, a higher unity reaching back over them to that point, that in the last and highest instance the families of language of the earth, without exception, and from the lowest to the highest, must find their historical point of issue in but a single *root*, as from the one mother stem of the banyan tree, daughter-stems, bodily connected with it, spread themselves far around,—well, I wish him much luck on his road. Practicable, at least in the present state of science, and with the most patient and careful use of the means at her command, can such a project never be.”

To attempt to hold the balance between Pott and Max Müller is the last thing we should think of doing. We had rather turn aside to call attention to a point upon which not theory, but observation is urgently needed. Every one knows that in some languages, especially of barbarous tribes, a process of breaking down is going on by which several words or particles are put together and then reduced by hurry or imperfect pronunciation to a form in which the original elements are scarcely, if at all, recognisable by any one who does not know the history of the word. There is an account of the formation of a North American Indian word, meaning, if we remember right, “give me your pretty little paw,” from a number of words run together, and mutilated beyond all recognition. The story has been decanted from one book into another till readers are fairly sick of it, and look involuntarily forward when they meet with any allusion to American languages, in the fear that the pretty little paw is, for the fiftieth time, coming down upon them. But, though this important subject is often alluded to in a loose general way, how small a quantity of evidence we have regarding this important phenomenon beyond the scanty instances to be found in Heckewelder and Buschmann, and a few others, how little we know of the limits of its occurrence, and the condition of language which specially favours it. We do not say that no attention has been paid to it, but that the systematic body of observations which are urgently wanted from different parts of the world is hardly begun. A language running riot in such formations as this, might, for all we know, change its whole vocabulary in a few

generations, and alter itself beyond recognition. This matter is one on which sound observation can only be made by persons living in contact with savage tribes, and being able to carry their observations over a series of years, and it is clear that till we have more complete and scientific knowledge of what this process can and cannot do, its results will always be a barrier to the general classification of languages in their genealogical order. Our attention was lately recalled to this point by meeting with the word *shillorth* in common use in the West of England, and thus making up with *haporth* and *pennorth*, a series of formations in close analogy with the broken-down compounds of North America, in which the component parts of *halfpennyworth*, *pennyworth*, *shillingsworth*, are hardly less mutilated than in the regular American examples.

Much of the argument of Pott *v.* Kaulen goes into matter less belonging to anthropology than to biblical criticism, in which Professor Pott's views belong to the rationalistic school. Some remarks on the personification of names of tribes, &c., into mythic ancestors, however, belong to comparative mythology, and furnish a highly remarkable list of eponymic myths, of the class of that of Turk, and his two descendants, Tatar and Mongol, and that of Herakles and his two sons, Iber and Celtus, from whom, of course, the Iberians and Celts are descended. Perhaps the most remarkable are the personified African cities from Barth, the towns Rano and Kano, Katsena and Segseg. The author has not judged it necessary to give a complete list, including our own familiar Brutus and others who are to be met with, but a still fuller treatment of the theme would be a desirable contribution to science.

At p. 34 some remarks are made on the ways in which it may come to pass that an individual may have a plural name, as in the cases of Amici and Medici. There are some well-known Spanish names which might be adduced in this connection, Dolores, Mercedes, Angeles, &c., which form their diminutives so curiously in the first and last instances by the compromise of a feminine plural to a masculine noun, of course with a view to the fact that they are women's names, Dolorcitas, Merceditas, Angelitas. It is fair to treat these words as names, as they are commonly used as such, though technically they are only abbreviations on the high road to becoming independent names, for (unless we are mistaken) girls are not christened Dolores, &c., but Maria de los Dolores, Maria de las Mercedes, Maria de los Angeles, Mary of the Dolours, of the Joys, of the Angels.

Belonging, also, to mythology are remarks on the world-egg,

p. 68, and the two calabashes which, in Africa, represent the two halves of the egg-shell which formed heaven and earth. At p. 27, &c., are remarks on legends of genealogies and creations of man, made with a purpose of riveting the chains of caste, of which the descent of the Brahmins, Kshattriyas, and so forth, from the head, arms, thighs, and feet of Brahma, is the typical instance. Towards the end of the book, Professor Pott again gives his reason for entering into controversy, namely that Kaulen's book has in it that which might deceive many, by a misuse of the outward garb of science, and by taking to itself its phraseology, without really being science, or, at bottom, even wishing to be. We will not attempt to judge how far this is true, but Professor Pott's book leaves upon us an impression, that controversy in print between theology and philology is a thing to be avoided. Comparative philology is, and probably long will be, in an incomplete and transitional state, especially as to first principles, and trains of reasoning, which students read for the sake of the positive knowledge to be got out of them, have often not the force in controversy which belongs to the well-laid arguments which can be set out even by an ignorant and narrow-minded controversialist whose very train of thought may spoil him for better work. To put an imaginary instance: philologists all know that Wilhelm v. Humboldt was the master-mind to whom so much of the higher development of their science is due, and the results of his labours have spread far beyond the small circle of the men who have been really able to follow the workings of that wonderful mind. But even those who know but very little of his works, know that they abound in what his well-known commentator delicately calls dualisms, but which the poorest controversialist might, and probably would, bring forward as flagrant and stultifying contradictions, and on the strength of which he could hold Humboldt up to ridicule, as saying a thing in one chapter and categorically denying it in the next, and, in an appeal to the public, it would be very hard to refute him. We have found in England that to bring scientific argument into the exciting atmosphere of religious controversy has not produced desirable results, but of course it may be different in Germany.

We in England are hoping soon to see the third volume of Professor Pott's *Etymological Researches*, in which the Sanskrit roots are worked out into the newer Aryan languages. The early edition of thirty years ago is, of course, now far behind the times, and there is no book to which the student of the higher Aryan etymology can go for a treatment of the subject as a whole. It is to be hoped that

we may soon have, from the man to whom we owe so large a share of the knowledge of philology in its highest departments which enables us to look down from so great a height upon the etymologists of the last century, the completion of his great work in its new and more perfect form.

ITALIAN ANTHROPOLOGY.*

DR. GIUSTINIANO NICOLUCCI is a convincing evidence that the light of one of the most modern of the sciences, if we date from the period of its proper cultivation, has begun to shine in Italy. His learned, systematic work on ethnology, *Delle Razze Umane*, appeared at Naples in 1857, in two vols. 8vo., illustrated with fifty-six plates, many of which are coloured. The motto selected for these volumes, "Ex uno omne genus hominum" (Act. Apost. xvii, 26), evinces the side from which he regards human races,—the same taken with so much candour, and laboriously pursued with so little satisfactory result, by Prichard, whose great work Dr. Nicolucci appears, in some measure, to have set before him as his model. It is an able and very instructive review of the whole family of man, not merely from the physical and craniological points, but historically and linguistically, also, † and, by the diligent research of the author, embodies much information obtained since the days of Prichard. He dedicates the fourth chapter of his second book, the most copious in the work, to the "Famiglia Pelasgica" of his own and the neighbouring countries, which is investigated with great erudition. It was scarcely to be expected that the early anthropologists of Germany and Italy would advance so soon to the *polygenist* doctrine as the writers who employ the English language, whether in Britain or in North

* Di un antico Cranio Fenicio rinvenuto nella Necropoli di Tharros in Sardegna. Memoria del Dottore G. Nicolucci. Torino: 1863.

Memoir on an Ancient Phœnician Cranium, found in the Necropolis of Tharros, in Sardinia.

† The merits of the two methods of study have been lately discussed with great discrimination by a competent writer, Dr. Paul Broca, the neverfailing Secretary of the Société d'Anthropologie. Professor Broca, rich in anatomical knowledge, and well versed in the other branches of anthropological science, has established the vast pre-eminency of physical and physiological research. "La linguistique et l'anthropologie", par M. Broca. Bull. de la Soc. d'Anthrop., iii, 264.

America, as it is to those who use this tongue that we are indebted for the most esteemed and most original books on the subject hitherto written. To craniology, Dr. Nicolucci's medical education may be considered to have inclined him, and we entertain the hope that he will, by more especially devoting himself to the study of the anatomical peculiarities among human races, contribute materially to advance the noble science to which he has dedicated his talents with so much success.

The origin of the present Memoir, which may be regarded as an evidence of the author's learning and persevering research, was the acquisition of a calvarium, discovered amid the ruins of the ancient city of Tharros, or Tharras, in Sardinia, accompanied with an engraved stone stele, or tomb-stone, bearing a brief memorial of the deceased in the Phœnician characters. The politeness of the donor of this Phœnician calvarium is commemorated by the author in these terms: "La squisita gentilezza del mio distinto amico cav. Antonio Garbiglietti." Dr. Garbiglietti, himself an accomplished craniologist, exhibited great discrimination in bestowing this precious relic on his friend, whose efforts have tended to illustrate it in so satisfactory a manner.

In the year 1854, Signor G. Cara received an intimation from the Minister of Public Instruction to make further excavations on the site of the ancient city of Tharros, which had previously afforded a rich harvest of objects of antiquity, many of them in gold and silver, an evidence of the importance of this city, and of the opulence of its inhabitants. In the course of his explorations in the necropolis, he came upon the remains of three bodies, which, at the first opening of the tombs, presented an almost entire state. On exposure these were quickly reduced to powder, so that the three calvaria, without their lower jaws, were the only remains Signor Cara was able to preserve. This is greatly to be regretted, as the presence of the lower maxilla is always of the utmost importance in the estimation of the magnitude, the form, and the expression of a skull. Possibly, nay probably, the immediate application of a little spirit varnish would have preserved these essential portions of the face. The other two of these cranial relics are deposited in the Museum of the Royal University of Cagliari, in Sardinia.

Of the ancient city of Tharros itself nothing can be learned from history, neither its founder, nor the epoch of its origin. Two MSS. of the fifteenth century, found, a few years ago, in the archives of Arborea, are considered to have opened the way to the investigation of

these points. From one or the other of these documents it is collected that traditions remained in Sardinia at the end of the ninth century concerning the foundations and fortunes of Tharros.

A certain Tarra, the wife of Inova, very rich, had a predominant influence among the Phœnicians and Egyptians, who, refusing to live in subjection to the Greeks of Iolao, a city or a district of the island, repaired to the region of Sinis, in the neighbourhood of the Cape of San Marco. There they sustained long contests with the aborigines, who were settled in the adjacent Norachi, but, after seven years, peace was made, and they founded a city, which, in honour of their heroine, they named Tharros. This city grew and flourished by commerce and industry, and became so strong as to maintain its independence of the Greek cities of Iolao and Olbia. The people of Tharros carried on other wars with the inhabitants of Cornus, a city equally Phœnician, whose founder was a king of the same name. They suffered much by the ferocity and treachery of one Numilia, who was among the royal successors of Cornus, but they finally triumphed, when that city was under the rule of Patenore and his son Thaar, and sealed their victory by burning almost the whole of Cornus. Tharros had also to suffer serious injuries from the Vandals; but, in the end, the citizens valorously repulsed them. They were not equally successful against the Saracens, who, in the year 1050, sacked and burned Tharros; not many years after which overthrow the inhabitants abandoned the place, and went to reside in Oristano (probably the ancient Orthoca), which became the capital of the jurisdiction of Arborea. Thus the traditions concerning Tharros, in the necropolis of which city this calvarium was found, agree in affirming that it was built and inhabited by Phœnicians, mixed with Egyptians. But this was not the sole colony those ancient masters of the sea led to the island of Sardinia. Mention is made of others regarded as both before and after this of Tharros, by different writers of antiquity.

In concurrence with what we have already related, the *Ritmo Sardo*, or Sardinian Verses, which contains the traditions current in the island in the seventh and eighth centuries, respecting the derivation of its inhabitants, mentions, before all others, the Phœnicians as having peopled the island with their colonies.

V. 32. *Et vos primum, O Phœnices,—qui invenistis insulam,*

33. *Atque postea conduxistis—gentes et populos,*

34. *Et Sidones et Thyrios—et multos Ægyptios.*

“It is not therefore to be wondered if, in a country which, for so long a time, was colonised and held by Phœnicians, by Phœnico-

Lybians, and Phœnico-Punici, sepulchres should be met with in which sleep the sleep of death those Semites who had changed their abodes, or their descendants. The necropolis in Tharros is, perhaps, the most conspicuous among all those found in the island of Sardinia," (p. 6).

This cemetery is dug in a soft calcareous sandstone, and presents a series of sepulchral chambers of different sizes, of an oblong quadrate or cubic form, which are approached by a narrow passage, mostly occupied by a stair cut in the rock. The opening to them is not so much as five feet in height, and is closed by a large rough stone, upon which at times sculptured figures are seen. The doors of the tombs are always turned to the east, and the bodies they contain equally look towards that quarter. The number of skeletons they contain are one, two, three, and sometimes four; constantly turned to the rising sun, with arms at their sides, or female ornaments and urns of varied forms, some of which present inscriptions in Punic or Phœnician.

The tomb from which the three calvaria were obtained by Sig. Cara had an entrance which opened into a narrow passage, ten feet long, and three feet and a half wide. At the extremity, by means of two steps, the sepulchre was entered where the bodies were laid in a horizontal position. It contained besides, vases of different forms. One of the bodies had on its right side a long sword, and a shorter near its feet. The sepulchre was about ten feet in length and nine in width. Near its entrance was found the inscribed stele, in the form of a little temple, already mentioned. "This inscription places the seal of certainty on the conjecture that these tombs are Phœnician, and contain the mortal remains of persons belonging to that people so celebrated in antiquity" (p. 9).

The little inscribed pillar is about three feet six inches in height, and about eight inches wide in the middle of the inscription. This is in the Phœnician characters of that form used in the latter times, of the tongue and not much anterior to the Christian era. Hence the opinion of Spano, that it cannot be anterior to the second or third century before Christ, and must *appertain to some Phœnician family which had recently established itself in Tharros during Carthaginian times, or to the descendant of some family of remote times, namely, those of the foundation of the city.**

The learned, who have studied to explain the legend on the stele, do not all agree in their versions. SPANO, who was first to give the

* Bull. Arch. Sardo, 1856, p. 38.

interpretation, believed the inscription might be designed to perpetuate the love of a father, named *Chatam*, or *Katam*, towards a daughter who had perhaps died in the flower of her age, called *Mistala*, hence he read it and unfolded it thus :

Mistala beth Chatam ben Jezbale.

TO *Mistala*, daughter of *Chatam*, son of *Jezbale*.

BOURGADE, who made this inscription the subject of his study, does not agree with Spano, and his interpretation of the Phœnician text is as follows :

Indicatio cubiculi

Katami filii

*Jubalis.**

Dr. Nicolucci, not being fully satisfied with either of these two interpretations, requested the opinion of the celebrated Roman Orientalist, the Abbé LANCI, from whom he obtained the following reading and translation, which he justly designates "The most simple and beautiful brief funereal lines :"

Miscean d— Jagtham ben Jubal.

Locus dormitionis Jaghtami, filii Jubalis.

The place of repose of Jaghtam, the son of Jubal.

From all this it is clear that the tomb at Tharros was Phœnician, and equally so that to this people the bodies found in it have belonged, and that the cranium described and figured must be accepted as Phœnician, pure and genuine ;—whether the individual of whom it made part was originally from Canaan, or the descendant of a family from that country ; whether he came from Carthage, or was derived from some other colony on the Atlantic.

This calvarium has belonged to a man of a little beyond sixty years of age. Regarded by the *norma verticulis* it presents a very regular oval ; but the lateral profile does not offer the same regularity, for after an elegant elevation of the forehead, it rises more than usual to the vertex along the sagittal suture, and then descending rapidly, is elongated about the occipital protuberance, which in its turn is not curved gently to terminate at the *foramen magnum*, but passes with an unusual inclination to meet that foramen.

The forehead is broad and high, and the superciliary region corresponding to the frontal sinuses, rather prominent. Then all the frontal region rising as far as the coronal suture dilates moderately at the sides, and by a gentle line goes to meet the superior angles of the

* See his letter to Spano, Bull. Arch. Sardo, an. ii, p. 48.

parietals and the alisphenoids, so that the temporal fossæ are neither very spacious nor deep.

The orbits, situated in a horizontal line, are large and tend more to a round than quadrate form; the nasal bones are very prominent and inserted at an angle of forty-five degrees of inclination to the frontal. The malar bones are neither large nor prominent, but extend somewhat to the sides, so that the zygomatic arch stands a little on the outside of a line which descends perpendicularly from the parietal protuberance. The superior maxillæ are not high nor broad, but well proportioned, with a rounded alveolar border, and the alveoli stand in a vertical direction. All the teeth are wanting, except the two premolars and the two first molars, on the left side. These are much worn by long use, as is commonly the case in men of advanced age. The last grinder of this side is wanting and the alveolus has wholly disappeared; on the opposite side, besides this alveolus, that of the first true molar also is absorbed.

The bones of the palate are flat and not very scabrous; the mastoid processes rounded, but not large; the base of the calvarium is divided into two equal halves by the anterior edge of the occipital foramen, and if a perpendicular line were raised from that edge to the vertex, the whole calvarium is so regularly developed that the two halves which would result would be equal, without any predominance of one over the other.

Dr. Nicolucci has added a copious table of measurements in *millimeters*, according to the elaborate method of Dr. Aitken Meigs. It is highly probable that the reader would find it both preferable and more instructive to have measurements given in English inches and tenths, the standard *selected* by the distinguished craniologist of St. Petersburg, Von Baer; and, also that a simpler series of measurements, verified upon the calvarium itself, should here be substituted.*

- A. Internal capacity in ounces avoirdupois, of dry
Calais sand - - - - - 79 ounces.
- B. Horizontal circumference, taken about an inch above
the fronto-nasal suture, round the most prominent
part of the occiput - - - - - 20 6 inches.
- C. Fronto-occipital arch - - - - - 15' ,,
a. Frontal portion 5·1 in. b. Parietal portion
5·1 in. c. Occipital portion 4 8 in.

* By the great kindness and liberality of the eminent Neapolitan anthropologist, this very rare and interesting craniological relic has now been added to the collection of the writer.

- D. Inter-mastoid arch, taken from the tip of one mastoid process to that of the other - - - 15· inches.
 . Length, or antero-posterior diameter - - - 7·3 ”
- F. Greatest breadth, which is inter-temporal - 5·6 ”
 a. Frontal breadth 4·7 in. b. Parietal breadth 5·1 in. c. Occipital breadth 4 in.
- G. Height, taken from the plane of occipital foramen to the vertex - - - - - 5·6 ”
 a. Frontal height 4·7 in. b. Parietal height 4·8 in. c. Occipital height 4·2 in. All taken from the axis of the auditory foramina
- I. Face, width of, at zygomatic arches - - - 5·3 ”
- J. Proportion of breadth to the length, taken at 100, ·76
- K. Proportion of height to the same, ·76

Hitherto, the only cranium known and described as Phœnician, is the one in the Mortonian collection, so much commemorated, and procured by M. Fresnel in the Necropolis of Ben Djemma, in the Island of Malta. This skull is figured in the “Indigenous Races of the Earth”,* where it is carefully described by Dr. Aitken Meigs, and again in his excellent edition of Morton’s Catalogue of skulls. It is regarded by Dr. Meigs as, in the form of its face *sui generis*, and is dolicho-cephalic and prognathous. Fresnel, in the note with which the skull was accompanied when he sent it to Morton, spoke only doubtfully of its ethnic origin, saying “that it appeared to have belonged to an individual of the same race which occupied the northern coast of Africa and the adjacent isles, in the most ancient times.” No doubt, taken literally, this would be the aboriginal race, or races, of these countries, which were replaced by the Phœnician colonists. But it is even uncertain whether this were the meaning of Fresnel. However this may be, Dr. Niccolucci, without venturing to contradict the authority of Morton, is disposed at least to regard its Phœnician origin as not confirmed, and to believe that this Tharros specimen may and ought to be considered, up to this time, as the only authentic skull which represents the cranial type of that people so celebrated in antiquity.†

* Page 314, Fig. 36.

† M. Beulé, a fortunate explorer of the ruins of Carthage, has not been able to rescue a single skull from the necropolis of that city. He says: “Les os que l’on retire des niches encore fermées sont goulés par humidité, et mous comme une pâte; peu-à-peu le contact de l’air les dessèche, ils deviennent friables, et le doigt les réduit en poudre. C’est pourquoi il m’a été impossible de recueillir un crâne entier, et de rapporter un spécimen de la race Carthaginoise.” *Journ. des Savans*, 1860, p. 508.

The Mortonian cranium differs much from that here described; for whilst the Tharrenian head has all the characters which place it among the most perfect *dolicho-cephali orthognathi*, the Maltese, on the contrary, is peculiar, and is decidedly *prognathous*. Dr. Nicolucci says, that, if there be any skull with which this cranium of Morton's may be compared, it is that of the indigenous inhabitants of the Atlantic Coast, the descendants of the Lybians of antiquity, who spread from the confines of Egypt as far as the Fortunate Isles, and from the shores of the Mediterranean to the Sahara. In these, also, he affirms the cranium is narrow and long, the jaws prominent, but the teeth so placed in the alveoli, that, as in the Maltese skull, they approach the vertical direction. He adds, the same conformation is observable likewise in the crania found in the burial places of the ancient Guanches, inhabitants of the Canary Islands. By such comparisons it is easy to infer, that the skull, believed by Morton to have belonged to an individual of the Phœnician race, ought only to be regarded as purely Lybian, its form being similar both to that of the heads of the Guanches of the Lybian stock, and of the Berber tribe of the present day, the legitimate descendants of the aborigines of Northern Africa.*

Dr. Nicolucci declines to discuss the question, whether the Lybians of antiquity might have occupied the Island of Malta before any other people. Still, since the Phœnicians colonised and ruled over this island for a long time, he thinks it not improbable that they might also gather colonies there from the neighbouring African coast, where their power was so extensive; and that precisely to one of these, or their descendants, this head, which Morton believed to belong to the Phœnician race, may be referred.

Finally, the author speaks of the resemblance of this calvarium from Tharros to the skulls of Arabs and of Jews.† He affirms that it is

* The Guanches have usually been regarded as allied to the Lybian tribes. It would probably be very difficult to decide this point craniologically, from a want of sufficient materials even, were there not other causes. The writer, from an examination of about thirty skulls of Guanches from the sepulchral caves of Teneriffe, is disposed to look upon them as of a peculiar type, it may be distinct from all others. As far as his observation goes, they do not present any remarkable similarity to the Mortonian skull from Ben Djemma. Dr. Garbiglietti showed the error of the strange opinion, that the Guanches were a race of giants. (Nicolucci, *Razze Umane*, i, 295.) And Dr. Hodgkin has gone much farther. He has collected evidence to prove that they were of very moderate stature, even of less than the medium stature of Europeans; in fact, diminutive. (*Ethnological Journal*, 1848, i, 167, "On the Ancient Inhabitants of the Canary Islands.")

† The prominent acquiline nose, raised on elevated nasal processes of the superior maxillary in this Tharros calvarium, are unquestionable approximations to Jewish features.

on one model that the Phœnician skull and those of Arabs and Jews are formed, and that from this alone may be determined the identity of the race of these three peoples—an additional argument, he adds, to so many possessed by ethnological science, respecting the common origin of all the branches of the family of Shem.

We have thus given, as often as possible in the words of the author, a full analysis of a Memoir of the greatest interest, which discusses, in a very able and complete manner, the origin of this rare calvarium, and satisfactorily proves it to appertain to the Phœnician race. This learned dissertation will exhibit to English readers the readiness and preparedness of its author to discuss the most intricate problems of ethnology and craniology with judgment and candour.

The three carefully executed lithographic Tables, which give a profile, a front and a vertical view of the calvarium, of *full size*, are of great value in acquiring a due appreciation of the peculiar forms of this rare relic.

In conclusion, it is scarcely necessary to add anything further, unless a remark or two may be permitted which would bear on the value of craniological evidence in its present nascent state. Whether our knowledge of the ethnic conformation of the human skull in different races, especially those introduced into this recondite discussion, is yet so complete as to enable us to come to precise and definite conclusions may admit of further consideration, at least. And, particularly, whether the materials up to this time at our disposal for deciding the question of the *typical* form of the Phœnician cranium are sufficient for such purpose, may be deserving of some doubt. Whether the crania of what are usually called the Semitic families, of Jews, Arabs, etc., have been hitherto adequately studied and compared for valid inferences to be deduced as to their differences and resemblances, is not yet certain; nor, indeed, whether the different branches of the Phœnician family may not yet be found to present appreciable cranial diversities. In the very desirable and still requisite advancement of craniological research, there is room for many laborious and cautious observers, and there are few who have turned their attention to such subjects better able than our author, from his medical instruction, his varied knowledge, and his acuteness, to contribute to the building up of a more substantial and permanent scientific structure. We hope often to meet with him again in these investigations, and are persuaded it always will be with substantial additions to our knowledge.

J. B. D.

ON THE SCYTHO-CIMMERIAN ORIGIN OF THE
LANGUE ROMANE.*

By RICHARD STEPHEN CHARNOCK, F.S.A., F.R.G.S., F.A.S.L.

At a meeting of the Royal Society of Literature of Great Britain, held in June last, a paper in the French language was read by M. le Duc du Roussillon on the Scytho-Cimmerian origin of the Langue Romane, which paper has since been printed among the transactions of the Society. As the subject is ethnographical, as well as philological, I will take the liberty of making a few remarks upon the paper.

Let us see what the author says at the first setting out:—

“J’ai l’honneur de communiquer à l’Académie une découverte qui pourra servir à faire connaître toute l’utilité que l’on peut retirer, au point de vue des origines, d’un élément fort négligé jusqu’ici dans les études archéologiques. Cet élément n’est autre que la nomenclature des noms de lieux d’une contrée, habités ou non, de montagne, vallon, cours d’eau, promontoire, étang, etc., etc. Il est logique d’admettre, que chaque association humaine qui s’est fixée la première sur un sol, a dû déterminer et arrêter toutes les désignations de cette nature nécessaires à ses fins, soit qu’elle apportât avec elle un langage tout fait ou bien que la formation de son idiome soit postérieure à l’époque de son établissement. Il est évident aussi que ces désignations ont été prises dans son langage même. Certes, si les races ne s’étaient pas mêlées, rien ne serait plus facile que la classification des éléments que fournirait la plus superficielle investigation. Malheureusement, il n’en serait pas ainsi pour les pays anciennement habités, à ce que l’on suppose. Ici, la conquête aurait successivement déposé sur le même sol, comme les couches multiples d’un limon différent de nature, vingt peuples dont de langage ne se ressemble point. Et en admettant que chaque nouvelle conquête ait amené une nouvelle modification, dans le sens du dernier idiome introduit, comment est-il possible de se reconnaître au milieu d’une telle confusion? C’est là du moins l’opinion admise. C’est contre cette opinion que j’aurai à lutter lorsque j’avancerai, par exemple, que sur un sol qui m’est très-familier, j’en conviens, les deux versants des extrêmes Pyrénées-Orientales, entre le cours de l’Aude, de la Sègre et la Méditerranée, à peu près, je puis démontrer que la plus grande partie des noms de lieu est tirée de la langue romane. Elle n’en sera que plus rebelle si j’ose affirmer que deux mille noms de lieu environ, relevés sur les cartes de la *Kersonèse taurique*, bords du *Palus Mæotis* et du *Pont Euzin*, présentent le même caractère, d’où résulterait que l’idiome vulgaire de la Gaule

* Mémoire sur l’origine Scytho-Cimmérienne de la langue Romane. Par M. le duc du Roussillon. Première partie, 1863. J. E. Taylor, Little Queen Street, London.

celtique et nord de l'Ibérie aurait été introduit dans ces deux dernières contrées par une émigration appartenant à des peuples déjà établis sur le sol de la péninsule cimmérienne et ses environs."

M. du Roussillon tells us he is far from ignoring the quicksands of etymology, in which nevertheless he is continually sinking.

"Il est d'abord un premier principe à poser, démontrer et établir assez solidement pour qu'il résiste à toute objection, car il forme la base sur laquelle repose principalement mon travail. Ce principe c'est: *que les noms de lieu monosyllabiques ne sont pas sujets, généralement parlant, à produire des erreurs d'étymologie, étant pris dans les limites assez étroites ci-dessus indiquées, c'est-à-dire l'Aude, la Sègre et la mer.* Malheureusement, ils ne sont pas nombreux, et jusqu'à présent je n'en ai recueilli que 126."

Then follows a list of monosyllabic names of habitable places on both sides of the Eastern Pyrenees.* Of these, eighteen are untranslated, about half-a-dozen are rendered reasonably enough, whilst the etymology of the remainder is wholly misconceived. Witness the following:—*Ax*, torche; *Bel*, voile; *Bols*, vols; *Bot*, vœu; *Bren*, petit pain; *Cerche*, recherche; *Corb*, corbeau; *Cors*, cœurs; *Cuel*, recolte; *En*, vase à liquide; *Er*, aire; *Fau* and *Fay*, je fais; *Fals*, faux; *Ger*, jarre; *Gos*, chien; *Ix*, il sort; *Joch*, jeu; *Llar*, du lard; *Nils*, miaulements; *Oix*, il sort; *Os*, as; *Paü*, paix; *Pao*, paon; *Ples*, plaisirs; *Pals*, batons; *Quart*, quart; *Scarp*, prix fait; *Sort*, le sort; *Tech*, il tisse; *Tost*, tôt; *Vos*, vous; *Lli* or *Lli*, † lin. It may be true, as M. du Roussillon asserts, that monosyllabic names are less liable to corruption than polysyllabic names, but does it follow that all names which are now found as monosyllabic were originally so? I am inclined to think not, and that we can seldom judge of a name as it stands, the more especially if it translates nonsense; and that the only scientific way is to endeavour to discover the earliest orthography of the name. Let us take such a name as Autun. Nothing is easier than to assert that *au* means 'to the,' and *tun* 'an enclosure'; but if, upon research, we find that the place was originally called *Augustodunum*, we can have little hesitation in concluding that Autun has been corrupted down from *Augustodunum*. ‡ Leclerc made a great mess of it when he derived names *direct* from the Celtic, without considering the earliest and intermediate orthographies of names. § Among other

* Sur les deux versants des Pyrénées-Orientales extrêmes.

† M. du Roussillon says in a note, *la gly* peut être l'abréviation de *l'aygual*, "masse d'eau". It is rather the Celtic *li*, found in so many names, and signifying "water".

‡ Archéol. Celt. Rom. Par J. B. Leclerc. Paris: 1843.

§ Bescherelle has, I am sorry to say, followed in the footsteps of Leclerc.

trash, witness the following : *Passy*, pic à l'étang (*πέ α σϑ*) ; *Gentilly*, terre du château à l'Hy (*γέ εν τί λϑ*) ; *Choisy*, champ à l'étang (*σα αυ σϑ*). After laying it down that, notwithstanding foreign conquests and the introduction of Christianity, denominations have generally remained the same, our author has the following on the influence of the Latin language upon local names :—

“Ce n'est pas à l'influence de la langue latine que l'on peut attribuer les désignations primitives, puisque plus d'un demi-siècle avant la conquête romaine cette contrée était couverte de nombreuses tribus d'origine diverse, mais la plupart *gauloises*. Pour s'en convaincre, il suffit de consulter Polybe, Tite-Live et Pline. A cette race appartenaient les *Sardones* d'après le premier auteur, et les *Ilerdenses* d'après le troisième, quoique les deux tribus fussent établies sur les deux versants opposés des Pyrénées. Cela s'explique par un passage de Diodore de Sicile, où il est dit qu'après de longues guerres, *Ibères* et *Celtes* s'accordèrent mutuellement le droit de fonder des établissements sur chacun de leurs territoires respectifs que divisait la ligne des Pyrénées. Le poète Silius Italicus dit aussi : '*Pyrene celsa nimbosi verticis arce, divisos Celtis longè prospectat Iberos.*' L'autorité de Polybe établit le même fait.

“(Polybe) . . . Il ajoute même expressément : 'que les deux villes d'Illiberis et Ruscino étaient habitées par les Gaulois.'

“Pline dit textuellement : '*Narbonensis provincia . . . agrorum cultu . . . opum . . . nulli postferenda, brevitque Italia verius quam provincia.*' Puisque la Gaule narbonnaise était l'égale de l'Italie en richesse et en culture, c'est probablement qu'elle l'était aussi en population.”

It may be observed with reference to the influence of the Latin language, that more than two-thirds of the words contained in the Spanish, Portuguese, the Romance languages, and the French, are of Latin origin, and that the Celtic dialects contain thousands of words derived directly or indirectly from the same source. No doubt, generally speaking, the Romans merely Latinised local names as they found them, but Europe, notwithstanding, contains thousands of names of purely Latin origin. Instance Autun (before-mentioned), Faye, Le Faou, and Faouët, in France, from *fagus*, a beech-tree ; Badajoz, Zaragoza, and Trujillo, in Spain, respectively from *Pax Augusta*, *Cesarea Augusta*, and *Turris Julia* ; and such names as Aix, of which there are seven in France, Sardinia, and Germany ; and even Dax itself, all derived from *aquis*. On the antiquity of the *Langue Romane*, we are informed, *teste Strabo*, that the Iberians made use of two words still found in the Catalan : “They called buckers *pels*, and rabbits *liberides* ; and with them the rabbit was only a little hare, now *llebrete*, derived from *llebre*.” No doubt ; they

got the former from the *L. pellis*, and the latter from *lepus, leporis*. Of what force then is the remark?

In his endeavour to account for certain monosyllabic names, our author says:—

“Le nom de *Tor* se trouve porté par divers établissements situés sur la côte maritime aussi bien que sur les hauteurs des Pyrénées. Mais, ni dans la langue vulgaire, ni dans les dictionnaires, il n'est possible de trouver sa signification, autant qu'on le prononce avec un *r* seulement, et même avec douceur. C'est une acception qui a disparu tout à fait. Deux chartes principalement, l'une de l'an 1153 de notre ère, l'autre de l'an 1048, démontrent que le mot *tor* signifie, emplacement bâti, ou à bâtir.”

Whatever may be the meaning of the word in the charters recited, there cannot be a doubt that the vocable *tor* in most local names is derived from the Latin *turris*, by change of radical, from the Hebrew צור, *tsur*, whence *Tsor* or *Sor*, the original name of *Tyre* (Τυρος). With regard to the word *ker*, we are informed that in the cartularies are found places named *Keros Albos*, *Ker Angle*, *Ker Monnos*, *Ker Ononino*, &c., &c.; that in the *délimitations de territoire*, the lines of rocks which form the natural divisions are called sometimes *rupes*, and sometimes *keros*, and our author thinks these demonstrations sufficient to establish the earliest signification of the vocables *tor* and *ker*. There is nothing new in all this; the vocable *ker*, which forms part of at least one thousand names in Europe, and of which at least five hundred may be discovered in Bretagne alone, is found variously written in all the Celtic dialects. Thus the Welsh has *caer*, a wall or mound for defence, the walls of a city, a castle or fortress, a walled or fortified town or city; the British *caer*, walls, and a city girt with walls; the Bas-Breton *ker*, *kear*, *kaër*, a town; the Cornish *caer*, a town, a castle, and *car*, a rock; the Gaelic, *cdrr*, a rock; Sw., *skär*, a rock; Dan., *skier*, *skier*, rocks, cliffs. In the Hebrew, קיר, *kir*, or קר, *kir*, is a wall, i.e., the wall of a city, a place fortified with a wall, a fortress; proper name of a fortified city on the borders of the land of Moab, now Kerrek. Hence Kir-heres, Kir-heresh, the wall of bricks, or the brick-fortress; Kir-jath, &c.

The author of the paper adds: “Par ces deux mots (*tor* and *ker*) j'ai pris l'extrémité du fil conducteur qui m'a dirigé vers le pays anciennement connu sous le nom de *Kersonèse Torique*, et habité par une tribu scythe: les *Tauri*, d'après Hérodote; sur l'autorité duquel on admet que les *Cimmériens* possédaient avant eux cette péninsule, maintenant la *Crimée*.”

On this I will simply remark, that had M. du Roussillon only

consulted his Lexicon, he would have seen that the proper name, *Χερσονησος*, or *Χερνησος*, which in the Attic dialect is *Χερρονησος*, means a peninsula, and is derived from *χερρος*, *χερσος*, a continent, land, *νησος*, an island. The author of the paper seems to ignore altogether the fact that the ancients gave the appellation *Χερσονησος* to very many peninsulas, among the most celebrated of which were the Peloponnesus; the Thracian, at the south of Thrace; the Taurica, now the Crimea; the Cimbrica, now Jutland; and the Aurea, in India, beyond the Ganges. I may here remark that the word *ker* in Turkish signifies an uncultivated plain, but whether it always has that signification in local names is doubtful.

“Ainsi, la nomenclature des cours d'eau qui dépasse le nombre de 100, offre des significations qui tout répondent, à leur forme, à leur nature, à leurs défauts ou qualités, si on les traduit en langue romaine. Par exemple, une rivière qui porte l'ancien nom de la Crimée, le *Kerso*, que le cartographe Handtke a écrit [very properly too] *Karassu*, se compose de deux branches, l'une droite et l'autre tortueuse; cette dernière est appelée *Kutschukk*, mot qui se retrouve sur la carte, toutes les fois qu'il s'agit d'une ligne coudée. Or *Coutsout* signifie *coudé*, en catalan. L'autre porte le nom de *Béioug*, toujours donné aux lignes droites, et se compose de deux mots: *bé*, qui signifie *bien*, et *jouke*, qui signifie il *perche* ou se *tient droit*, en parlant de volatiles de basse cour.” It will be scarcely necessary to refute the above, when any one only superficially acquainted with the Turkish language must know that *kúchuk* means little, and *bujúk* great; terms more applicable to the branches of a river, or even to a river itself, than those given by our author. These words are frequently found in local names, as *Kúchuk koi*, the little village; and *Buyukdere*, the great valley, and *Buyuk Liman*, the great harbour, both on the Bosphorus. Other comparisons are given in this part of the paper, but as they are not, as I conceive, more reasonable than the above, I shall omit them, leaving the reader to compare them if he should think it worth while.

After stating, amongst other things, that the maps of the Crimea and parts of the coasts of the Sea of Azof and the Black Sea, by Handtke and others, give two thousand local names, our author says:—

“Il consiste à ne considérer que la valeur phonétique de chaque nom de lieu sans faire attention à l'orthographe, dans sa transcription, qui a lieu d'après les principes de l'orthographe romane et de la valeur idéographique qu'il offre dans cet idiome. A côté de cette

transcription j'ai porté la traduction en Français. Ici se présente tout naturellement la question suivante : est-il possible de prouver que les diverses combinaisons phonétiques de ces noms de lieu, supposés *scytho-cimmériens* d'origine, ont possédé lors de leur détermination une valeur idéologique tout à fait, ou du moins quasi-identique avec celle que je leur attribue dans la langue catalane ? Cette question trouvera sa réponse dans les démonstrations que contiendra la suite de mon mémoire. J'ai choisi cet idiome comme moyen d'interprétation, parce qu'il me paraît avoir conservé ses acceptions primitives beaucoup mieux que les dialectes provençal, languedocien, limousin ou autres.

"Je classe par mots à une, deux, trois syllabes et ainsi de suite. Je puis déjà mettre sous les yeux de mes lecteurs environ 700 noms contenus dans ces trois premières catégories, choisis presque tous dans les limites de la presque île *cimmérienne*. Je n'ai ajouté, de la carte à orthographe Française d'Andriveau Goujon, que des monosyllabes en fort petit nombre et des noms de rivière, le tout extrait des côtes de la Mer d'Azoff et de la Mer-Noire entre la Crimée et les bouches du Danube, que je n'ai pas dépassées.

"Il convient de remarquer d'abord que toute cette région n'offre qu'un nombre de lieux monosyllabiques bien restreint comparativement à celle des Pyrénées. Il ne s'élève qu'à trente environ ; lorsque nous avons d'autre part un chiffre presque quintuple, comment l'expliquer ?

"Je conjecture que lorsque les *Scytho-Cimmériens* émigrèrent vers l'Europe occidentale, ils vivaient encore à l'état nomade sur la péninsule et aux environs ; se servant d'un langage encore très-imparfait composé principalement de monosyllabes. Les émigrants, parvenus dans la région des Pyrénées, durent s'éparpiller sur le sol, choisir leurs lieux de résidence par groupes, s'y fixer et les dénommer, à une époque antérieure à celle où leurs compatriotes restés sur la sol de l'Europe Orientale ou de l'Asie firent plus tard comme eux. Alors, leur langage, qui dans un long intervalle s'était développé, comprenait déjà tous les polysyllabiques qui furent attribuées à leurs établissements, de fondation moins ancienne que ceux de l'Europe occidentale. Néanmoins, les deux peuples, maintenant divisés, développèrent leur idiome parallèlement, et suivant des combinaisons idéologiques et idéographiques à peu près semblables, parce que le sens de leurs radicaux primitifs était déjà déterminé lorsqu'ils se séparèrent.

"Ceci est fort hypothétique, j'en conviens, et ne peut être offert qu'à titre de conjecture tendant à expliquer un fait qui paraît anormal à première vue.

"En comparant entre elles deux listes de monosyllabiques si inégales en nombre, l'une de la région *cimmérienne*, l'autre des *Pyrénées*, on constatera que quelques-uns de ces noms de lieu se trouvent en même temps sur les deux nomenclatures. Ce sont *Ker, Cort, Liès, Cos, Boix, Atx* ; mots qui en catalan signifient *roc, cour, diligent, corps, buis, torche*. Nous trouverons presque tous les autres dans les combinaisons polysyllabiques. Ainsi la nomenclature des noms de lieu à deux syllabes situés dans les limites de la péninsule, qui s'élève à plus

de 300, contient 25 autres monosyllabiques des Pyrénées plusieurs fois combinés dans ces 300 mots. La nomenclature des noms de lieu à trois syllabes, qui dépasse le chiffre de 350, contient 36 monosyllabiques de la même liste des Pyrénées diverses fois et diversement combinés. Ainsi, sur un total en nombres ronds de 700 noms de lieu cimmériens, à une, deux et trois syllabes, nous trouverions 60 monosyllabiques Pyrénéens, c'est-à-dire la moitié environ de ceux que nous connaissons ; cela constitue une proportion entre le 11^e et le 12^e. Elle me paraît suffisante pour établir une des bases de mon opinion. Il ne faut pas perdre de vue qu'il me reste encore à opérer sur les mots à 4 syllabes et au-dessus, au nombre d'environ 1300 ; je m'en occuperai avec d'autres questions dans la 2^e partie de mon mémoire. Comme quelques-uns constituent, pour ainsi dire, des phrases entières, tels que celui-ci par exemple, *ashi-bal-ak-bak-ak*, que je traduis : 'ici le chemin conduit au coteau élevé opposé au soleil,' je ne m'en occupe pas encore."

Does M. du Roussillon mean to assert that because in Catalan the vocables *ker*, *cort*, *llès*, *cos*, *boix*, *aix*, signify *roc*, *court*, *diligent*, *corps*, *buis*, *torche*, that therefore places so named must have a similar meaning? Is it not possible to give such names a more reasonable meaning? May not *Lles* be the Gaelic and Irish *lios*, a court, palace, house, fortified place or castle ; the Welsh *llys*, a court ; the Cornish *llys*, a manor-house? Again, *cos*, in one Celtic dialect is a wood ; the name *Boix* may be from *bois*, a wood ; whilst *Aix* is more probably derived from the Latin *aguis*.

We now come to the most important part of the paper, containing seven hundred local and fluvial names in the Crimea and on the borders of the Black Sea, the Sea of Azof, the Danube and its vicinity, found in the charts of Handtke and Andriveau Goujon. The names of places in Handtke's map are respectively classed under monosyllabic, dissyllabic, and trisyllabic names, and are given in tables with the equivalents in Romance, and the meaning in French.* After a careful comparison of these names with the Turkish, Tatar, and Slavonic languages, I cannot have the least hesitation in asserting that not one of them has any connexion with the Romance languages, and that most of them are, as any one would naturally imagine, of Turkish or Tatar origin. Thus *koi*, in Turkish, is a village ; nevertheless, according to the author of the paper, *Taschkoi* signifies *taxe au col* ; *Tsalblakoi*, *sauve-le sur le col* ; *Duwan-koi*, *chargent à dos* ; *Hadshikoi*, *ici transport à dos* ; *Otarrkoi*, *y porte*

* The names of capes, coasts, rivers, mountains, ponds, etc., from both maps are arranged without reference to the number of syllables, which in some reach to six.

la terre à dos; *Aramkoï*, fagots sur le col; *Salankoï*, compagnie qui sale; *Tontschikoï*, pied de chou; *Mursakoï*, gazon jusqu'à col; *Dermenkoï*, dorment par troupe; *Jenikoï*, y attèle des hommes; *Tatarkoï*, teter sur le col; *Kutschukkoï*, défilé tortueux; *Koïhassann*, col ensanglante; *Derekoï*, dernier défilé; *Kadikoï*, chef de troupe; whereas the six latter names really mean in Turkish nothing more than 'new village', 'Tatar village', 'little village', 'village of Hassan', 'village in the valley', 'village of the Kadi'. Again, the Turkish *ak* is white, and *kara* is black (also a continent); thus, *Ak su* signifies the white water; *Ak-dengiz*, the white sea, *i.e.*, the Mediterranean; *Ak-kerman*, the white fortress or town; *Kara-dengiz*, the black sea; *Karachai*, the black river. Let us see how our author deals with names, as I say, compounded of these vocables. *Akkkaja*, is rendered à la maison; *Akkschora*, au sable; *Akkbasch*, au bas; *Akkkhuja*, au testicule; *Akkburunn* (properly white cape), au rocher qui brille; *Karagarr*, charger; *Karagatsch*, chargés; *Karabai*, usage bas; *Karalarr*, usage longue; *Karagoss*, pesant; *Karatschai* (*i.e.*, *Karachai*), ail tresse; *aradscha*, traîner ou (charrier); *Tschat kara*, se compare à toi; *Karamusch*,* face flasque; *Karamysch*, face à moitié; *Kyschkara*, qui fait place; *Kotschkara*, couche de face. *Burun* in Turkish is a cape; as *Akburun*, the white cape; *Filburun*, the elephant cape, on the Asiatic side of the Bosphorus; but M. du Roussillon renders *boroun*, bourgeon; *Akkburunn*, un roche qui brille; *Burundukk*, je porte des bourgeons; *Kilburunn*, pousse de bourgeons, and *Kurtyriburunn*, caverne d'éruptions volcaniques. *Dere* is rendered derrière, whereas *dereh* in Turkish signifies a valley; as *Buykdere*, the great valley, whence Baron *Grosthall* had his title. *Ardussu* is said to mean, entraîne avec lui; *Ssubasch*, baisse; *Sojukkssu*, sous le confluent; *Bojukkkarassu*, droit rocailleux; and *Kutschukkkarassu*, condé rocailleux; whereas every Turkish scholar must know that the former means the Great, and the latter the Little, *Kara Su*, or black water (*sû*, water). The *Boghass* is rendered, plein de plantes marécageuses; but the Turkish *boghaz* is a strait. The Bosphorus is called in Turkish *Dengiz Bôghâzi*. *Gûl* in Turkish is a lake; whereas, the water-course called *Tsaregol* is rendered, sable au gué; *Baïgull*, cri; and *Aïkugul*, au cocu. Again, *Jailadagh* is translated, lieu glacial; *Pakalldagh*, lieu où le pain manque; and *Karadagh*, amas de rochers; but the termination of these names, *dagh* (for *tâgh*), signifie a mountain; and *Karadâgh*, means black mountain. *Ssarai*, is rendered, sommet élevé, and *Bielosarai*, dirige le sable; whereas the Turkish word *sarai* is a

* Why not derive it from *Scaramouch* ?

palace (*seraglio*); and *Bielosarai* denotes the white palace; hence *Bielogorod*, *Ak-Kerman*, the white town; *Belgrade* on the Danube, and, among other names, the Russian lake *Biélo Ozéro*. *Kisilbaï* is rendered, *je pousse à danser*, (!!!) nevertheless, *kizil*, in Turkish, means red: as *Kisil Irmak*, the red river, which falls into the Black Sea near Sinope. *Fanar* is translated, *travailler vite*, or *font des filets*; but *fanar*, in Turkish, means a lantern, and the word is applied to a light-house. Any one who has been in Constantinople will remember the quarter called *Fanar*, where the Patriarch and principal Greek families reside. There is a place called *Fanaraki*, *i.e.*, *Fanar Koi*, the "village of the lighthouse," at the extreme point of the European side of the Bosphorus, whilst on the opposite shore is *Fanaraki*, in Asia, so called from another light-house, which points out to navigators the mouth of the Bosphorus. Again *Muschai* is translated *moustique*, whereas *chai* signifies, in Turkish, a river, and *Muschai* more probably signifies ice river, just as *Mustag*, properly *Múztágh*, means ice mountain. Ignoring altogether the fact, that the vocable *cern*, *zern*, *tzern*, *tchern*, in the Slavonic languages signifies black, and that this vocable is found in very many local names, as *Czernawoda*, the black water; *Czerna*, a river of Austria, which falls into the Danube; *Czernowitz* or *Tchernowitz*, a town of Austrian Galicia; *Czernigov* or *Tchernigov*, a town and government of Russia; *Tchernoyarsk*, a town of Russia; and *Tchernagora*, the Slavic name of Montenegro, which the Turks call *Karaddgh*; M. du Roussillon renders *Tchernaja*, on rétrécit la; and *Inkerman* is translated *commande dans le rocher*; whereas the name means, the town of caverns (*in-kerman*), just as *Ak-kerman* means the white city. *Alataï* is rendered, *à la coupe*; whereas in Tatar it is *Alatau*, most probably from *al-tágh*, high mountain; *Staryi Krimm* is translated, *que le crin reste*, or *rester en Crimée*, nevertheless *Staryi Krimm* or *Krim Staroi* means Old Crim, from the Slavonic *star*, old (whence *Stargard*, ancient city.) The Turks and Tatars also call it *Eski Krim*, of the same meaning in Turkish.* Our author derives *Perocop* from *pera cop*, *pierre à coup*. It is rather a Slavonic name, denoting a cut made through a place, and is applicable to the ditch dug here in remote ages across the neck of land at the entrance to the Crimea, for the security of the place.† *Esskenderr* is rendered, *amorcent de l'aire*, but *Iskender* is the Turkish form of Alexander, whence *Iskenderoun*,

* *Eski* is rendered "je mets d'appat" and "jamorce dehors".

† Pallas derives the name from a Russian word signifying "the entrenchment of the isthmus".

Ascanderoon, or *Scanderoon*, i.e. *Alexandretta*, in Syria, and *Isken-dériyeh*, i.e. *Alexandria*, in Egypt. Finally, the river *Danube* is rendered *donne mari*; the *Don*, *femme*; and the *Dnieper* ou *Borysthene*, *perd le nied*, ou *tient dans ses bords*; whereas *don* is a Scytho-Celtic word found in the names of hundreds of European rivers, signifying water, whence the *Donau* or *Danube*, *Tunbridge* or *Tonbridge*; the rivers called *Don* in Great Britain; *Tunstall*, *Tunstead*, etc.; while *Dnieper* is from *don-iever*, the upper river, in contradistinction to *Dniester* or *Nigster*, the lower river (*don-iester*).

The drollest part of the pamphlet is the conclusion, in which are given the Gaulish and German proper names, mentioned in *Cæsar's Commentaries*, amounting to sixty-seven, "avec leur signification approximative en Roman et traduction française en regard." As a specimen of these, with their supposed significations, let us select the following:—Ariovist, "vu à la rivière," (*a riou bist*); Acco, "cela," (*aco*); Critognatus, "j'appelle les enfants," (*grito nats*); Adcantannus, "je chante les années," (*al cant'any*); Bellovesus, "tu baisses la toison," (*bello besec*); Beduognatus, "porte bien les enfants," (*be dou nats*); Cassivellaunus, "je cherche des noisettes," (*caci bellanas*); Camulogenus, "chien qui chasse le public," (*ca mou lo gens*); Catamanteles, "abaisse les manteaux," (*cata mantels*); Cativulcus, "chat tu y tombes," (*cat y bouiques*); Cavarinus, "travaille les raisins," (*caba rims*); Cingetorix, "riche sans un seul jeton," (*sin jeto ric*); Convictolitanis, "j'invite les biches," (*convido les doynes*); Corbeus, "le bruit court," (*cort beus*); Emporedorix, "empereur riche," (*emperado ric*); Galba, "voici les réjouissances," (*gale ba*); Gobanitio, "nettoie la caverne," (*coba neteje*); Iccius, "sortez," (*ixius*); Induciomarus, "conseille les mères," (*induciz maras*); Liscus, "tu glisses," (*llisques*); Litavicus, "que tu vive alité," (*llitat bisques*); Mandubratius, "je dirige les échanges," (*mandou baratas*); Moritasgus, "impôts sur les morts," (*mori tasques*); Ollovoico, "vive la marmite," (*oulla visque*); Piso, "voies urinaires," (*piso*); Sigovesus, "tu répands le blé sous ta faucille," (*cega bessas*); Taximagulus, "je taxe mes bouches à nourrir," (*taxi mas bouious*); Teutomatus, "tu brises tout," (*tout o matas*); Vercingetorix, "vrai riche sans un jeton," (*ber ein jeto ric*); Vergasillaunus, "bâtons à lancer," (*bergas a llans*); Viridovix, "je quitte le vice," (*biri dou bici*); Viridomarus, "je quitte les mers," (*biri dou mars*); Vocio, "félonie," (*batusia*).

The principal difficulties we have to encounter in the endeavour to translate old Gaulish and old German proper names are, 1st, that of

ascertaining their original orthography before they became Latinised. 2ndly, The necessity of a thorough acquaintance with the old German and Celtic languages. Having some acquaintance with these languages, I will endeavour to account for a few of the above names, premising that all those commencing with *cat* and *cass*, are from the Celtic *cat*, war; and those compounded of *ver* from *fear*, a man, a hero. Ariovist means "strong or intrepid in battle," (*ar-vist*); Bellovesus, a "war leader," (*O.G.-fel-wiso*); Sigovesus, a "leader of victory," (*sieg-wisa*); Litavicus, a "strenuous warrior," (*leut-wig*); Teutomatus, a "good, virtuous, or excellent man," (*teut-math*); Ollovido (the modern Helwig), "very strenuous, valiant, or strong," (*O.G.-oll-wig*); Galba, "vigorous, strong, brawny," (Gael, *galba, galbha*); Eporedorix, "chief of the horse-cars, or chariots," (*eb-rhed-riz*); Camulogenus would seem to be compounded of the British name *Camulus*; Induciomarus is doubtless the same as *Inguio-merus*, signifying "celebrated youth," (*ing-mer*); whilst *Mandubratius* is probably of the same meaning as *Vergubretus*, a "judge," literally a "man for judgment," (*feur-gu-breith*).

NOTES ON SCALPING.

By RICHARD F. BURTON.

It is generally, but falsely, supposed that only Americans scalp; the practice is Asiatic, European, and African. The underlying idea is the natural wish to preserve a memorial of the hated foeman done to death, and at the same time to dishonour his foul remains. Fashion and tradition regulate the portion of the human frame preferred: the most popular is doubtless that which, beginning, we are told, with David, has descended through the Jews to the eastern Christians and the Moslems of the present day.

Concerning Asiatic scalping we read as follows in Herodotus, (*Melpomene*, iv., 64, Laurent's translation). "Of the first enemy a Scythian sends down, he quaffs the blood; he carries the heads of all that he has slain in battle to the king; for when he has brought a head, he is entitled to a share of the booty that may be taken: not otherwise. To skin the head, he makes a circular incision from ear

to ear, and then, laying hold of the crown, shakes out the skull. After scraping off the flesh with an ox's rib, he rumples it between his hands; and having thus softened the skin, makes use of it as a napkin; he appends it to the bridle of the horse he rides, and prides himself on this: for the Scythian that has most of these skin napkins is adjudged the best man," etc. etc. "They also use the entire skin as horse cloths, also the skulls for drinking cups."

The Abbé Em. Domenech (*Seven Years Residence in the Great Deserts of North America*, chapt. 39), quotes the "decalvare" of the ancient Germans, the "capillos et cutem detrahere" of the code of the Visigoths, and the annals of Fluor, to prove that the Anglo-Saxons and the French still scalped about A.D. 879.

And as the modern American practice is traceable to Europe and Asia, so it may be found in Africa, where ought of ferocity is rarely wanting. "In a short time after our return," says Mr. Duncan, (*Travels in Western Africa in 1845 and 1846*), "the Apademey regiment passed, on their return, in single file, each leading in a string a young male or female slave, carrying also the dried scalp of one man supposed to have been killed in the attack. On such occasions, when a person is killed in battle, the skin is taken from the head and kept as a trophy. (It must not be supposed that the female warriors kill according to the number of scalps presented; the scalps are the accumulation of many years. If six or seven men are killed during one year's war, it is deemed a great thing; one party always run away in these slave-hunts, but when armies meet the slaughter is great). I have seen 700 scalps pass in this manner."

Scalp-taking in America is a solemn rite. In the good old times men scrupulously awaited the wounded man's death before they "raised his hair;" in the laxity of modern days, however, this humane custom is too often disregarded. Properly speaking, the trophy should be taken after fair fight: this also is now neglected. When the Indian sees his enemy fall, he draws his scalp-knife—the modern is of iron, formerly it was of flint, obsidian, or other hard stone—and twisting the scalp-lock, which is left long for that purpose and boastfully braided or decorated with some gaudy ribbon or with the lone eagle's plume, round his left hand, marks with the right two semi-circular incisions, with and against the sun, about the part to be removed. The skin is next loosened with the knife point, if there be time to spare and much scalp is to be taken. The operator then sits on the ground, places his feet by way of leverage against the subject's shoulders, and holding the scalp-lock with both hands, he applies a

strain which soon brings off the spoils, with a sound which, I am told, is not unlike "flop." Without the long lock it would be difficult to remove the scalp. Prudent white travellers are careful, before setting out through an Indian country, to "shingle off" their hair as closely as possible; the Indian warrior hardly cares for a half-fledged scalp. To judge from the long war-locks affected by the hunter and mountaineer, he seems to think lightly of this precaution, and to hold it in fact a point of honour that the savage should have a fair chance. A few cunning men have surprised their adversaries with wigs. The operation of scalping must be exceedingly painful: the sufferer tosses, wriggles, and "squirms," upon the ground like a scotched snake. It is supposed to induce brain-fever: many instances, however, are known of men and women recovering from it, as the former do from an even more dreadful infliction in Abyssinia and Galla-land; cases are, of course, rare, as a disabling wound is generally inflicted before the bloodier work is done.

After taking the scalp, the Indian warrior, proud as if he had won a "médaille de sauvetage," prepares to return to his native village. He lingers outside for a few days, and then, after painting his hands and face lamp black, appears slowly and silently before his lodge. There he squats for a while, his friends and relatives, accompanied by the elders of the tribe sit with him, dumb as himself. Presently the question is put: it is answered with truth, though these warriors will at other times lie like Cretans. The "coup" is recounted, however, with abundant glorification—the Indians, like the Greeks and Arabs of their classical ages, are allowed to vent their self-esteem on such occasions, and to enjoy a treat for which the civilised modern hero longs ardently, but in vain. Finally, the "green scalp," after being dried and mounted, is consecrated by the solemn dance, and becomes fit for public exhibition. Some tribes attach it to their horses' bridles, others to their tergas, whilst others ornament with it the outer seams of their leggings. The more scalps the more honour. The young man who cannot boast of a single murder, or show the coveted trophy, is held in such scant esteem as the English gentleman who contents himself with being passing rich on £100 a year. Some great war-chiefs have collected a heap of these honourable spoils. It must be remembered by curiosity hunters that only one scalp can come off one head: namely, the centre-lock or long tuft growing upon the coronal apex, with about three inches in diameter of skin. This knowledge is the more useful as the western men are in the habit of manufacturing half a dozen, but from different parts of the same head. They sell

readily for fifty dollars each ; but the transaction is not considered respectable. The American, however, readily distinguishes the real article from "false scalping," by the unusual thickness of the cutis, which is more like that of a donkey than of a man ; set in a plain gold circlet it makes very pretty brooches. Moreover, each tribe has its own fashion of scalping, derived from its forefathers. The Sioux, for instance, when they have leisure to perform the operation, remove the whole headskin, including a portion of the ears : they then sit down and dispose the ears upon the horns of a buffalo skull, and a bit of the flesh upon little heaps of earth or clay disposed in given ways, apparently as an offering to the manes of their ancestors, and they smoke ceremoniously, begging the Manitou to send them plenty of scalps. The trophy is then stretched upon a willow twig, bent into an oval shape and lined with two semi-ovals of black or blue and scarlet cloth. The Gutas and the Prairie tribes generally, when pressed for time, merely take off the poll-skin that grows the long tuft of hair, while the Chyuagara, or Nez Percé's, prefer a long slip about two inches wide, extending from the nape to the connection of the hair and forehead. Indians are aware of the aversion with which the pale-face regards this barbarity. Near Alkali Lake in the valley of the Plate River, where there was a large "Lakotu Tipi"—encampment of Sioux—I tried to induce a tribesman to go through the imitation process before me ; he refused with a gesture, indignantly repudiating the practice. A glass of whisky would doubtless have changed his mind, but I was unwilling to break through the wholesome law that prohibits it.

RENAN ON THE SHEMITIC NATIONS.*

THE attention which has been paid by modern anthropologists to the Shemitic school of thinkers, and to those vague traditions which are wafted to us from the shores of Syria, the plains of Padan Aram, or the banks of the Euphrates, is now beginning to produce its good fruits ; and the controversies of Chwolson, Quatremère, and Renan as

* An Essay on the Age and Antiquity of the Book of Nabathæan Agriculture ; to which is added an Inaugural Lecture on the Position of the Shemitic Nations in the History of Civilisation. By Ernest Renan, Membre de l'Institut ; Hon. Fellow of the Anthropological Society of London, etc. 12mo. Trübner : 1862.

to the age and authenticity of *The Book of Nabathæan Agriculture* has produced a beneficial influence over the thoughts of Europe.

The work entitled *The Book of Nabathæan Agriculture* is alluded to both by S. Thomas Aquinas and Moses Maimonides. Upon the assumption that it was a genuine document, it was a translation made by Ibn Walshiya al Kasdani, a Mussulman, in A.D. 904, from a Chaldean manuscript, by an author named Kúthámi. Quatremère considers that Kúthámi flourished about the reign of Nebuchadnezzar the Second. Meyer, the botanist, of Königsberg, however, assigned its date to the first century of our era. Professor Chwolson, of St. Petersburg, however, considers it extremely probable that the period when Kúthámi, the Babylonian, wrote *The Book of Nabathæan Agriculture* was certainly not later than B.C. 1300.

The contents of this book, on the presumption of its antiquity, give the most remarkable ideas as to the literature of Babylon, and of the founders of the various Chaldean religions. According to M. Renan's account :

"In the foreground appears the chief personage of Babylonian literature, a certain Yanbúshádh, founder of natural sciences and originator of a kind of Monotheism. He is separated from Kúthámi by four or five centuries. Some ages before Yanbúshádh, appears Daghrih, founder of another school, which had some disciples, even after Yanbúshádh. This Daghrih lived, according to Dr. Chwolson, two thousand years before Christ; and speaks of various persons of Babylonian tradition in a manner which shows that he then considered them as men of early antiquity. Indeed, long before Daghrih, there is another age of literature, of which the representatives are Mási the Suranian, his disciple Jernáná, and the Canaanites, Anúhá, Thámithrí, and Sardáná (towards 2500). All these sages appear at once as priests, founders of religions, moralists, naturalists, astronomers, agriculturists (*agronomes*), and as universally endeavouring to introduce a worship freed from idolatrous superstitions. A short time before them Ishíthá flourished, the founder of a religion which Kúthámi vehemently opposes, though he acknowledges that it exercised, in his own time, a salutary influence. Before Ishíthá, Adami appears as the founder of agriculture in Babylon, acting the part of a civiliser (*civilisateur*) and hence named 'The Father of Mankind.' Before him we find Azada, the founder of a religion which the higher classes persecuted, but which was cherished by the lower; Ankebúthá, Samáf-Nahari, the poet Húhúshi, whose attention was already directed to agricultural science; Askúlebíthá, a benefactor of mankind and the earliest astronomer; and finally, Dewánái, the most ancient lawgiver of the Shemites, who had temples, was honoured as a god, and was called 'Master of Mankind.' The age of Dewánái is, according to Dr. Chwolson, strictly historical, and Babylon was already, at that time, a completely organised state. There are indications, before

Dewânâi, of great efforts towards civilisation ; and it is in that distant period that Professor Chwolson places Kámâsh-Nahari, the author of a work on agriculture ; the saints and favourites of the gods, Aâmi, Súlina, Thúlúni, Resâi, Kermáná, etc. ; and finally, the martyr Tam-múzi, the first to found the religion of the planets, who was put to death, and afterwards lamented by his followers. Dr. Chwolson stops here ; he acknowledges that before that period all fades into the mist of fabulous antiquity."

Professor Renan, however, does not assign any very high antiquity to the work. The frequent references in it which are made to the Greeks or Ionians (*Yúndnis*), the use of the term Antioch (*Anthakia*), the mention of such Neoplatonic ideas as those of Hermes (*Armsád*) and Agathodæmon (*Agháthádimún*), the allusion to Æsculapius (*'Askλapiós*) under the name of *Askoldbita*, the statement that the Pehlevi language existed as a Persian dialect in the time of Kúthâmi, the manifest acquaintance which the author possessed with the Zend Avesta, the allusion to Indian civilisation, and many other passages, exemplify the contact of the Nabathæans with a high and a late civilisation. To take one allusion which is made to Jewish tradition :

"There are persons who believe that the Chaldæans began the attack on the Assyrians ; but it is not so. The Assyrians, in fact, are not of the race of Adam, while the Chaldæans are his descendants. Thus, the language of the Assyrians, and the names by which they call different objects, cannot be older than Adam, who first gave to everything its name, and was the first who established and organised language itself. Therefore it is not the Chaldæans whom the Assyrians oppose, but Adam ; for Adam named this plant *akermaš*. Now, it is universally acknowledged that what Adam ordained is true and wise ; and what others have ordained is without foundation. Then, too, the Assyrians are the children of Shabrikan the First, who is neither comparable nor equal to Adam, and who cannot even come near to him."

"These two nations (the Canaanites and the Chaldæans) are descended from two brothers, both sons of Adam, and of the same mother, one of the wives of Adam ; for Adam, according to those skilled in genealogy, had sixty-four children, of whom twenty-two were daughters and forty-two sons. These forty-two sons left eighty heirs. The others had no posterity which has descended to our times."

The Jewish influence is thus strongly manifest in the thoughts of the old Nabathæan. But the allusions to the early Hebrew patriarchs are most frequent :

"One of the ancient sages who fills the most important part in "The Book of Nabathæan Agriculture" is Adami. Adami was considered as the founder of agriculture in Chaldæa ; to him are attributed

certain books of which Kúthámí doubts the authenticity, and which he found altered or interpolated. . . . We know that many apocryphal writings were attributed to Adam, that the Mendaïtes ascribed their chief book to him, and that the ancient Sabians had books under his name. Our Adami is thus most undoubtedly the Adamas or apocryphal Adam of the Babylonian sects. Can there remain any doubt about this identity, when it is seen that Adam bears, in *The Agriculture*, the title of *Father of Mankind*, a title which all the Moslem East gives to Adam."

"Ishítha, the son of Adami, described as a religious legislator, as the founder of astrology and of astrolatria, is undeniably Seth. . . . Akhnúkha or Hánúkhá is Enoch."

"Anúhá, the Canaanite, another of the founders, represented as the apostle of Monotheism, is undoubtedly Noah. Indeed, a great deluge happened in his time. Moreover, Anúhá planted the vine, and he is always cited as an authority in speaking of the making of wine. Finally, Ibrahim, the Canaanite (that is to say of Palestine), is certainly, in spite of what Dr. Chwolson says about it, the patriarch Abraham.

"As to the part which Númrúda plays in *The Book of Nabathæan Agriculture*, as a Canaanite priest, and as founder of the Canaanite dynasty at Babylon, it would be presumptuous to say that this idea only has its origin in a plagiarism from the Bible. It is very possible that there might be some national tradition respecting him. Nimrod, as we shall presently see, was a popular personage in Chaldæa in the first centuries of our era. It is difficult to unravel, amidst the confusion of ideas which then prevailed in the East, the origin of legends so denuded of true character, and over which is thrown that general level of mere platitude which gives such a singular air of monotony and conventionalism to all the traditions transmitted to us by Arabian writers."

The manner in which some of these patriarchs are described in the genethliologic work *On the Secrets of the Sun and Moon* is very amusing. This work sets forth the opinions of the pretended Babylonian sages, Adámi (Adam) Ankebúthá and Askolábíta (*Æsculapius*), on the artificial production of living beings. They were, figuratively speaking, the Pasteurs, Schultzes, and Pouchets of their day. The miracles of *Æsculapius* and the wonders of Adam, however, sink into insignificance before the feats of their colleague, Ankebúthá. This heterogenetic *savant* outdid Prometheus or Frankenstein. He succeeded in forming a man, and kept him alive for a year. Another rival advocate of spontaneous generation under difficulties also succeeded in the same experiment, but the king, for political reasons, forbade him to repeat it. It would be highly inconvenient to increase a surplus population in this manner.

The work of "Tenkelúshá, the Babylonian, the Kukanian," belongs to the same date. The author, however, is proved to be com-

paratively modern by the researches of Salmasius.* Salmasius says, " Tenkelus ille Babylonius quem memorat Nasirodinus (i.e. Nasiredîn Tousei) is omnino est qui Τεύκρον Βαβυλώνιος Græcis vocatur, et fortasse in scriptis Græcorum perperam hodie legitur Τεύκρον pro Τένκρος, idque deflexum ex illo nomine Babylonio Tenclus." The author of this Helleno-Babylonish treatise was consequently named Teucer.

Yarbúká was the author of a *Book of Poisons*, perhaps contemporary with the other writers. M. Renan thus sums up the whole investigation :

" One deduction appears to me to arise from the analysis to which we have subjected *The Book of Nabæathan Agriculture*, and the other Nabathæan writings, and that is that the school to which they belong, taken altogether, cannot be anterior to the third or fourth century of our era ; and that the literary movement which they suggest as earlier, does not allow us to place it before Alexander."

The more interesting part, however, of the present work is the copy which is given of Professor Renan's inaugural lecture on the Shemitic nations. A few extracts only are all we can give of this eloquent oration. It should be read throughout to be actually appreciated :

" The most important results to which historical and philological science has arrived during the last half century, have been to show, in the general development of our races, two elements of such a nature which, mixing in unequal proportions, have made the woof of the tissue of history. From the seventeenth century—and, indeed, almost from the middle ages—it has been acknowledged that the Hebrews, the Phœnicians, the Carthaginians, the Syrians, the Babylonians (at least from a certain period), the Arabs, and the Abyssinians, have spoken languages most intimately connected. Eichhorn, in the last century, proposed to call these languages Shemitic, and this name, most inexact as it is, may still be used.

" A most important and gratifying discovery was made in the beginning of our century. Thanks to the knowledge of Sanscrit, due to English scholars at Calcutta, German philologists, especially M. Bopp, have laid down sure principles, by means of which it is shown that the ancient idioms of Brahmanic India, the different dialects of Persia, the Armenian, many dialects of the Caucasus, the Greek and Latin languages, with their derivatives, the Slavonic, German, and Celtic, form one vast family entirely distinct from the Shemitic group, under the name of Indo-Germanic or Indo-European.

" The line of demarcation, revealed by the comparative study of languages, was soon strengthened by the study of literatures, institutions, manners, and religions. If we know how to assume the right point of view in such a careful comparison, it is seen that the ancient literatures of India, Greece, Persia, and the German or Teutonic

* De Annis Climacteris, et Antiqua Astrologia. Leyden: 1648.

nations, are of a common stock, and exhibit deeply rooted similarity of mind. The literature of the Hebrews and that of the Arabs, have much in common; while on the contrary they have as little as possible with those which I have just named. We should search in vain for an epic or a tragedy among the Shemitic nations; as vainly should we search among the Indo-European nations for anything analogous to the *Kasida* of the Arabs, and that species of eloquence which distinguishes the Jewish prophets and the Koran. The same must be said of their institutions. The Indo-European nations had, from their beginning; an old code, of which the remains are found in the Brahmanas of India, in the forms of the Romans, and in the laws of the Celts, the Germans, and the Slaves; the patriarchal life of the Hebrews and Arabs was governed, beyond contradiction, by laws totally different. Finally, the comparison of religions has thrown decisive light on this question. By the side of comparative philology in Germany there has of late years arisen the science of comparative mythology, which has shown that all the Indo-European nations had, in their beginning, with the same language also the same religion, of which each carried away scattered fragments on leaving their common cradle; this religion, the worship of the powers and phenomena of Nature leading by philosophical development to a sort of Pantheism. The religious development of the Shemitic nations obeyed laws totally different. Judaism, Christianity, Islamism possess a character of dogmatism, absolutism, and severe monotheism which distinguishes them radically from the Indo-European,—or, as we term them, the Pagan religions."

The accuracy of the following deduction can only be appreciated by the student who may have passed weeks in Mohammedan society:

"The Indo-European and the Shemitic nations are in our day still perfectly distinct. I say nothing of the Jews, whose singular and and wonderful historical destiny has given them an exceptional position among mankind, and who, except in France, which has set the world an example in upholding the principle of a purely ideal civilisation, disregarding all difference of races, form everywhere a distinct and separate society. The Arab, and, in a more general sense, the Mussulman, are separated from us in the present day more than they have ever been. The Mussulman (the Shemitic mind is everywhere represented in our times by Islamism) and the European, in the presence of one another, are like beings of a different species, having no one habit of thought and feeling in common. But the progress of mankind is accomplished by the contest of contrary tendencies; by a sort of polarisation, in consequence of which each idea has its exclusive representatives in this world. It is as a whole, then, that these contradictions harmonise, and that profound peace results from the shock of apparently inimical elements."

Professor Renan, in the endeavour to seek out what the Shemitic nations have contributed towards the civilisation of the world, points out that in Political Economy we owe them nothing:

“In Art and Poetry, what do we owe to them? Nothing in Art. These nations have but little of Art in them; our Art comes entirely from Greece. In Poetry, however, without being their dependents, we hold in common with them more than one point of resemblance. The Psalms have become, in some respects, one of our sources of poetry.”

“In Science and Philosophy we are exclusively Greek. The search into causes, knowledge for the sake of knowledge, is a thing of which there is no trace previous to Greece; a process we have learnt from her alone. Babylon had Science, but not the real element of science, an absolute fixidity of the laws of Nature. Egypt had knowledge of geometry, but she did not produce the Elements of Euclid. As to the old Shemitic mind, it was in its nature anti-philosophical and anti-scientific. In Job, the search into causes is almost represented as impiety. In Ecclesiastes, science is declared a vanity. The author, prematurely disgusted, vaunts his having learnt all that is under the sun, and of having found nothing but weariness. Aristotle, nearly his contemporary, and who had more right to say that he had exhausted the universe, never speaks of weariness. The wisdom of Shemitic nations never rises above parables and proverbs. Arabian science and Arabian philosophy are often alluded to, and, in fact, during one or two centuries in the middle ages, the Arabs were our teachers; but it was only until we were acquainted with the Greek originals. This Arabian science and philosophy was only a puerile rendering of Greek science and philosophy. From the time when Greece herself reappeared, these pitiful versions became valueless; and it was not without cause that all scholars at the revival of letters commenced a real crusade against them. When closely examined, moreover, the Arabian science has nothing Arabian in it. Its foundation is purely Greek; among its originators there is not a single true Shemite; they were all Spaniards and Persians who wrote in Arabic. The philosophical part filled by the Jews in the middle ages was that of simple interpreters. The Jewish philosophy of that period is Arabian philosophy, without modification. One page of Roger Bacon contains more of the true spirit of science than all this second hand knowledge, devoid of true originality, and respectable only as a link in the chain of tradition. If we examine the question in a moral and social point of view, we shall find that Shemitic morality is at times very high and very pure. . . . As regards industry, invention, material civilisation, we owe, beyond contradiction, much to the Shemitic nations.”

He sums up thus:—

“We do not owe to the Shemitic race our political existence, our Art, our Poetry, our Philosophy, nor our Science. For what, then, are we indebted to it? We owe to them Religion. The whole world, with the exception of India, China, Japan, and nations yet altogether savage, has adopted Shemitic religions. The civilised world numbers only Jews, Christians, and Mussulmans. The Indo-European race, in particular, except the Brahmanic family and the feeble remnants

of the Parsees, has passed entirely over to Shemitic creeds. What has been the cause of this remarkable phenomenon? How is it that nations, which hold the guidance of the world, have abdicated their own creed to adopt that of those whom they have overcome?"

The reasons which Professor Renan assigns for this fact must be read in Mr. Trübner's excellent translation. Professor Renan's concluding remarks will re-echo a sentiment of admiration in the minds of all sincere anthropologists, who study their noble science without *a priori* prejudices, or cringing concessions in favour of unscientific assumptions.

INHERITANCE OF AN ABNORMAL DISTORTION OF THE WRIST.

By CHARLES H. CHAMBERS.

SOME remarks of Dr. Waitz upon the persistency of deviations from normal forms in various races or groups of mankind, have made me think it worth while to communicate a fact which came under my notice some years since, and which, as the evidence on the subject is accumulative, is not I think unworthy of being signalised. I happened three years since to be in the Shetland islands; I was at a place in the south of the mainland, called Koningsborough, and one day, having seen the herring boats take their departure, was returning home, when I was accosted by a fisherman, who asked me to give him advice about his son who had had a dangerous fall from some cliffs. I assured him I was neither a physician nor surgeon, but he still insisted upon it, and I examined the boy's arm which, though bruised, was unbroken; I remarked that it was, as I thought at first, dislocated, but, on further examination, found that what I imagined was dislocation was an abnormal growth of the bone above the joint which projected to the height of nearly three-quarters of an inch; finding that it was a bruise, I said I would send down an embrocation from Lerwick, and on getting to it I went to the medical man there and told him of the case. When I mentioned this abnormal growth, he said that that was not singular there, as he had remarked that bony excrescence on the wrist in very many of the natives. There is no doubt a great deal of intermarrying among relations, and it is possible that an accidental deformity has, in this way, become perpetuated among the natives of the islands.

HUMAN REMAINS IN LOUGH GUR, COUNTY LIMERICK.

IN the *Reader* of January 23rd, appears the abstract of a paper, read by Dr Carte, before the Geological Society of Dublin, on the 13th of January, "On the Recent Discovery of Bones of the Polar Bear in Lough Gur, County Limerick; with observations on their comparison with Bones of the Cave Bear in the Collection of the Earl of Ennis-

killen." The facts by Dr. Carte were corroborated by Prof. Jukes, Mr. Blyth (of Calcutta), and the Rev. Dr. Houghton. The most interesting anthropological fact was disclosed by Mr. Scott, who said, "that two distinct kinds of human remains had been found in Lough Gur. One of these was evidently very ancient. There was a skull, however, which did not appear to have been very long in the lake. He would ask anatomists to say whether some of the skulls found in the lake did not point to the existence in Ireland, at a remote period, of a race totally distinct from its present inhabitants. Dr. Blyth stated that there was not *sufficient* of the skull remaining to warrant an opinion being formed." The *Reader* goes on to add, "subsequently, however, we learn that that gentleman has been shown a fragment of an ancient Irish human skull, with wide glabella and prominent frontal sinuses, which he thought there could be little doubt appertained to the now Arctic race of mankind, which is known as the hyperborean Mongol." This fact is most interesting to anthropologists. The skulls which we have seen from the "river beds" of Ireland, and especially from the river Blackwater, and from Bovies on the river Nore, present a type very distinct from that of the "Mongol," or from the brachycephalic "stone period" skulls. They belong to the same great group of skulls as the specimens from Muskham (Trent valley), Townyn-y-capel in Anglesea, and other localities, some of which have been described by Prof. Huxley, or by Mr. Carter Blake (*Geologist*, June, 1862). Our attention has been long drawn by Mr. W. Davies, of the British Museum, to the remarkable variation in the proportions of bones of cave-bear from various deposits, and we hope that some of them may be carefully compared with *Thalarctos maritimus*.

THE DANISH KITCHEN MIDDENS.

To the Editor of the Anthropological Review.

SIR,—As I was returning from a stay of some months in Norway, in the year 1857, I went to Copenhagen. The first object of my devotion was Thorwaldsen and his mausoleum, which, as most of your readers are aware, contains a complete collection of his works exactly copied in marble, as well as some of the originals, while some of his most famous works are in the town. My next was the fine ethnographic collections, especially of northern antiquities. I was also anxious to see Professor Worsaae. I was so unfortunate as to find the gallery, for a certain time, permanently closed to the public. Professor Worsaae's brother had just died, and he had gone into the country, and I was referred to Professor Thomsen in order to obtain leave to see the museums. He was most kind and courteous, and not only gave me permission, but himself came with me. I think it may not be uninteresting to some of your readers to give from my journals the impressions conveyed by what was then a recent discovery, and the substance of the remarks of so able and specially qualified a man as Professor Thomsen upon the ethnology and peopling of the north of

Europe, as well as to signalise what I think is not very generally known—the attention which has been paid to anthropology in Denmark. The following is the entry in my journal:—

“The Professor was very civil, came with me, and explained the arrangement of the museum; it is in three divisions, representing the remains of three ages: first, aboriginal tribes of very great antiquity (he spoke of five thousand or six thousand years, at the same time saying that it might be much more) unacquainted with the use of any metal, who used implements of flint. In the first room is a large collection of their tools and weapons, not finished, but in process of manufacture, or else repaired after having been used. In another room are finished articles of peace and war; in this room was a very remarkable discovery—beds of oyster shells had been found in Jutland, and for a long time were supposed to be caused by raised beaches, but, on being cut into, were found to be composed of the shells of eaten oysters, the under shells being found in great numbers together; mixed with these are innumerable instruments of daily life, such as knives (of flint), combs, and the bones of animals which these early tribes have eaten; these are found to be extinct birds, mammals of the age of the gigantic ox, &c.—a curious fact, and a proof, as the Professor remarked, that they were very fond of marrow is, that all the bones have been opened for the purpose of extracting it. At this time, he observed, there were no inhabitants in Norway or Sweden. The next race, whose remains are quite distinct from the former, were taller, more slender, and evidently from the east; their ornaments were of gold, and their earthenware vessels more elegant in form. The ornaments of the first race were amber bracelets and necklaces of large size and uncut; a large number were found together in a morass in Jutland, evidently, the Professor remarked, the collection of some travelling merchant who traded in them. The second race prevailed till the Christian era, and Professor Thomsen believed were connected with the tribes who crossed Europe before the rise of the Roman power, perhaps akin to the Pelasgi; they knew not the use of iron, and none of their ornaments were of silver. The last were those who had the iron civilisation, and were, he believed, the first settlers in Norway and Sweden, and the progenitors of the present inhabitants.”

I shall not here discuss the question of the first inhabiting of Norway and Sweden. I am inclined to doubt the fact of the Teutons being the first inhabitants. I believe the race which inhabited the northern shores of Europe to have been akin to the Laps, Fins, and Esquimaux, and the Pickets or Pechts of Scotland, and to have given rise to many of the dwarf, troll, and fairy stories extant among the Sagas and elsewhere. The subject is one which, however, is still much in the realms of opinion.

I am, Sir, your obedient servant,

CHARLES H. CHAMBERS.

Miscellanea Anthropologica.

Secretion of Milk in New-born Children. By NATALIS GUILLOT.
(*Archiv. Gén. de Méd.*)

The breasts of healthy children of both sexes secrete milk immediately after birth. The function commences after the falling-off of the navel string from the seventh to the twelfth day, and ceases to flow after the lapse of a few days. The secretion is normal, and is only seen in a healthy child. The mammary glands are then perceptibly tumified. The milk may be obtained by pressure, sometimes by drops or jets. It is white, neutral, or alkaline, and becomes acid in atmospheric air. It consists of a serous and creamy portion, like women's milk, and presents, under the microscope, the same globules, containing casein, fat, and sugar. It is, in fact, a true milk. This secretion of milk in new-born children has been noticed before, but has been considered an exceptional case; hence its name in Germany, *hexenmilch* (witch milk). Schlossberger obtained from a boy a drachm of such milk. It consisted of 96.75 water, 0.82 fat, 0.05 ash, 2.38 casein, sugar and extracted matter. In the same paper Dr. Guillot strongly recommends the daily weighing of new-born children, which gives a positive index of their state of health. They ought to gain daily 10-15 grammes. The loss of weight frequently indicates an approaching disease.

On Longevity, with special reference to Hessen. By Dr. NEBAL, in *Zweiter Berecht der oberheiss. Gesellschaft für Natur und Heilkunde.* Giessen.

It has been computed that one in 4000 reaches 100 years. This proportion is found in the northern parts of England and Scotland, Sweden, and Norway. An example of the most advanced age is that of Patrecz Czartan at Karansebes, not far from Temeswar, in the Banat. He was born 1539, and died 1724, aged 185 years; his youngest son of his third marriage was 97. There is an instance of a more advanced age, ostensibly from an epitaph in the Leonhaud church of Linden, in which the age of Thomas Kars, died 1588, is stated to have been 207. Easten, in his *Human Longevity*, published 1799, gives 1712 instances of centenarians. Van Oven (*On the Decline of Life*) gives a list of 2000 centenarians. Among the Germans, George Wunder, born at Wülferstadt (Salzburg district) April 23, 1626, died in the hospital of Griez, December 12, 1761, aged 136 (well authenticated). Hannemann (*Ephem. nat. cur.*, 1680) mentions a man of Rostock, who died at the age of 152. Hessen has produced an older man, George Burkhard, of Wettensingen district, Zreremberg. Winkelmann (*Beschreibung von Hessen*) says of him, that at the age of 180 he appeared in March 30, 1597, as a witness in the High Court of Marburg, and was then in full possession of his intellect. He enumerates 101 persons in and about Giessen, from 1559 to 1849, who had arrived at 100 years and upwards. John Hilcke died, aged 120, at Geismar; Joh. Casp. Drapp, aged 123, in 1715, at Petershain; Joseph Brunner, born in Treppstadt, November 26, died November 20th 1827, aged 121 years. He enjoyed a pension from the King of Bavaria.

Extracts from Leib und Seele (Body and Soul). By J. SCHALLER.
Weimar.

The question whether the races of mankind have descended from one couple, or from many, is, however interesting, of but small importance as regards the psychical nature of man. The difficulties which surround the former assumption are apparently insurmountable. The descent from one couple is defended chiefly on the ground that the identity of human nature is inseparably connected with that view. But this is an error. Whatever may have been the origin of mankind, it does not follow that by the separate origin of races, they are necessarily constituted different species. On the other hand, the assumption of descent from a common origin does not *à priori* enable us to form a judgment on the physical and mental capacity of the existing races. Men descended from one common stock may degenerate so, that human nature is nearly effaced in them. We may, if we please, entertain the hope that the difference of races may, in the lapse of time, by the concurrence of influences, become fainter, and finally disappear, and we connect with this hope the conviction that the lowest existing races are capable of the highest intellectual development. But we know of no probable process by which the degenerate races may return to their original healthy physical type, without which a psychical amelioration is scarcely conceivable.

Viewing the question from a scientific point, the assumption of different original stocks is supported by the pertinacity with which the various races retain, under the most different conditions, their specified forms. But we may admit such an original difference of races, without being compelled, as naturalists, to consider mankind as separable in species. In order to prove that the races are not different species, the fact is adduced that these races can interbreed, and produce fertile offspring. It is clear that the whole question becomes confused, unless we are first agreed as to the notion species. If it be maintained that only such races of animals—but these without exception—belong to the same species which can interbreed and produce again an offspring prolific between themselves, we possess apparently a sure criterion of identity of species established by nature. On account of the insufficiency of observations, this notion of species is not yet systematically established by zoology. Other characters of specific difference have therefore been sought after. In order to establish the difference of species in mankind, despite the fact that all races interbreed, the supporters of that doctrine have adduced the facts of successful interbreeding between animals considered by zoologists to belong to different species. But admitting these facts as perfectly authenticated, we might just, on account of the successful pairing, consider them as belonging to the same species despite of striking organic differences. And why should zoology hesitate to abandon, in such cases, the theory of difference of species whenever a prolific interbreeding is sufficiently established, so much the more as zoology assumes the domestic dog, though exhibiting the greatest difference in organic structure, to belong to one species, it being certain, that were there not existing in these dogs the capacity of

interbreeding, no one would hesitate to consider them as belonging to different species?

Giebel (*Hunde rassen oder Hundearten*—Dog races or dog species?) says: "Nowhere in nature, nor in the domesticated state, do we see races so much differing as the greyhound and the terrier, the poodle and the Egyptian dog, the spitz, the bulldog, the retriever, &c. These typical races of domestic dogs diverge from each other, not merely more than the species of many beasts of prey, but represent in certain characters, a great variety of carnivora." Or are we to consider the fact of prolific intercourse as not decisive with respect to identity of species? At any rate, it is somewhat hazardous to consider animals as belonging to the same species, simply on the ground of their being reproductive, though we find in their organisation such decided differences, that much less would be required to induce us, in other animals, to consider them as specifically distinct. Certainly, if we admit fertile interbreeding to be a decided criterion, an essential difficulty to separate mankind in different species is removed. The differences obtaining between the races of mankind are certainly not so trenchant that we are forced to consider them as specifically distinct. When, however, we consult systematic zoology, it cannot be denied that differences considerably less are deemed sufficient to separate animals in different species. Such is the present state of this question. We must leave it to zoologists to determine the still confused question as regards the races of mankind. We are chiefly interested in the question as regards the mental nature of man in the assumption specific differences of mankind.

We reject the theory as one-sided, that it is of no importance in what way we view the question of specific differences of mankind. The physical aspect no doubt presents itself first, but soon the psychical nature of man asserts its importance.

In viewing mankind as consisting of different species, no one has gone so far as to deny the identity of the genus humanum. With regard to the mental character of these various races, we must first consider in what consists the specific character of man in his psychical aspect. We have in a preceding chapter designated personality and free will as the specific difference between man and the brute. If we deny to any individual race this personality and free will, that is, if we assert that this or that species of mankind will never arrive, not even by the influence of other races, to a consciousness of their personal dignity, we may call such individuals *men*, but in point of fact they are not more so than incurable cretins. The possibility of meeting individual tribes, consisting of such cretin-like individuals, cannot *a priori* be denied. But we have no right to consider such a complex of beings as a particular race, and to degrade human nature to the level of the ape. . . .

No race has been found absolutely incapable of any intellectual improvement. No race has been found without any moral feeling or ideas of right and wrong, nor any who had no idea of their personality. . . . It is difficult to decide the question how far many so called savages are capable of improvement, either by their own innate power, or at least by foreign influence.

THE
ANTHROPOLOGICAL REVIEW.

MAY, 1864.

AN INQUIRY INTO CONSANGUINEOUS MARRIAGES AND
PURE RACES.*

BY DR. E. DALLY,

SECRETARY TO THE ANTHROPOLOGICAL SOCIETY OF PARIS; CORRESPONDING
MEMBER OF THE ANTHROPOLOGICAL SOCIETY OF LONDON.

TRANSLATED BY HUGH J. C. BEAVAN, F.R.G.S., F.A.S.L.

I. PRELIMINARY REMARKS.

BEFORE entering into an analysis of the facts upon which depends the theory attributing serious inconveniences and numberless dangers to posterity from marriages between cousins, allow me to offer to your notice an essay on this question which I published in July, 1862, entitled "Des dangers attribués aux mariages consanguins." Since the appearance of this treatise I have not appeared before the Society, and the question has never been mooted at its meetings. M. Devay, whose loss we all deplore, was thus deprived of an opportunity of presenting to the Society an answer which he had made to my work: "Un mot sur les mariages consanguins, réponse à une attaque." It seemed, then, that the question of consanguineous marriages, so complex, so extensive, would not be discussed before you for a long period; but since M. Boudin, in the last number of the *Memoirs of the Society*, has published a fifth edition of his work, "Sur les dangers des unions consanguines," it obliges me to communicate to you at once the result of the inquiries I undertook more than a year ago, and which I intended to bring before your notice at some more distant period.

If I thus anticipate the time when my researches would have been complete, it is not, indeed, because an answer has been made to my

* This paper was read before the Anthropological Society of Paris by Dr. E. Dally, November 5th, 1863. (Tr.)

former objections. But time passes, and statements of M. Boudin are continually appearing, without opposition, without criticism, in journals, in reviews, and as essays; in all of which he declares it is impossible to resist the conclusions of our honourable colleague. Besides, as in some notes in which my name appears, a semblance of an answer has been made to my former work, some persons may believe that such an answer has really been made. It is with the intention of combating these two tendencies that I take the liberty of submitting to you to-day my researches, sufficient, I believe, to contest with the disciples of M. Boudin a triumph as blatant as it has been easy. That the readers of M. Boudin's writings, not being able to examine into all they read, and especially the statistics and extracts, have been struck with the mathematical precision of his assertions, and the eloquence of his remarks, can be easily understood; but that literary men, critics, and above all, those who have written on the subject on their own account, should not have given themselves the trouble to examine the documents furnished by M. Boudin, and that in the presence of a contradictory work they have reproduced without any further explanations the same documents, the same notes, the same conclusions, is a thing which certainly does no honour to the criticism of the age. Allow me to explain the present state of the discussion.

No one, I said, has, up to the present time, answered the objections contained in my work. Messrs. Devay, Boudin, and others have occupied themselves a little about me, certainly, but I have no longer the right to refute the essay—rather too personal, perhaps—published by M. Devay, and M. Boudin has restricted himself in his remarks to the criticism of comparatively unimportant details. In the first of these remarks he accuses me of having produced “neither a fact nor a statistic.” It was not my business to do so. I had not to sustain a doctrine, but to examine that which was already produced. Now, neither the documents which have been exhibited, nor the methods which have been employed as a means of giving them sense, have appeared to me to offer the necessary guarantee for the introduction into physiology and legislation of a doctrine which might be made the subject of domestic dissensions and of individual evil. Things being as they are, it is for those who desire to modify them to give motives worthy of their projects. Besides, I could, long ago, have produced both facts and statistics, but it is not in the face of attacks of which I am the subject that I choose to resume this question, which would prevent me from attending to other work.

The four notes in the review of our colleague's work, "Sur le croisement des familles," will be answered at some later time: they do not in the slightest concern the objections which I have had the honour to present to him, and which I resume now as follows:—

1. In the first edition of M. Boudin's essay, the total number of inmates in the Deaf and Dumb Institution of Paris was not declared. It was incorrectly given in our own *Mémoires*.

2. In the same edition we read that "the resemblance of the proportional numbers found by MM. Landes, Chazarain, and Boudin, constitute a very powerful argument in favour of the precision of their observations", which tended to admit the influence of consanguinity in marriage upon the production of deafness and dumbness. In fact, M. Boudin had deduced from a few observations made in the departments of the Rhône and the Gironde, that in every 100 deaf and dumb cases, he discovered that at Bordeaux 30 per cent., at Lyons 25 per cent., and at Paris 28 per cent., were of consanguineous origin. This uniformity would, indeed, be significant if the number of the deaf and dumb was at all equal in the above named departments. But this number is very different, as it happens; there is in the Seine 1 deaf and dumb case to 4,694 inhabitants; in the Rhône, 1 in 1,669; in the Gironde, 1 in 1638. Now if marriages between cousins have some influence upon the number of the deaf and dumb, the marriages ought to be more frequent in the Rhône than the Seine, and reciprocally, the number of the deaf and dumb ought to be raised wherever there are many consanguineous marriages. In other terms, if there are three times more deaf-and-dumb cases in the Rhône than in the Seine, the proportion of the deaf-and-dumb of consanguineous origin to the deaf-and-dumb of every origin ought to be three times more considerable at Lyons than at Paris. Very well; if at Paris M. Boudin has found 28 per cent., he ought to find in the Rhône about 84 per cent. It would have been easy to answer to this reasoning by facts which would have confirmed or nullified it, and to establish that there are in the department of the Rhône two-and-a-half times more consanguineous marriages than there are in that of the Seine. They preferred, however, to renounce the argument drawn from the resemblance of statistics.

3. I had proposed a plan which consisted in making inquiries *by departments*, and in comparing reports far more complete than those of which M. Boudin has made use. Neither M. Devay, nor M. Boudin, nor their pupils, have once mentioned this.

4. I had foreseen that the number of marriages officially declared

and registered between first cousins was below the truth, and we shall see that this argument was correct, since (in certain communes at least) no mention is made of the degree of cousin in the registers, and in many others no statistical information has been furnished on this point. It followed that the declared percentage of consanguineous marriages—2 per cent.—was too small, and that the true number was not known even to those best informed on the subject. Nevertheless, M. Boudin maintains that his statistics are correct.

5. I had stated that to bring forward the danger of procreating deaf-and-dumb children by marriages between nephews and aunts—overstepped by 70 per cent. the most extensive limits of inference, the proof lying merely in one case of deaf-dumbness from this origin in the Institution at Paris. There was no answer to this. It is by an analogous inference that they pretend to find only one half-bred Jew deaf and dumb. It is evidently impossible to form any conclusions from such statistics.

6. Now, some apocryphal documents having been produced in the course of discussion (statistics from Ohio and Massachusetts), I have felt it my duty to bring forward this fact, and thus I have prevented future compilers from making many serious errors. They have not given me credit for it. Perhaps they will this time tell me whence comes the document attributed to Don Ramon de la Sagra, and whence come the statistics of Mr. Morris, who has studied the cases of 4,013 children of consanguineous origin? Who is Mr. Morris? and where has he published the experiences of these extraordinary inquiries, which must have cost him so many long years of study? This document must be looked upon with a great deal of suspicion when we find that one of those authors who copies M. Boudin literally—even in his mistakes—has abstained from copying it.

I am, therefore, authorised to reiterate my previous criticisms; and, upon some points, I expect further to unfold them. Allow me, before I do so, to bring the subject before your notice in what I believe to be a true light, and to eliminate from the discussion certain foreign elements; allow me, in other terms, to bring forward the question itself.

II. THE LIMITS OF THE SUBJECT.

The considerations which follow, I believe, must be disregarded with reference to animals and vegetables. For, besides the convenience of allowing certain men to examine into special questions, the observations made on animals do not appear exactly applicable

to mankind, at least so far as regards "pairing"; for the conditions of existence are completely different, and the aim which is proposed in zoology has no analogy in social life. It is, therefore, difficult to avoid the unlucky confusion which is continually being made between "selection" and consanguinity, which is only one of the results of selection; this result, applied to realise a known end, cannot be assimilated by factitious consequences' with the spontaneous results of a consanguineous union among mankind. It may happen, in fact, that when consanguinity is applied to animals for the purpose of selection, it produces an artificial development of some parts of the animal, and may thus injure the *general* development. But this result is not avoided when we practise selection, beyond all consanguinity. It is not, therefore, logical to attribute to consanguinity that which is, or may be, attributable to selection.

Also, if breeding in-and-in (*sic*), that is to say, consanguinity increased a hundred-fold, had not, perhaps, given in its interior action the magnificent results which have been proved by the zoologists (and which our colleague, M. Sanson, has clearly shown, with his usual talent), we have no right to extend to mankind, by pure induction, the laws obtained from observation of the domestic animals. Equally, if it were established that the consanguinity of human unions, so far from showing the dangers which our opponents give it, is in the end advantageous, what shall we say about a theory which, without experimental data, without taking account of the respective differences of man in his social state and animals (that is to say, the liberty necessary for human development, and the subjugation not less necessary for the development of animals for the use of man), would proclaim at once the necessity of consanguineous unions?

For this reason, I deprive myself without regret of the support which those zoologists could offer me, who have, in my opinion, outrun anthropologists, and marked, not without precision, the degree in which the consanguinity of reproducers is useful to selection. As to the vegetable kingdom, I do not think it will be proper to bring before your notice the curious connection of relationship which some have tried to prove—with more boldness than good sense—between the fecundity of plants and animals, with reference to consanguinity. If, besides, this same theory could bear the slightest examination, our opponents would not be able to find in it any arguments favourable to their thesis; but of what use is it to extend, so far as the subject of such a strange assimilation, a question which it is above all things necessary to narrow, confine, and specialise?

Do they believe that the definitions may be, as regards mankind, so clear, and that the problem is so well stated, that facts alone may henceforth solve it? That would be a fatal error. The method and its interpretation play here a part of the first order. They speak of consanguineous marriages; they reprove them, and wish them to be forbidden. The question being proposed in these general terms, who can hesitate a single moment in giving his support to the reproof and the interdict? For does not the term "consanguineous marriage" comprehend incestuous unions of all degrees? And how is it that, in order to perpetuate the confusion, our adversaries do not fill up their writings by the documents—more or less authentic—in which are shewn, on the strength of the interdiction of marriages of distant kindred, the moral and physiological evils of incestuous marriages in barbarous or savage countries?

It is painful to bring this remark before your notice, it seems so very puerile; and yet it is necessary to re-establish the thread of the discussion in which we are now engaged. It refers solely to the dangers attributed to marriages *between cousins*; beyond that, it does not even refer to the *moral* inconveniences of such unions. Whatever opinion there may be on this point, it will not figure in our debate; nevertheless, not because morality ought to be separate from physiology, but because it is necessary to simplify a question which is already only too complicated of itself. If *moralists* can see the chief inconveniences of unions between cousins—and such were the first fathers of the Church—by all means let such alliances be forbidden; but let it be done then for moral or theological motives, and not for reasons borrowed from a false biology. Such is, however, the origin of this discussion. The civil law has given such force to canonical prescription fallen into disuse, that dispensations are never refused. One would wish, however, to restore these prescriptions, by relying not only on the wise and legitimate reasons of their authors (since these reasons, as we shall see later, no longer exist), but by relying on statistics and physiology. Another consideration, entirely theoretical, must be brought forward. I will suppose, then, that marriages between cousins furnish really a larger proportion of weakly and sickly children than other marriages; this fact, well established, may receive a certain number of rational explanations; but, doing away with this idea that every man is affected with a morbid predisposition, more or less developed, and that these predispositions have a tendency to perpetuate themselves in all the branches of a family, one may fear that two first cousins, affected with the same predisposition,

should transmit it to their children in a stronger manner than it appeared in themselves; each of these two individuals being slightly gouty, for instance, would produce a child who from his youth would show symptoms or injuries which would prove the existence of an uric diathesis of the worst description. Now I know not if such is, in reality, the law of morbid transmissions; it must be controlled by facts, and this part of the work has not yet been done. But, in all cases, the affirmative hypothesis has nothing in it which offends reason; on the contrary: and I know there are many hygienists who are hostile to consanguineous marriages on account of this very plausible theory.

Such is not the position of our opponents. They maintain that consanguinity, *ipso facto*, pure consanguinity, has *of itself*, in the absence of all disease in the parents, the property of producing diseases in the children. It is only this theory which I am now attacking, without caring to know if the facts which I am examining confirm or weaken the question of the dangers of a doubly unhealthy consanguinity.

Upon this last point, nevertheless, I am not prepared to think that the chances of disease in children are more numerous when the two parents are afflicted with the same disease, than when they show, each one separately, special predispositions; for, if we suppose that the laws of morbid inheritance are invariable, it would follow in the first case that the child would be affected with a predisposition in some degree *pure*; in the second with a predisposition, so to speak, *hybrid*; and, all things being equal, I believe that clear and well characterised diseases are less rebellious to therapeutics than those in which all sorts of pathological *elements* are mingled. This would require to be scientifically established or refuted; but the dangers of consanguineous marriages, at all events in the way in which they are understood by Messrs. Devay and Boudin, have nothing common to inheritance. M. Boudin insists strongly on this point. "In our opinion," he says, "consanguineous marriages, so far from militating in favour of an entirely imaginary and morbid inheritance, constitute the most powerful argument against the laws themselves of inheritance. Why, you see parents who are consanguineous, full of strength and health, exempt from all appreciable disease, incapable of giving to their children the health which they themselves have—giving them, on the contrary, that which they do not themselves possess; and it is in presence of such facts, that some persons dare to bring forward the words 'morbid inheritance!'" Assuredly, the audacity must be great

which enables any one to say this. Is it less audacious to say that it is consanguinity *ipso facto* which is the cause of it?

In the case of two persons not closely related and in good health, who have weakly children, the cause of this weakness escapes your observation altogether: it is by this, then, that we are advised to declare that these facts protest against the laws of inheritance. Do we dare, for want of anything better, to take one particular circumstance in the case of individuals, and then to say, "you are not discovering the cause of this disease, behold it here"?

To sum up; we must exclude from anthropological researches on consanguinity all facts which relate to plants and animals; we must only study legitimate marriages between cousins or collaterals, and not between direct progenitors and relations in the first degree; we must disengage from this study all considerations of domestic and moral order: we must see, then, if the facts which are produced confirm or weaken the theory of the dangers of healthy, in opposition to morbid, consanguinity. These are two questions, connected, yet distinct. Such are, let us consider, the first conditions of every controversy.

I will, therefore, examine successively. 1. The statistics which have been made in the asylums for the deaf-and-dumb, for the purpose of proving that consanguineous marriages furnish these asylums with a relatively larger proportion of inmates. 2. Observations comprising particular cases observed by French or foreign physicians, taken from a large number of patients. 3. Assertions regarding the decay of the higher classes, and the comparative value of races called pure, and especially of the Jews. 4. Facts which are favourable to the practice of healthy consanguinity. 5. Historical documents which have reference to the laws of antiquity, and which touch on the origin of the illegality of consanguineous unions.

III. STATISTICS CONCERNING THE DEAF-AND-DUMB IN ASYLUMS.

Our honourable colleague, M. Boudin, had an excellent plan for relieving the Paris asylum of the number of patients who owe their birth to consanguineous parents. He has been led by this means to compare the proportion of deaf-and-dumb cases of this origin, with the proportion of marriages between relations, and the difference between these two products has given him a proximate value of the dangers which these unions present. If, in fact, there are 5 consanguineous marriages in 100, one ought consequently to find 5 cases of deaf-and-dumb children of *consanguineous origin* in every 100 cases of the same nature.

But in order that this plan may lead us to undeniable results, we

must certainly have both the record of all consanguineous marriages, and that of all the deaf-and-dumb. We must, besides, in order to avoid the chances of exception, be able to compare the number of deaf-and-dumb with the total population of a given place, and, in fact, to be able to compare the statistics of many other places with them. If we arrive, by this means, at analogous results, we should certainly have the right to consider them as finally acquired: the case would be so, for example, if this work had been done separately in each department of France. In my first notice on the subject I sketched a plan which M. Uytterhœven proposed last year at the Social Science Congress at Ghent, as the foundation of a debate which should have taken place there this year.* But the question of consanguineous marriages, already so extensive, having given place to the indefinite one of "Civil Marriage and its Consequences," I have had the sorrow of learning that the question never touched on our subject, and that no statistics whatsoever were produced.

The difficulties which one experiences in obtaining exact reports are besides very considerable, and have prevented many persons who promised me their impartial assistance from giving effect to this promise. In fact, if it is easy by the table of exceptional cases, and the general register of marriages to recognise the number of adult male deaf-and-dumb cases of a department, it is almost impossible to have the register of the deaf-and-dumb of every age and sex, and that of marriages between cousins.

The regulations of the préfecture prescribe the registration of marriages between first cousins, uncles and nieces, nephews and aunts, sisters-in-law and brothers-in-law; but these registrations are incomplete in the towns, and entirely neglected in the communes. In the offices of the *mairie* at Paris, the statistics of marriage are registered monthly with great exactness, with the individual relationship, and it is from these that the clerks register the degree of cousinship. The future parents are not directly questioned, and their relationship is not an object of particular registration, either in the record, or the registers. One can understand, then, how many omissions must be made in the long and uninteresting work of abstracting from numerous records (1000 per month in the 8th district) a page of statistics in which is comprised thirty or forty questions.

But it is not in towns that marriages of relations are the most numerous: it is certainly in the country. Now, in a great many country places (I myself know of three communes), no account is taken of the relationship of parents, excepting in the case where legal

* See the Report of the Meeting, p. 562, 1863.

dispensations are necessary (uncle and niece, aunt and nephew). Most people know that, in general, the communal schoolmaster fulfils the duties of secretary to the mayoralty; these *employés* have usually a manual recommended by the Minister of the Interior,* and according to the instructions found therein they draw up their records; one can read there the enumeration of "eleven declarations common to all the records of marriage," and in these there is not a single question on the subject of relationship.

These instances alone would suffice, I think, to authorise us to consider that the official number of marriages between cousins is very much under the reality, and that they do not comprise the country population, in the centre of which the statistics are regulated. The total number of marriages is, on the contrary, rigorously exact everywhere. Hence it follows that when M. Boudin values, by official documents, the proportion of "relationship marriages" at 0.9 per cent., this number has, in my eyes, notwithstanding its official origin, no scientific value whatsoever, because I know that it rests upon the authority of incomplete data. And that which was at first my opinion only is become a certainty, since I inquired of M. Legoyt, the head of the statistical office of France, the manner in which the numbers published by M. Boudin had been obtained; this official has authorised me to declare that he cannot answer for any statistics, except those which have reference to the legal dispensations necessary for marriages between uncle and niece, aunt and nephew; so, since marriages between first cousins do not require this permission, M. Legoyt is convinced himself that the extracted numbers are incomplete, and he has prepared a circular destined to remedy the various mistakes already noticed. Future parents will be henceforward directly questioned about their relationship; mention will be made in the records of their answers, and there is reason for hoping that, in a few years, we shall learn the real proportion of consanguineous marriages. In the meanwhile I have examined, at the *mairie* of the eighth district of Paris (formerly the first), the monthly records of marriages celebrated during a period of ten years, from 1858 to 1862, and I have obtained from them the following results:—

Total number of marriages,	10,765.		
Marriages between first cousins	-	-	141
" " uncle and niece	-	-	8
" " aunt and nephew	-	-	1

150

* Guide du maire et du secrétaire de mairie, par M. Hallez-d'Arros, 1858.

(This number may vary from 146 to 152, on account of three figures which are uncertain.)

These numbers give us a proportion of about 1·4 per cent. And it appears to me impossible to admit otherwise than this, that, in a district of Paris which is inhabited by foreigners, showing a considerable floating population, there are many less marriages between cousins than in the midst of small towns and in the country. This is why, finding here 1·4 per cent., I am authorised to say that 0·9 seems to be three or four times too small a percentage for the whole of France.

But our criticism does not stop there. Starting from the incorrect proportion of 0·9 per cent. of marriages between first cousins, M. Boudin wishes to value the number of marriages between cousins, *children of first cousins*, so as to be able to comprise in the morbid cases, due according to him to consanguinity, those which are observed in children who are the issue of such marriages.

Unfortunately, here all the elements of statistics are completely at fault; in such a case, it is not worth while giving up a value which is necessarily arbitrary. M. Boudin does not understand it thus: he wishes to comprise in his statistics the cousins who are themselves children of first cousins (and even, as we shall see, as far as cousins of the seventh degree), and he believes that by adding 1·1 for these last he has sufficiently valued their proportion in relationship marriages: we thus obtain 2 per cent. ($0\cdot9 + 1\cdot1$) as the number around which to group a large number of deductions. Now, as for this second fraction, M. Boudin is not more fortunate about it than he was with the first; for while he fixes at 1·1 the proportion of marriages between the children of first cousins (and others), I can myself fix it at 5, 10, or 15 per cent. We are here speaking of a matter of pure hypothesis. Every one can choose his own; and since we ought to find three or four times more children who are offspring of first cousins than first cousins themselves, my first number, however exaggerated it may seem, will be much nearer the truth than that of M. Boudin. In whatever way we regard it, it is impossible to agree with M. Boudin that marriages between first cousins are in the proportion of 2 per cent. Such is, however, the fundamental idea in our colleague's essay.

Let us now examine the other elements. M. Boudin announces that among 200 patients he found 95 who had been deaf and dumb *from birth*. I demand, therefore, why this elimination of 105 cases, and I am answered: "Would M. Dally have desired that we should

have examined into the consanguineous origin of those who have become *accidentally* deaf and dumb?" The question is certainly ludicrous; I beg pardon for it, but I must really be allowed to state that the term is here very badly applied: *accidental* is not employed in opposition to *congenital*: *acquired* is, in this case, the proper word. To call the deafness which occurs after birth *accidental* is not using the language of medicine, where, in fact, the word receives a signification quite foreign to that which now engages our attention. But for men of the world, the unscientific class, *accidental* seems to give the idea that ordnance has been fired off close to the ears of M. Boudin's 105 patients. What an absurd thing it would be to endeavour to discover the consanguineous origin of *deaf* artillerymen? This is, however, the very thing which, according to M. Boudin, I reproach him with not having done: evidently he mistakes the sense of the objection. This mistake rectified, I do not hesitate to answer "yes, I should have wished you to comprise in your list the 105 cases that you have eliminated, and a great many more;" for if, on one side, the influence of consanguinity is real, why is it not exercised as well after as before birth? Is it not so with all predispositions and nervous affections? And as to that which regards the inheritance of anomalies, is it not a rule that it shows itself at a certain age, often an advanced one? What is deaf muteness besides? Are its organic causes so well known that we can afford to pass them over in silence? Do we believe that it is an arrest of development, or do we consider that it is an injury entirely functional? Do we not know that there are deaf children who *do* hear slightly at birth, but whose infirmity is strengthened and confirmed as years advance? In the midst of all these uncertainties, we do wrong to the two classes of deaf-mutes—one congenital, the other *post nativitatem*—when we declare that the inquiries concerning consanguinity ought only to be carried on with reference to the parents of the former class.

But these objections are entirely theoretical; in practice there is one, perhaps the most serious of all—this is the difficulty of the distinction mentioned after the list of questions annexed to the files, of which the answers are exposed to numberless chances of mistakes; thus a great number of records contain no information; others contain doubtful answers; sometimes they are contradictory. All the world knows, indeed, that it is extremely difficult to ascertain the fact of deaf-muteness during the first months of life; in truth, parents have a great dislike to allow that their child is infirm from birth.

“We must count very little upon the information of parents,” says Dr. Bonnafort, “on this point, for they will scarcely admit that whatever there is imperfect in the child was present at its birth; rather than allow any imperfection in the organisation, they lay the blame to the carelessness of a nurse or a servant. Then the parents, by a pardonable illusion, imagine that their child has heard and spoken: that they have seen those mechanical movements of the lips which maternal affection takes to mean *papa* or *mama*, and which the child *appears* to pronounce while trying to imitate the lips of the persons who pronounce these words for them so often.”*

One knows, besides, that in statistics, that which signifies most is the greatest number of *similar facts*: *particular cases* destroy one another, and do not modify the final result. I maintain, then, that we must examine the whole of the records to find if the inmates are present, have left, or are dead. Now M. Boudin writes, “Among 200 patients now present, we have found 95 who have been deaf mutes from birth.” He ought to have said, “Among 200 records,” for his examination was of these, not of the individuals themselves. I take in place of these 200, the whole of the records possessed by the institution—315, and in this number, doubtful cases being struck out, there are 124 who are deaf from birth. I state this result, to which I attach no importance, so that we can at will deduce from either one number or the other (315 or 124) the proportion of inmates of consanguineous origin.

Among the 95 cases of infirmity from birth, M. Boudin announces that he finds the following origins:—

Congenital origin, but not sufficiently established	-	8
Born of parents unknown	- - - -	20
” ” not consanguineous	- - - -	48
” ” who are consanguineous	- - - -	19
		95

“In only noticing the two last figures, we find 19 cases of consanguineous origin against 67 afflicted from birth, that is 28·35 per cent.” Now, since the proportion of marriages between first cousins has been already fixed at 2 per cent., it follows that there are in the Paris asylum fourteen times more deaf-mutes of consanguineous origin than there ought to be, and that the danger of having deaf and dumb children in an ordinary marriage being represented by 1, it is no less than 41 in a marriage between relations. This conclusion is

* *Traité des maladies de l'Oreille*, p. 595, 1860.

overwhelming. Happily, however, if we take the trouble to examine this line—"Born of parents who are consanguineous, 19"—this spectre of consanguinity vanishes. In fact, in the 315 reports which I have examined, I find 18 indications of consanguinity, the persons married being as follows :

First cousins	-	-	-	-	-	-	-	6
Issue of first cousins and others up to the 7th degree								11
Aunt and nephew	-	-	-	-	-	-	-	1

18

The six first cousins are: 1. Baillargeat (born in a flat and humid country: a female relation of the mother's deaf and dumb); 2. Berson; 3. Lesavre (a first cousin of the father's deaf); 4. Maréchal; 5. Margottin (the mother had her first child at 34 years of age); 6. Fouquet (the mother ill during pregnancy). Six in 315 give about 2 per cent.; in 124, about 5 per cent.; in 95 (M. Boudin's own number), rather more than 6 per cent. How, then, can M. Boudin explain even by his own figures the declaration that there are at the Paris asylum in every 100 inmates "16.41 who are the offspring of marriages between first cousins?" M. Boudin has evidently made a mistake between first cousins and the issue of first cousins and others, who are represented above by 11, more exactly by 7. Let us see how this number can be analysed:—

Cousins who are children of first cousins	-	-	-	-	-	4
„ of the 4th to the 7th degree	-	-	-	-	-	3
Persons <i>supposed</i> to be relations by the similarity of name	-	-	-	-	-	4

11

It will be granted me, I hope, that the 7 last cases are of no value; as to the first 4, I choose them simply because marriages between the issue of first cousins are not comprised in the official statistics. We have, then, only to take account of 6 + 1 of children really born of consanguineous parents, among a total of 315 records. That will be about 2 per cent. Now, I found *at Paris*, 1.4 per cent. of marriages between first cousins, and I believe that I am right in thinking that the proportion is much greater for all France than for Paris alone. It may be equal, according to my ideas, to 3, 4, or even 5 per cent. In some places it is 8 per cent., and occasionally above this number. In taking, then, the mean of 2 or 3 per cent., I believe I am under the real number, and this mean is precisely equal to the proportion of consanguineous children in the asylum at Paris.

The difference in the result of M. Boudin's inquiries and my own arises from the difference in these inquiries: I have only admitted into the question marriages between first cousins, and the weakly issue of these marriages; I have proved the inaccuracy of the records of consanguineous marriages; I have rejected the elimination of those deaf-mutes whose infirmity has only been established after their birth; it is for you to judge if I am deceived by following other errors than those of our learned colleague; and whatever opinion M. Boudin may have of my criticism, I beg him to be indulgent on all I have been able to say touching the distinction between deaf-muteness of birth, and that which happens afterwards; for it is himself who has set me the example on this point. In fact, whilst he has endeavoured to determine the number of the deaf-mutes, who, in France, owe their origin to consanguineous marriages, he fixes its proportion at *one-fourth*, not one-fourth of the number of deaf-mutes *by birth*, but at one-fourth of the *total* number of deaf-mutes, a number he values at 36,000.*

In order to complete this analysis, I should like to be able to speak now of M. Brochard's statistics—statistics which rely on the same data as those of M. Boudin, and which are even more summary, since they consist only of three lives. As to those attributed to MM. Landes, Piroux, and Périeu, let us see what can be said of them.

The *Impartial* contains the very interesting inquiries of M. Landes, now a professor at Paris, upon the deaf-mutes in the asylum at Bordeaux. Now, M. Landes has found 24 married relations (as distant as the fourth degree) in 287 *families*, whose children have been inmates of this asylum, from 1839 to 1859, which gives a proportion of about 8 per cent., which ought to be reduced if we take no notice of any except *first cousins*. M. Boudin, in speaking of 24 consanguineous *deaf-mutes*, has committed a double error: believing that it regarded consanguineous deaf-mutes, he placed the number opposite *deaf-mutes by birth*; now, I repeat, it had reference to 24 consanguineous *families*, not to 24 deaf-mutes. The statement attributed to M. Landes, that there were at Bordeaux 30 first cousins in 100 deaf-mutes, reposes then on a double mistake, which it would have been easy to avoid.

I had the pleasure of speaking to M. Piroux last year, on the subject of his remarkable institution at Nancy. At that time, M. Piroux had made no inquiries, and could give no information about the question I was studying. Since then, M. Piroux has published a statement which referred to 612 cases of deaf-muteness received at his

* Dangers des unions consanguines, p. 40, 1862.

establishment from 1828 to 1863. He arrived at his conclusions by *retrospective* inquiries, comprising in them the most distant degrees of relationship, so as to obtain 15 and 17 per cent. as a maximum. Why then does M. Boudin speak of 21 per cent.? But if we take from Piroux's documents the relations beyond the third degree, we only find, in thirty-five years, forty-two who owe their origin to parents who are consanguineous, which is a little more than 6 per cent., the number at which we can in France approximately value the marriages between relations.

As to M. Perrin (Lyons), I begged Dr. Jantet, a distinguished physician of that town, to ask him about the statements mentioned in M. Devay's book, and pointed out in M. Boudin's essay. Now here is M. Perrin's answer, "I have never made any statement on the subject of deaf-muteness caused by consanguineous marriages. They were merely some verbal data which I gave to M. Devay. I had hardly remembered the fact myself. Besides, no register of this establishment indicates cases of deaf-muteness caused by marriages between cousins."

So this is what we have to say concerning M. Boudin's numerical data, in name of which some authors have dared to write that it was not any longer possible to contest seriously the dangers resulting from consanguineous unions! As if even one of the figures could be considered as important! As if even one of M. Boudin's disciples gave himself the trouble of examining into his researches! And when we consider that these tables are copied from one book to another, without explanation, with the title of an authentic document, unopposed and incontestable, we cannot be astonished at the slowness with which science progresses; and we are obliged to regret that the spirit of examination and criticism is not in our days held in more honour.

In continuation, I believe I have shown that the statistics gathered by M. Boudin concerning the consanguineous origin of deaf-muteness are entirely incorrect, because the numbers which he has announced are *all* inaccurate or wrong; that is to say, the number of marriages between first cousins, which is not 0.9 per cent., but much higher, and of which we are at present uncertain; the figures determining the number of records concerning deaf-muteness from birth in the institution; those of the deaf-mutes of consanguineous origin, and consequently the conclusions drawn by M. Boudin from this last number, with those of marriages of the same nature.

One figure alone is right. It is that which concerns the number of the deaf-and-dumb in the Paris asylum proceeding from marriages be-

tween nephew and aunt; and this figure is 1. Whence could M. Boudin have discovered that the danger of producing deaf-and-dumb children from this description of marriage was equal to 70 per cent. ?

IV. INDIVIDUAL OBSERVATIONS: ENGLISH AND AMERICAN DOCUMENTS.

I have now to examine the numerous pathological facts which have been placed to the account of marriages between cousins. For these marriages do not only produce deaf-muteness, but also blindness, colours on the retina, "albinism", epilepsy, idiocy, mental aberration, sterility, scrofula, abortion, numberless deformities, children with six fingers (*sex-digitisme*), hare-lip, "all the predispositions", and even "red hair and freckles on the skin"! Most of these facts rest on one or more individual observations, more or less convincing, and even more confusing; so, in order to analyse in a methodical manner the question on which we are employed, it is convenient to divide the documents we are about to examine into two groups.

A. Facts which relate to observations concerning sickly children in whom is discovered a consanguineous origin—*the indirect method*.

B. Facts which relate to direct and individual observations concerning married relations—*the direct method*.

A. *The indirect method*. When we have satisfied ourselves that a patient is suffering from a disease or infirmity the origin of which is not recognised, we are often led to examine into the truth of some hypothesis concerning all the individuals who show the same peculiarities as the first one. Now, we cannot fail to arrive at an affirmative solution, whatever may otherwise be the supposed cause, if the observations are made on a great number of cases; for we are almost sure to meet with the hypothesis a certain number of times, and by this we are led to give a particular action, great or small, to the hypothesis, in the production of this disease. To explain my idea better, I will suppose that a pathologist has, in his own mind, attributed congenital blindness in a great measure to syphilis, and, in order to verify his theory, he asks the parents of the blind, who are under his care, if they have ever had syphilis. Now, I will suppose that in one hundred cases he is answered twenty-five times in the affirmative; he hastens to declare, with the usual reservations, that in one-fourth of the cases of congenital blindness, syphilis has appeared to be the true cause of the infirmity.

Allow me to proceed farther, and to suppose that we have to do

with a very honest, but obstinate theorist, impelled by the very laudable desire of recommending future parents to avoid syphilis. What will this pathologist do? he will forget the number of observed cases; he will publish his twenty-five observations of congenital blindness due to syphilis; his publication will provoke a hundred other communications of the same kind, and at the end of a certain time there will be a certain budget of facts collected which will prove, so far as evidence goes, that the most positive cause of blindness is syphilis in the parents.

Here, again, is another pathologist, who considers that the abuse of strong drinks is the principal cause of blindness; a third, who attributes it to the illness of the mother during pregnancy; a fourth, to the habit of sitting up late at night, etc. Each of these causes will verify itself a certain number of times among the parents of a hundred patients, and very soon it will not be the causes which are wanting for ailments, it will be the ailments which are wanting for the causes!

This method, which has a prodigious effect upon persons who are unaccustomed to scientific argument, has been employed with success in the question of consanguineous marriages. Whenever anybody saw a deaf-mute, he endeavoured to find out about the relationship of the parents, and these researches were sent to the Academy of Science, or to our Society, and published in different collections of reports. Such are most of the facts recorded by MM. Devay, Forestier, Duteval, de Ranse, Trousseau, Ponsin, Rizet, Balley, Broclard, Chazarain, Chipault, etc. I take sixty to eighty as the maximum number of cases determined by ten or twelve physicians.

There is much to say about these facts alone; and in my former work, I showed that, in the great majority of cases, they had neglected to mention circumstances which would have rendered their observations useful, not only to the theory which is being considered, but for etiology in general. The small number of cases observed, according to scientific rules, evidently admits of no conclusion. I will allow, for a moment, that a hundred cases have been collected in which children tinged with disease have been born of consanguineous parents in good health. In these hundred cases, they reason thus: nothing explains the illness of the child excepting one circumstance alone, the consanguinity of the parents; therefore, consanguineous parents bear weakly children. What can be more absurd? what more specious, or more "showy" for the generality of people? Take a certain number of deformed children and choose from them one hundred whose fathers, otherwise well formed, have brown hair or any other

distinctive mark. You say, at the same time, that you have no reason to give for these deformities (this is the rule), and add, one particular feature is common to all these patients: their fathers have brown hair; hence men with brown hair have deformed children! Your etiology will be as well founded as the foregoing.

I shall be told that there is no connection between brown hair and consanguinity. In fact, one cannot see by what reasoning brown hair can lead us to gibbosity or club-feet. So be it; but who would not be curious to ascertain by what path consanguinity can, *ipso facto*, lead to *surditième*, or deaf-muteness? For we must insist upon this point, they do not accuse inheritance combined by the union of two diseased individuals, of near relationship, and bordering on some pathological result; which would be a theory worth examining, because it refers to an important part of physiology—inheritance; no, they desire that consanguinity should produce these terrible effects in the absence of all inheritance, in spite of inheritance! They wish to introduce a new law into science. We have seen with what trouble, and at the end of how many years, the French physicians have been able to gather a few cases of infirmity among children of consanguineous parents. It has not been the same, however, in America. There Mr. Morris has observed 4018 children of consanguineous birth, among whom he has found 2580 cases of deformity.

It is prodigious: Mr. Morris must have passed his life running after consanguineous children, to have been able to “study” 4018 cases! M. Boudin mentions this. It is true, he does not mention his authority,—a fact which takes away from the statement, not, indeed, its miraculous character, but all its value. Nobody has, besides, been able to inform me of Mr. Morris’s scientific position. M. Devay has quoted statistics even more extraordinary than these. “In Ohio,” he says, “among 3,900 children (consanguineous), 2,490 are afflicted with serious deformities or complete idiocy.” The authority for this document is not any more indicated than that of the foregoing one in M. Boudin’s work: three of our colleagues have endeavoured to discover it, but without avail. I have denounced this extract as unworthy of credit, and nobody has relieved it of this imputation. But I render this justice to M. Boudin, that, in the new edition of his *Essay*, he has not reproduced it. The same fate is doubtless reserved for the *magnificent* statement made by Mr. Morris, who, besides this, says absolutely nothing. I refer on this point to what I stated above.

2. The direct method. I give this name to the method which consists in observing *directly* consanguineous parents and their offspring.

It is certainly superior to the former. It would be excellent if it were possible to examine *every* consanguineous marriage, in one or many departments, and to calculate the number of infirm children born of these marriages. We could compare the proportion thus obtained with that which would result from the examination of all other marriages; if the possible excess from one side or the other could not be connected with any other cause, and if a like result was obtained in one or many departments, the question would be settled. Nevertheless, it appears doubtful to me that such a work would be possible; whilst the plan proposed above, which is quite as demonstrative, is certainly quite easy of execution. But the statistics which have been published are far from offering this guarantee; they seem to us to be tainted with a radical fault. It seems, at first sight, that if we could compare a hundred marriages between first cousins with a hundred ordinary marriages, the examination of the respective registers of births, still-births, invalids, and deformed children, would bring us to some result; and yet the least reflection will show the fallacy of this; for one can at will choose a hundred ordinary marriages whose issue may all be very healthy, or a hundred other marriages whose issue may be more or less sickly: the same with reference to consanguineous marriages. One can guarantee more than a hundred marriages without one case of a weakly child,—a method which makes such a path for the progress of a theory is thoroughly wrong. This is why the statements of M. Bémiss (34 marriages, and 193 children, of whom 47 are sickly) and of Mr. Howe (17 marriages, and 95 children, of whom 44 are idiots and 12 scrofulous) are of no value whatsoever. What would be said if I went to a child's hospital, and taking the names of the parents of the first hundred cases of deformity I may happen to meet with, should thence conclude that there are a hundred cases of deformity to *every hundred marriages*? However, in France the adversaries of consanguineous marriages have not been so happy as M. Bémiss and Mr. Howe. M. Devay has observed a hundred and twenty-one consanguineous marriages; although he does not mention the total number of children, let us consider them, according to the mean (3.5 children to each marriage), at 423. Now, M. Devay has only found thirty-five cases affected either by true pathological disorders, or by accidents which have destroyed the powers of generation. Among these 423 children born of consanguineous marriages, we should expect to meet with deaf-mutes, blind, idiots, etc., etc. Nothing of the kind. We find 22 cases of *sterility*, with or without abortion, 5 cases of club-foot, 1 case of anencephaly,

2 of hare-lip, 1 case of *ichthyosis*, 1 of *enchondroma*, 1 of *spina bifida*, 2 of albinism. We are thus a long way from 66 idiots and scrofulous patients among 95 children !

In continuation, M. Devay finds 35 cases of disease, or pathological accidents, in 121 marriages, and 423 children. I believe that this proportion is equal or inferior to that which we should discover in 423 children *not* born of consanguineous parents.

Among the authors who have chosen this direct method, some have *proved too much*; the others have not proved enough. They have established nothing definite against consanguineous marriages. Such is the balance-sheet of the numerical documents on the question now before us.

V. CONCERNING THE ARISTOCRATIC TYPE AND PURE BLOOD.

M. N. Pèrier, in his second paper ("Essai sur les Croisements Ethniques"), has treated the subject of the old noble class of society with too great skill for me to say much on the subject. He has shown, that, so far from offering disadvantageous conditions of health or longevity, the aristocratic classes are even exceptionally favoured: and when M. Devay quotes, as supporting his theory, the fact that out of 61 persons belonging to the most illustrious families of Dauphiné, who composed the company of Bayard's men (*hommes de Bayard*), there remain only 5 descendants, he gives to these families a descent more lasting than is the average. Benoiston de Châteauneuf has besides established that when noble families degenerate, it is *because* they degrade themselves by marriage. If Dr. Nott (quoted by M. Boudin) pretends that the reputation of the House of Lords in England would have been extinguished long ago, "*unless the crown had continually created new lords from among the robust sons of the people,*" Dr. Nott and those who quote him completely misunderstand the conditions under which an English citizen is raised to the peerage. We can affirm that, for a very long time, account has been taken of only two circumstances as deserving this dignity—long and useful services and personal fortune. Do we ordinarily designate by the name of "*robust sons of the people*" the magistrates, the generals, the learned men, the rich landowners, who fulfil the conditions required for a peerage? Dr. Nott's remark is then quite incorrect.

Besides, one must be endowed with very little of the spirit of observation, not to perceive the great part which in our days is played in various lands by the descendants of our ancient aristocratic families: in literature, in politics, in parliamentary life, in the navy, in the

army, even in science, and this in spite of the hostility of the age, the destruction of fortunes and privileges, in spite of alliances with citizens. We can say, without hesitation, that wherever we find dominant and privileged classes who know how to maintain their exclusiveness, they know also how to maintain their dominion. To give a lively example of it, how can one suppose that in those colonies where the negroes are governed by white men, these latter could maintain their power if they intermarried with the blacks? I hope, besides, to bring forward some decisive facts concerning families of consanguineous origin in ancient Greece. I limit myself here to the declaration, that having consulted many Englishmen concerning the personal valour, appearance, and beauty of members of the English aristocracy, they have declared that they are distinguished from the rest of the nation not less for their physical valour than for their intellectual strength.

But the question takes even larger proportions than these. We have passed from individuals to families, from these to classes, from classes to races, and this extension given to our discussion is not only logical, it is necessary; for, to say the truth, the only doctrine we now sustain is the superiority of pure races over crossed breeds.

The superiority of individuals of consanguineous origin is but a mediate, remote corollary, to the superiority of pure races. And since a fact studied in the case of an individual is surrounded with elements much more complex than it is in the case of a group, it follows that we can affirm concerning a collection of individuals a law which, as regards the individual himself, is somewhat rigorous. Exceptions, in fact, disappear and are confused in the collection of general facts; but, if we neglect these, we risk the deduction of false rules, established by an insufficient number of particular facts. This is why I do not accept the reproach of *confusion* with which M. Boudin charges me in the last edition of his *Mémoire*. I have endeavoured to prove that ethnic cross-breeding, so far from favouring its issue, engenders mixed breeds inferior in proportion to the physiological differences between the crossed races. "M. Dally," says M. Boudin, "confounds here two things destitute of all joint connexion,—cross-breeding in families, and cross-breeding in races." On this point I appeal to the opinion of my colleagues: far from confounding these two points, I render one subordinate to the other.

A pure race is an exalted result of primitive consanguinity. Two couples who unite indefinitely their branches, without marrying out of their circle, ought to constitute a race. The alliance remains con-

sanguineous so long as no fresh element establishes a cross; it is when we apply this latter term indifferently to races and families that we cause confusion. The alliance of two families of the same stock is a consanguineous alliance, whatever may be the distance of the relationship; when these stocks are as distinct as are, for example, the Negroes and the native Americans, one has an instance of a *mixed breed*; we have an instance of hybridity when the anatomo-physiological differences are so considerable as to make us consider the two generations as different species; and further, when the issue is not fruitful between them from the first generation. Such is the probable, but not sufficiently established case, of the Anglo-Saxons on one side, and the Australians and Tasmanians* on the other.

I willingly admit, however, that the definition of the terms *consanguineous*, *cross-breeding*, *mixed-breeding*, *hybridity*, leave much to desire, and that the sense of their meaning is far from being established; I admit, besides, that the multiplication of European cross-breeding renders necessary a special designation, in order to distinguish the alliances of relationship from consanguineous alliances, properly so called; and in the absence of any special term, I admit that we can without inconvenience, restrict the signification of this latter term so as to call *consanguineous* marriages, marriages of relationship. But with regard to this concession, we must be prohibited from calling every marriage, which is not consanguineous, a *cross-marriage*; for a cross-marriage is understood of two individuals of distinct races. Clearness of expression, this condition of all scientific harmony, is completely wanting, it may be seen, in our honourable opponents.

These explanations having been given, I return to the subject of pure races. We have seen that M. Boudin denied any connexion between the question of races and that of families. "As to the danger there is in a brother marrying a sister, or a father his daughter, it does not follow at all that there ought to be any benefit when an Englishman marries a Tasmanian, or a Frenchman a Hottentot." This inference is very amusing; we give our opponents credit for its invention, which cannot fail to cover them with ridicule. I shall not care to profit by the liberty which such a thing offers me; and I shall not forget, I hope, the respect which I owe to a colleague who has given so many proofs of his love for science. But am I wrong in thinking that M. Boudin, even in the title of his essay, admits the connection of the question of races with that of families?

* See on this point Dr. Nott's *Types of Mankind*, p. 572; and M. Broca, in the *Journal de Physiologie*, p. 654, 1860.

In the first edition of his paper I read, "necessity of cross-breeding in the human race;" in the second, "necessity of the cross-breeding of families." If cross-breeding in families is necessary, the same thing among races is also necessary; and if "crossed" families are superior to pure blood, why refuse the same superiority to crossed races? Is a race anything more than a large family? Not to suppose that a creation of millions of human beings was produced at once, has not a race its origin in a family, which had for its own origin two persons? And till the day when this family is *crossed*, who can say if the theories of MM. Devay and Boudin are correct? who can say what it has engendered, deaf-muteness, blindness, cretinism, idiocy, hare-lip, etc.? Cross-breeding has happily come to remedy all this, and from this day the superiority of the new race is dated,—this is what our opponents must admit, if they wish to be logical. However, those who believe in the unity of origin of the human race, ought to find themselves in some degree embarrassed in establishing the first *cross*; and those who bring forward sterility among the inconveniences of consanguineous marriages, ought to be astonished at the prodigious multiplication of mankind.

Besides, it is quite recently that our eminent fellow-member thought proper to separate the cause of pure races from that of pure families; his predecessors and his disciples accept all this connection—quite fatal to his own theory. M. Devay, in the answer which he did me the honour to dedicate to me, has said nothing which could make one think that he rejected it. But he has left without refutation the arguments which I have drawn from the inferiority of crossed, half-bred, or hybrid races. M. Boudin, who had no motive in answering on this point, since the two questions have no connection in his eyes, has, however, taken the pains to oppose me with several extracts from the writings of Hombron, D'Orbigny, Lallemand, and Levallant. Relying myself upon the authority of Jacquinet, Nott, Van Amringe, H. Smith, and Broca, I have urged that the half-breed between blacks and whites were probably sterile between them, and in the absence of all cross-breeding in return, beyond the third or fourth generation. M. Boudin answers that, according to M. Hombron, "marriages between mulattoes and mulatto women are extremely fruitful." Now the word mulatto is understood to be the *first* half-bred generation, and not the third or fourth. The extract from M. Hombron has, therefore, nothing to do with the question. The same may be said of the extract taken from Levallant, who asserts the same regarding the Hottentots and the whites.

There remain D'Orbigny and Lallemand. The first speaks of cross-breeding between the "various American races" (*id est*, of the same race), which he considers superior to the two types *mixed*. It is a simple *mélange*. Lallemand quotes the families formed by Germans married to women of the South of France, as being very beautiful and healthy. This is the opinion of Lallemand; it is important, but it must be noticed that he speaks of a cross between two very similar races. And while we are speaking of this author, I hope M. Boudin and his copiers will allow me, for the sake of the learning of their successors, to restore an important part of a sentence, the absence of which is not even indicated in the abstract which he makes from it. Lallemand said: "When alliances are too much restricted, they tend to redevelop the predominance of their distinctive characters, and finish by breaking the equilibrium necessary for the normal development of the constitution." M. Boudin has omitted the italicised words—words very important, too, since they show the reasons for which this learned man disliked consanguineous marriages: the reason of excessive or morbid inheritance. Now one knows that, very far from admitting that it is in virtue of the laws of inheritance that consanguinity is dangerous, MM. Devay, Boudin, and others wish that it should be *ipso facto*, in the absence of all morbid inheritance, and *in spite of inheritance*, that it should produce its terrible consequences. I hope that I have restored to M. Lallemand's extract its true signification.

I return now to pure races. If M. Boudin rejects the connection of the question of races with that of families, of what value then are the observations he has made on the Jews for his actual theory? Why these statistics and extracts? Recognise the joint connection, or suppress these superfluous documents. But I understand it is not so much that the Jews, as a pure race, may be subject to collective infirmities, but because marriages between very near relations are more frequent with them than with Christians.

Such is not the opinion of the chief rabbi at Paris. This ecclesiastic remarks that, "between cousins, alliances are everywhere permitted with slight hindrances from canon law, which are made to disappear without any difficulty." All the world is of the opinion of the rabbi. All the world knows that, since certain great historical events which have not contributed to the prosperity of the French nation, the Roman Church has never refused to grant the necessary canonical dispensations. M. Boudin, however, appears to contest it. "It is merely a personal opinion of the chief rabbi, and one which

seems very questionable." Very well; let M. Boudin question it! It is the case of applying the numerical test. It is, then, a pure supposition of M. Boudin, in considering that consanguineous marriages are more frequent among Jews than among Christians; and, lest our colleague should come at last to accept the connection which he rejects, he is no longer authorised to use facts for his cause which he can lay to the account of the Jewish race. These facts belong to the question of the value of pure races, and not to that of relationship marriages.

Now what are these facts? It is asserted that "the Jews have lost the strength and beauty of their race." "Nobody," says M. Devay, "denies this fact." This is incorrect, for the fact is denied: if it had been proved, it would besides be susceptible of other explanations. It might be said that it is precisely since the barriers have been lowered which separated the Jews from European Christians, that this decay has been discovered; and this explanation would be quite favourable to the question of pure races. And more, we may remember that this singular development, under all latitudes, of this race, so cruelly persecuted both by Romans and Christians, has been effected by means of a forced consanguinity: now, since the decay of a race is a very common historical phenomenon, the causes of which are extremely complex, complete ignorance is shewn in attributing it to a cause which is not found among other degenerated races. In every case, the Jewish race, standing alone in the midst of European movements, has shewn an unequalled vitality. This example, then, is unhappily selected; it is among those which the partisans of consanguineous races like to quote, in relying on the inquiries of M. Boudin himself. But this decay is so problematical, that it is, I believe, useless, to insist on it. That which is less doubtful, is the fact that the Jews furnish, in Germany, a larger proportion of lunatics than are found among the Christians. In fact, it seems from tables produced by M. Legoyt, that there is one lunatic among 908 Romanists, 967 Protestants, or 514 Jews (Bavaria). Analogous figures are produced for Hanover, Silesia, and Wurtemberg. These tables are of German origin: M. Legoyt, so far from wishing to prove nothing from this, adds, "Must we see in this frequency of lunacy among the Jews an influence of race, or merely the consequence of this fact—that they inhabit those towns, and exercise those professions, the most exposed to economic crises? Must we see there, like Dr. Martini, the influence of the fact that marriages of near relationship are more numerous among the Jews than among

Christians? Ought we, perhaps, to admit the concurrence of these three causes in the production of this phenomenon?"

If the German tables are correct, it is certain that the above-named cause is much more probable than the others. We know, indeed, that towns furnish a larger contingent of lunatics than the country; and we know, also, that the professions generally followed by Jews are those which, beyond all proportion, predispose in the highest degree to mental aberration. Such are the artistic, financial, and learned professions. Unhappily, we do not possess in France any document which would allow us to check the German statistics. We do not even know exactly the number of the Jewish population of France.

Nevertheless, a Berlin physician, M. Liebreich, has drawn up at the deaf-mute asylum of that town an overwhelming account, not with regard to consanguineous marriages, which are not more frequent among Jews than Christians, but with reference to the Jewish race. Among 223 deaf-mutes, born at Berlin, M. Liebreich has found 23 Jews; and in the total population of 341 deaf-mutes, 42 Jews. Whence it follows that, whilst the Jewish population of Prussia only represents, according to M. Boudin, the sixty-second part of the total population, the deaf-and-dumb Jews constitute about the eighth part of the total number of the deaf-and-dumb in the asylum at Berlin.*

Far be it from us to doubt the scientific honesty of M. Liebreich; but when foreign statistics reveal to us a fact so strange and so contradictory to that which we can prove in France, we can only accept his statements with a great deal of reserve. We have proceeded in the same manner with the statistics offered by M. Boudin, whatever opinion we may have of his good faith; and it will be seen that we have done right.

The chief rabbi has told us that the Jewish population of Paris has

* In M. Boudin's first edition, the words "223 deaf-mutes born in Berlin", did not appear in the text. It was merely a question of the total population, 341. I have, then, rightly objected that the inmates of the Berlin asylum consisted in part of Jews coming from all parts of Germany, and that it was not right to take the number 42 in order to compare it with the Jewish population of Berlin. M. Boudin (and after him M. Chipault, who, without recognising my work, has contented himself with copying M. Boudin) asks me if I admit that a person can be born at the same time at Berlin and in some other place? I will content myself with answering MM. Boudin and Chipault that I am not one ready to see a double meaning in an expression. In truth, there is at the foot of p. 14 a note, which corresponds to a false reference. If M. Boudin refers to this note, he ought to have said so. I spoke of the text, and I maintain that in this, it was not a question about the deaf-mutes born in Berlin.

raised itself to more than 25,000 souls: in this number there are not *four* deaf-mutes. The asylum at Paris, containing more than 200 of the same class, has only two Jews among them, or 1 per cent., whilst at Berlin there are nearly 13 per cent.; there would be at Berlin 27 deaf-mutes in 10,000 Jews, whilst at Paris, in the same number of Jews, there are only two or three deaf-mutes. One statement is here certainly in opposition to the other.

M. Boudin, in his answer to the chief rabbi, gives us a particular specimen of his way of understanding statistics. We have seen that the Paris asylum contains only two Jews, both coming from Bordeaux. Now, our ingenious colleague, admitting with the chief rabbi that there are in France 100,000 Jews, or one Jew among each 360 Christians (M. Boudin says one Jew among 360 Frenchmen, as if the Jews were not French), concludes that only one deaf-and-dumb Jew ought to exist among 360 deaf-and-dumb Christians. Unfortunately, there are only about 200 deaf-mutes in the Paris asylum. One ought only, then, to find there one "demi-Juif" (*sic*); now there are *two* of them! "The consequence is," says M. Boudin, "that the *real* Jewish contingent of deaf-mutes in the Paris asylum exceeds by four times the *legal* contingent."

M. Boudin is very particular: not always so in his calculations (for it is not 0·5 of a Jew he ought to find, if the Jewish contingent were *legal*, but $\frac{1}{2}\frac{1}{6}$ of a Jew—0·55), but in his appreciations. What are statistics worth when thus understood? If M. Boudin had only found a quarter of a Jew, would he have said that the real contingent was inferior by one-half to the *legal* contingent? and if the observation had been made before these two patients came from the Bordeaux asylum, must we conclude that the Jewish population furnishes four times less deaf-mutes than the Christian population? Besides, M. Boudin is not quite "up" on the subject of the Jews of the Paris institution. In the first place, they were not deaf-mutes from birth; one became so at two years of age, the other at four years. Now, M. Boudin strikes these cases out of his statistics, and reproaches me for not admitting the justice of doing so. Then why speak of the two Jews in question, who have become deaf-and-dumb long after their birth? In the second place, the parents of these two Jews (there are three of them now) have *no* tie of consanguinity between them. So that, in truth, there is not in the Paris asylum even the least fraction of a Jew of whom M. Boudin can take notice in his statements.

I regret to be obliged to enter into such details; but we can only

obtain a fair idea of the value of such statements by examining them minutely. And, to finish with the subject of French Jews, I may remark that, if there are in Paris four deaf-mutes in 25,000 Jews, the proportion is less than that of the entire population of the department of the Seine, where, according to the official reports, there is one deaf-mute among 4,694 inhabitants; equal to about five in the 25,000. M. Vaisse, chief of instruction in the asylum at Paris, has done me the honour to write to me, and give me important information; and he adds that "the Paris institution has only brought up a very inconsiderable number of Jews. *It has sometimes contained one or two, and often none at all.*"

We see, then, that it would be advantageous to give more authority to M. Liebreich's statement by examining it carefully. Now, if it is verified, we shall have a curious fact before our notice, and probably, a fact concerning a *race*, not with reference to marriages between cousins, which, we repeat, cannot be more frequent in Prussia, where the Jewish population is numerous, than among the Christian population. But why has not M. Liebreich inquired into the relationship of the parents of the 42 deaf-and-dumb Jews at Berlin? This forgetfulness astonishes us on the part of an adversary to consanguineous marriages. If, in fact, a large proportion of the parents of these 42 Jews were blood relations, we should certainly have been informed of the fact. Perhaps, as at Paris, they have not been able to prove a single case of consanguinity. At all events, we have the right to presume that it is so.

But who speaks of the degeneracy of the Jews? Who produces foreign papers which seem prejudicial to the healthy condition of the race? It is the author of those ingenious works on the "non-cosmopolitanism" of man; he who endeavours to show that the Jews can perpetuate themselves in all latitudes, that their population has doubled in fifty years, that the mortality among their children of tender years is less than among others by more than one-third in some countries, by one-half in others; who, in fact, would make us conceive the most unbounded hopes for the Jewish race.

We have already said too much about the Jews to permit us to broach the subject of the value of other races, more or less pure; a question which sooner or later must be discussed; for there is not one which is grander or more worthy of our anthropological studies. In the meantime, I commend to the perusal of my opponents the following extract from M. Gobineau's work—a work of great importance, too—*Essai sur l'inégalité des races humaines*. "I think, then, that

the word *degenerated* as applying to a people, ought to signify, and does signify, that this people has no longer the intrinsic value it formerly possessed, since there is no longer the same blood in its veins, and the successive "alloys" have gradually altered its value. In other words, with the same *name*, it has not preserved the *same race* as its founders; so that a man of the decayed period, what we call a *degenerated* man, is a different person, in an ethnic light, from the heroes of the golden days of the race. The heterogeneous elements which henceforth predominate in him make up an entirely new nationality, and one unhappy in its originality: he now only belongs to those he called his ancestors, in a collateral line. He will in the end die out, and his civilisation with him, in the day when the primordial ethnic element is found to be so subdivided and overwhelmed by the mixture with strange races, that the virtuality of the element will not henceforth be able to act with sufficient power."*

VI. FACTS FAVOURABLE TO HEALTHY CONSANGUINITY.

I have hitherto restricted myself to the criticism of the facts which have been brought forward as unfavourable to consanguineous marriages. I shall now have a good many observations to offer which are sometimes negative in regard to the asserted dangers, and sometimes very favourable to these unions. I have, in fact, gathered together more than thirty cases of this order, comprising about 100 healthy children: these cases have been pointed out to me either by physicians, or by persons who know nothing about medicine, to whom, in general, I have not communicated the design of my researches. But what can these facts signify? Will they escape the criticism which I have myself made on the facts stated by my opponents? Assuredly not. I could collect a thousand of them; but that would not help me. What we want are *comparative* reports, and that is why M. Boudin's method, *when properly applied*, is an excellent one.

I have also collected some pathological cases among consanguineous children. Three of these cases come from a friend who acknowledged himself that there is still much to describe concerning hereditary maladies, but who has not been able to give himself up to these researches. One of our colleagues, Dr. Defert, has been more fortunate; he has been able to observe two cases, one in his own family, the other among his patients. The first case has reference to a person who marries a woman with whom he has no tie of relationship. He has two children, who both die. Having become a widower, he mar-

* Journal of the Statistical Society, Paris, 1853, vol. i, p. 9.

ries his first cousin, and as issue of this marriage, he has one healthy girl, who is now of a "certain age." In a second case of marriage between first cousins, the young wife had three miscarriages, one after the other, each at six weeks. We should be inclined to put this case to the charge of consanguinity, if we were ignorant of the fact that the young woman had been constantly liable to dysmenorrhœa since puberty, and of this character too, that she had at every return of the menses a considerable uterine congestion, and finally uterine hemorrhage. We see how difficult such a study is!

It is not my intention to speak of the thirty cases which I have gathered together; if I have quoted these two, it is because they were particularly observed. But I cannot, however, omit the fact that I have for a long time been able to watch a marriage between first cousins in a Russian family; one of the persons is afflicted with a scrofulous affection which has caused some very severe disorders; his wife, although naturally of a good constitution, is far from being well, but from entirely accidental causes. They have had five children: only one has been delicate in its infancy: at present they enjoy the best possible health, and they have passed the most critical periods of their first youth without any accident. They have, in fact, much better health than their parents. We notice, besides, a considerable number of consanguineous marriages in this family: all with excellent results.

The documents communicated to the Academy by Messrs. Bourgeois and Sequin are more conclusive than the preceding facts. We know that M. Bourgeois has brought forward the history of his own family, in which 68 marriages, all of them "overburdened with consanguinity", have produced excellent results. M. Sequin has supported the conclusions of M. Bourgeois before the Academy of Science, and he has given the history of ten consanguineous unions between his family and that of Montgolfier, without one case of a weakly or deformed child.

Our colleague, M. Lagneau, whose scientific mind we all know how to appreciate, has quoted to us the example of the families P—— and N——, "whose members, after having been united eight times among one another in the space of eighty-seven years, from 1694 to 1781, have still at the present day healthy descendants in this country."

Again, a distinguished pupil of the Paris hospitals, M. B——, has communicated to me an analogous case drawn from his own family. I here give a copy of his note on the subject:—

"It seems, from information which has been handed down to me

by my family, relating to a period of about one hundred and fifty years (*i.e.*, counting from the great grandfather of my father), that five generations have married among their first cousins: the degree of relationship has never descended beyond the *first cousins*, excepting in *two cases*, where the *daughters of first cousins have been married by their second cousins*. These five generations have contracted a certain number of marriages which I am not able to particularise, and in which the mean number of children has been 3 or 4. The total number of branches as direct as collaterals has been 120 to 140. There has been no idiot or deaf-mute met with. Two females only have died of consumption; one without any appreciable cause, the other from catching cold. One only has been seized with senile insanity at the age of 68, three years before her death. No predisposition, except the rheumatic predisposition common only to a few individuals. My family has included many physicians, who, although imbued with prejudices against consanguinity, have themselves judged of it by its results, and have only been able to encourage it. I may add that the number of "branches" is the more surprising since a great number of them have devoted themselves to a life of celibacy, or have made religious professions."

I have particularly copied this note of M. B——, and have given it literally. He did not wish his name published, and is going himself to marry his first cousin.

These three facts are, besides, the more remarkable; for if consanguineous marriages presented any dangers whatever, it should certainly be in these cases of consanguineous unions, multiplied between two families. Well established facts of this description are worth a hundred contrary facts; for we must not forget that we only think of collecting observations in which there is something unusual, and accordingly, the ailments of consanguineous children are very quickly quoted and requoted, while consanguineous marriages, which have nothing extraordinary about them, are forgotten. One more important remark for the sake of criticism, and it is, that isolated observations concerning the diseases of consanguineous relations prove absolutely nothing, for these diseases are not special to these individuals, it is only their *relative* proportion which can prove anything. On the contrary, isolated observations on consanguineous marriages are inconvenient, since their offspring prove that the dangers are illusory. This difference, which seems a paradox, may be illustrated by the following example. If I place two first cousins in an island, and at the end of several generations the island is found peopled without having one case of birth infirmity, I have the right to declare that in this particular case the

consanguinity of the parents has had no bad effect. But if I saw deaf-mutes appear in this same island, I have then no right to accuse consanguinity of this; for, in the first case, the demonstration of my conclusion is complete, *ipso facto*. In the second case, there is no possible demonstration; in fact, other reasons than consanguinity may have caused the appearance of deaf-muteness; and I can choose one of them according to my own fancy—according to my own particular ideas.

This example leads me to consider a new description of proofs, invoked one after the other by the opponents and defenders of consanguineous marriages. I wish to speak of certain groups of individuals, who, by reason of various circumstances, such as geographical position, traditions, professional, social, or religious differences—are isolated, and almost forced to contract marriages of near relationship. In certain small countries the aristocracy are of this class; but we will not return to this subject—we gave it our former examination. There is room for making, on the subject now before us, some researches among the islands on the French coast, at the same time being careful to guard against any local influences which may have a hand in the production of disease. We speak, be it well understood, of proportional and comparative researches, for isolated facts are of no importance. In the Oceanic islands, a number of tribes, who certainly do not shine by the beauty of the forms, are quoted from the notes of Hombron, Duroch, and Lesson, and these quotations having been made, it is pretended to have proved that in *every place* where alliances are circumscribed, consanguinity causes great ravages! The author of these quotations has not even taken the trouble to compare the congeneric tribes; he does not say a word about the form of marriage, and yet he pretends to have *proved* something!

For want of neighbouring islands, let us remember that M. Périer has mentioned, according to M. Yvan, the beauty of the inhabitants of the island of Réunion, who descend from a few couples only, and yet have known how to preserve their purity of blood,—for most of the French colonies, when they are prosperous, offer the same character; in fact, we may remark even in France itself, isolated spots or isolated groups of individuals in the heart of a mixed population; there are very few travellers who have not noticed it, and this has never been with a view of establishing their degeneracy. Among this number are most of the little fishing villages on the coast of France, where the sailor population lives side by side with the agriculturists without ever marrying among them. Such is Pauillac

(Gironde), about which my friend, Doctor Ferrier, has written me a letter, from which I take this extract:—"Pauillac contains 1,700 inhabitants, most of them are robust, vigorous, and well-made sailors; the women are renowned for their beauty and the clearness of their complexion. There is, perhaps, no other place in France where consanguineous marriages are more frequent, and where the case of military exemption is more rare." Such, also, is Granville, where the maritime population, quite distinct and isolated, are a very fine set of men; Arromanches, a little village of less than 100 fishermen, who have very little sympathy for "earth-workers;" such is, above all, Portel, near Boulogne, a village containing some hundreds of inhabitants, who are all allied among one another in the closest relationship, and who never marry among those whom they call "the shepherds" (bergers). Batz, in Brittany, is a commune containing 3,000 souls, about whom Dr. Voisin furnishes the following information:—"The nucleus of the population is composed of nine families. For a very long time the inhabitants of the town have married amongst one another, except in very rare instances. In that part of the country it is a title of nobility to belong to the town of Batz, and it is rare to hear of unions with the people of Croisic or Pouliguen. The inhabitants of Batz are either workers in salt-pits or fens, and pass their lives in the open air, near the sea, in the salt-marshes; their chief labour is the preparation of the salt; both men and women are extremely robust, of a good height, and perfect health. Their hygienic condition is admirable, and misery is unknown in the country. I find, besides, from my notes, that there are very few of the inhabitants who are relatives beyond the sixth degree, for the most part their relationship is of the third or fifth degree: the children are numerous, and average from two to eight for each marriage."

M. Gubler, in a recent journey, has been able to establish the extraordinary beauty of the inhabitants of Gaust, in the valley of Assau, in the midst of the Pyrénées. The custom of marrying relations is so inveterate among them that, before marrying an inhabitant of another commune, the young men of Gaust ask permission from the chief men of the place; and yet this little place contains barely two hundred inhabitants. Analogous facts are cited by M. Perier concerning the village of Uchizi, not far from Mâcon, and of the canton of Saint-Martin d'Auxigny, near Bourges. Our friend, M. Maximin Legrand has mentioned the same facts about the town of Ecuelles, near Verdun-sur-Saône; and I think that I could quote a hundred, perhaps a thousand, places in France which fulfil the same conditions.

In all this there is a special work to be done, which may demand many years of patience, which the Anthropological Society will be able to accomplish little by little, thanks to the excellent table of questions on the ethnology of France which has been prepared by our friend, M. Lagneau.

VII. HISTORICAL AND LEGISLATIVE DOCUMENTS.

We have more than once wandered from precise and contemporaneous facts: in order to pursue our work in historical order, we must extend the design of our researches, we must retrace the course of time, and, following our opponents in their superficial investigations, resume the analysis of legislative facts, or the traditional customs of a great many nations. But we know not where such a study, entered on conscientiously, may lead us; and the slightest examination of the documents produced in this system of inquiry by MM. Devay and Boudin, is sufficient to take from them the singularly decisive character which their authors wish them to assume. We may be allowed to make a few critical remarks on this subject.

We shall at once remark an error of judgment among our opponents. Thus M. Devay, like M. Trolong, makes much of the universal dislike of nations (and animals) for consanguineous marriages; confounding in one category the necessities of domestic morals which prohibit incest, and the metaphysical doctrines which interdict unions between cousins, our author cites the Hurons, the Iroquois,* and the Samoyedes, among the nations who have reprov'd and forbidden consanguineous marriages, and he relies on the universality of this opinion in order to prove its value. I do not insist on this confusion, common to my opponents, and which seems to consider *incest* and *marriage between cousins* as the same thing. But I note that M. Boudin is of quite another opinion; so far from considering the prohibition of consanguineous unions as an universal fact of *natural right*, he tries to establish "that among a great many nations of antiquity we find it *quite natural* that the father should marry his daughter, the son his mother, and the sister her brother";† and our colleague quotes, concerning this, a crowd of documents more or less authentic.

Now, in noticing this unfortunate confusion between incest of all

* The Iroquois, who in 1846 numbered 3,700, appear to have continually married among one another, according to Schoolcraft; and I cannot find any authority for their supposed dislike to consanguineous unions. Only one case of lunacy and one of idiocy are reported among them, and *no case* of blindness or of deaf-dumbness. (Tr.)

† Memoirs of the French Anthropological Society, vol. i, p. 510.



degrees and distant consanguinity, I leave to MM. Devay and Boudin the trouble of agreeing about this universal sentiment: I confine myself to proving that one ought not henceforth to receive any aid from an argument of this nature. The fact is that, according to the time and place, the laws which concern marriage, and in general all the acts of existence, are singularly diverse. To wish to appreciate all these laws at once, and to judge them, for example, according to our modern ideas, is to commit an error into which no clever man would be led, if prejudice did not impel him. History appears to us, if we have not the faculty of transporting ourselves mentally into the midst of past ages—history appears as a monstrosity, the most necessary laws as ridiculous or abominable, and there does not even remain to us the consolation of being able to admire one of the great men who have cast on the world the light of their genius.

I abstain, then, from mentioning this sort of violent accusation which M. Boudin's paper contains against the most admirable nations of antiquity. Supposing that the facts related by our colleague were well established as regards the Persians, the Egyptians, the Phœnicians, etc., we should not be authorised to conclude anything touching the morality of these nations. It is the same about the Greeks, the value of whose social system, thanks to which the integrity of race and duration of families was preserved at Athens as well as in Sparta, M. Boudin has not been able to appreciate. It is quite correct to say that at Athens one *could* marry one's sister; but we know in what horror the Greeks held these incests—a horror of which the tragedies of *Œdipus* and *Phœdra* have left us a dramatic memorial.

I hope to present to the Society one day a special paper upon consanguinity among the Greeks; and I will not, therefore, just now correct the historical and philosophical errors made by M. Boudin. Nevertheless, whatever reserve I impose upon myself, I cannot be prevented from denouncing to the Society this system of disparagement—of which the middle ages have left us a tradition—into which our colleague has been drawn. "At Athens as at Sparta," he says, "marriage was only looked upon in a sensual and animal view. Plato himself wishes that alliances between the best of both sexes should be more frequent, and between those who are inferior more rare. Lycurgus puts less ceremony into his opinion; he is astonished that ancient law-givers have not prescribed to man that which is practised among animals, 'finding for their dogs the best bitches, and for their mares the best stallions'. This is how they thought and practised in much-vaunted Greece, which they quote even now as a model of the

highest civilisation." And, to strengthen his quotations, M. Boudin goes back to Plato, in his *State or Republic*, and to Plutarch, in his *Lycurgus*. The quotation from Plato is correct, if we can call a fragmentary quotation correct. But I do not see how we can thence infer that "marriage was only looked upon in a sensual and animal point of view." Who does not know what the "Republic" was? An ideal system, a pure utopia, to which Plato has consigned his ideas upon the government of nations. Now a legislator who wishes to constitute theoretically a fine race, endeavours to find the means for so doing; and this is what Plato points out in the same chapter. "How," says he to Glaucus, "are marriages most advantageous [to the State]? It is for you to tell me. I see that you raise at your house a great many dogs for the chase, and many birds of prey. Do you take care about the breeding, and about pairing them? Among animals of good blood, are there not always some which are superior to the rest?" "Yes." "Do you wish to have all equal, or do you prefer to have the young ones superior to the rest?" "I prefer the latter."^{*}

This is what Plato *likes best*; and this is what makes M. Boudin consider that at Athens they only considered marriage "in an animal light"! Ah! if M. Boudin had read the whole of the *Republic*, he would soon have perceived that his opinion is not a Platonic one. Besides, if this is the animal point of view, the animal point of view has some good in it. And, if it led to the establishment of a race whose descendants would be the finest and healthiest of men, I should prefer even M. Boudin's "point of view", which ought to be taken without any reference to animality. Does M. Boudin, as a pure spiritualist, desire that children springing from persons of an inferior race should be more numerous than the offspring of the finest and healthiest? Does M. Boudin believe in inheritance?

Let us now come to Lycurgus. And first, let us remark that we only know Lycurgus through Plutarch, his historian; and that, instead of saying "Lycurgus puts less ceremony into his opinion", he ought to refer to Plutarch more or less of this ceremony of Lycurgus. But this reproach is quite a nominal one. A much more serious matter, is the fact that the quotation from Plutarch is incorrect; this may be proved by comparing the above-mentioned passage, quoted by M. Boudin, and the following paragraph, which I take from the *Life of Lycurgus*.† "So it seemed to him that there was something foolish

* Plato's Works, Aimé Martin's edition, vol. i, p. 07.

† Les vies des hommes illustres. Translatées par Jacques Aymot, vol. i, p. 92. Paris, 1604.

and vain in the laws of other nations respecting marriages; seeing that they put their best bitches and mares to their strongest and best dogs and stallions, by paying and beseeching those who owned the latter, and nevertheless keeping their women under lock and key, for fear they should conceive by others than those who were perhaps insane, unhealthy, or much too old." Thus Lycurgus is not *astonished* that the *ancient law-givers did not prescribe for man as they practised with their animals*. He blames badly assorted and unhealthy marriages; he shows that more is done for animals than for men; and, indeed, where can you find a legislator or a hygienist who looks with a favourable eye on alliances between the *insane*, the *unhealthy*, or the *aged*? and who does not prefer a marriage between young and healthy persons?

Never, perhaps, was marriage more honoured than it was at Athens or at Sparta, from whence comes to us almost all that Western civilisation contains that is either useful or beautiful, even to monogamic marriage. According to Plutarch, it was not possible to hear of an adultery at Sparta; and he must have lost the remembrance of Homeric antiquity, who can dare to speak of it in such scornful language. Allow me to quote to you two passages, one from Homer, the other from Xenophon, and you may well be surprised that any one can have spoken, on the subject of the Grecian race, in an "animal light". When Ulysses, after having been shipwrecked, besought the daughter of the Pheacians, Nausicaa, his eloquent prayer was terminated by a vow, and this vow gives us, as to the ideas the Greeks held concerning marriage, a notion which it would be difficult to reconcile with that given by M. Boudin. "May the gods fulfil thy desires, may they give thee a husband, children, and domestic happiness (*ομοφροσυνην*); for there is nothing in the whole world so touching as to see two persons united in love, who can govern their house with the same spirit."*

And also in after ages, Xenophon traced in his *Economic* a plan of conjugal life which no society in the world has yet equalled, and which ends with this excellent sentiment: "The most delightful of all joys will be, when you, having become more perfect than myself, shall find in me the most attentive of husbands; when, so far from fearing that age will rob you of my consideration, you will feel, on the contrary, that the more you show yourself a good mistress and manager, so much the more you will see the respect of all the household increase with your years. It is not in this world *beauty* which

* Homer, *Odyssey*, book vi, 180.

really acquires the right of being respected; it is, indeed, virtues alone."*

M. Boudin, in his historical researches, has mercy only on Christians. "The Christian law alone," he says, "has remedied the evil by forbidding consanguineous marriages up to the fourth degree; that is to say, up to the children of the cousins of first cousins." If the Christian law *has* remedied the evil, it is the fact, without doubt; but we do not then see the necessity of M. Boudin's essay. The truth is, that the Roman Church is too wise, too charitable, too conciliating to maintain those prohibitions of another age which had more signification and force in a time of strife and propagandism, but which, at the present day, have no value in Europe. During the first periods of the Christian Church, each converted family dedicated itself to the apostleship, and marriage with strangers was one of the forms of this apostleship. By this means a new Christian nucleus was formed; and the success of these commands was so evident, that they acquired the force of law in the Church. This is easy to prove. St. Augustin, who lived in the fourth century, has clearly stated in the fifteenth book of the *City of God* the causes of this prohibition. He refers to the commencement of creation by one couple; and he says that when men multiplied, marriages between brothers and sisters were prohibited "for a very just reason, that of charity. It was in the most precious interest of mankind," he adds, "to multiply between them the bonds of affection, and, so far from concentrating these affections on one person, to divide alliances so as to embrace the greatest possible number in the social chain." And further: "Who can doubt that it is no longer proper to prohibit marriage, even between cousins? And not only for the preceding reasons, for the sake of multiplying friendly relationship, but also because it is a noble instinct of modesty, which, in the presence of those whom relationship ought to make us respect, silences in us those feelings for which we see even conjugal chastity blush."

These reasons may be peremptory, and, if they were proffered just now, I should have no motive for refuting them; but what have pathology and anthropology to do with them?

In the thirteenth century, Thomas Aquinas, from whom no circumstances could escape which might strengthen canonical prescriptions, enters, on the subject of marriage between relations, into the most trifling details, and nevertheless he does not say a word about the dangers attributed at the present day to these unions. "All persons

* Xenophon's Works, i, p. 489, Charpentier's edition.

who were in the habit of living in the same house were forbidden to marry one another, because if they were able lawfully to have carnal relations together, this liberty would violently inflame their passions; but under the new law, which is the law of the Spirit and of love, several degrees of consanguinity were forbidden, because the worship of God spreads and multiplies by spiritual grace, and not by a carnal origin. Consequently, men must be more debarred from carnal things, so that, attaching themselves to spiritual matters, love may abound in them more and more. This is why, formerly, consanguineous marriage was prevented, except in the most distant degrees of relationship, so that mutual amity might be extended to a larger number by relationship and affinity. They extended it rightly to the seventh degree . . . ; but afterwards the church restrained it as far as the fourth, since it was useless and dangerous to forbid the degrees of consanguinity beyond it."

Will it be thought that the evangelical doctor would have neglected to speak of the diseases which would attack the issue of these unions, if the experience of time had proved to him any facts, or even any affirmative rumours? They quote, it is true, an opinion of Saint Gregory the Great (without giving its source), where it states that "descendants cannot increase from such marriages." (*Experimento didicimus ex tali conjugio sobolem non posse succrescere.*) I do not doubt the correctness of this quotation; but I ask what it means? When they say, *ex tali conjugio*, do they speak of a union between cousins, or of one between father and daughter? M. Boudin ought to have told us this. I am, then, authorised to state that the Roman church, which has been the first to forbid marriages between cousins, has only done so with certain moral ideas, and with this reservation, according to St. Thomas, "that which it is useful to permit at one time, it is advantageous to forbid at another." Now, the civil law has judged wisely, as well as the church itself, that it is in our days useful and necessary to allow that which, in the first days of Catholicism, was always refused. It is only, then, at a very recent time that a few writers have discovered the morbid consequences of marriages between cousins. Which is the first who spoke of it? Our inquiries on this point have not been very fruitful; and the quotations of our opponents are, in general, deprived of all indications of their source. A passage from Foderé has been quoted, which blames marriages between uncle and niece, aunt and nephew, and first cousins, "as tending to debase the race"; if this quotation be correct on this first point, Foderé, who wrote about 1815, would be one of the first

hygienists who described this "tendency"; but in the article, "Marriage," by this author, inserted in the large *Dictionary of Medical Science* (1809), there is not a word on the subject, although the question itself is treated with many details. Esquirol, Rillet, Devay, Chazarain, and Boudin, are then, in France, the chief supporters of the theory of danger in marriages between cousins, which must be considered, whether true or false, as an entirely new one.

RECAPITULATION AND CONCLUSION.

1. The question of marriages between blood relations ought to be limited, in anthropology, to the human race, and to refer exclusively to marriages between cousins, uncle and niece, nephew and aunt; since, as to the other degrees of consanguinity, marriage is morally and legally prohibited. This ought to be separated from the question of consanguineous pairing, to which it has only indirect reference.

2. Nobody has answered the objections which I felt it my duty to make in 1862, in a work entitled *Des Dangers attribués aux Mariages entre Consanguins*, although MM. Gourdon, Magne (d'Alfort), Boudin, and Chipault, have since published essays on the subject. These objections still preserve all their force and value.

3. The statistics concerning deaf-mutes, published by MM. Boudin, Brochard, and Chazarain, and those which are attributed, without any proof, to MM. Landes and Perrin, are incorrect in their elements; those of M. Piroux are badly stated. We possess no exact information about the number of consanguineous marriages in France. It is impossible, then, to compare the proportion of these marriages with the proportion of weakly children who are the issue of these marriages. As to the foreign statistics, they are either completely false or exaggerated.

4. As to the very small number of collected individual researches in France, which comprise about sixty or eighty marriages between blood relations, whose issue has been tainted by disease, most of them are wanting in sufficient information for us to be able to judge of the circumstances of the marriages. Some observations are well made, it is true; but we do not see *why* children of consanguineous unions should escape those infirmities which happen to all other children. For six deaf-mutes of the former class, who have been inmates of the Paris asylum, there are three hundred and fifteen who spring from unions between individuals who had no tie of relationship between them.

5. It has not been proved that consanguineous marriages are more

numerous among the aristocratic classes in France and England than among the mass of the population. But even were that proved, nothing will prove that these classes have degenerated; their political situation is altered; rival classes are raised to fortune and honour; but every argument drawn from a comparison between the ancient clans and the citizen class is absolutely valueless; were the aristocratic classes degenerated, a great many causes might be brought forward to account for the fact. As to the relative value of pure races and crossed races, it is a question still requiring study, but closely allied to that of consanguinity. The documents which have been produced up to the present time, seem favourable to the superiority of pure races. In every case it is certain that the French Jews show no special infirmity in their race, and that weakly Jews are not to be found in a larger proportion than weakly Christians. It even appears that they are subject to laws of mortality superior to those of the mixed population among which they live.

6. A number of facts, vastly superior to opposing facts, and in every case facts proving much more, has been collected by MM. Perier, Bourgeois, Lagneau, Voisin, Ferrier, and myself. These facts are either individual or collective. Now, this is to be remarked, that whilst morbid facts laid to the charge of consanguineous unions prove nothing against these unions, because they *may* be due to other causes than consanguinity; isolated or collected facts concerning consanguinity prove, at least, that the supposed dangers have not shown themselves; because if we show places where diseases and consanguineous marriages coexist, nothing will allow us to say that *consanguinity* is the cause. If, on the contrary, we quote places, such as Batz, where these marriages are *the rule*, and where there is no disease, one fact of this nature, properly substantiated for a long period, completely refutes the anti-consanguinity doctrine. Now, these places are very numerous in France and abroad, and I do not doubt but that before long I may be able to increase considerably the list of facts of this nature.

7. The pretended dangers resulting from consanguineous marriages had not been explicitly noticed before the commencement of this century; we find no mention of them among the authors of antiquity. When legislators or theologians have forbidden them, they have done so from excellent motives, referring either to social morals or to domestic order; their interdicts, except for relations in a direct line or of the first degree, have an essentially provisional character; it has, besides, always been allowable to remove these interdicts. This

custom is usual in these days; the civil law makes no mention of it in any country.

8. Consequently, in the present state of science and in a physiological point of view, we are not authorised to blame marriages between first cousins: *it is a question* to be discovered whether it may be useful to recommend them, now that the dispersion of families makes moral and domestic conditions so different from what they formerly were; for if, on the one hand, everything tends to make us believe that *healthy* consanguinity is favourable to the offspring, it *may be* that morbid consanguinity would be unfavourable to them.

APPENDIX.*

DOCTOR ANCELON communicated to the *Académie des Sciences*, on the 18th of January, some remarks on the value of statistics as applied to consanguineous marriages. There has been, no doubt, a great deal of discussion lately on this subject. To what purpose? Are we favoured, now-a-days, with some new social reason? Are these marriages now more frequent than in former days? That which astonishes us is not the number of evils imputed to consanguineous marriages, but the enormous quantity of these marriages which have been noticed since the subject has been mooted; and above all, the lengthened observations which, they say, have been made upon them. Is it not surprising, for example, that all of a sudden, in a small rural district of La Meurthe, fifty-four consanguineous marriages have been met with and examined, with the following consequences:—

1. Marriages which have been sterile	-	-	14
2. Marriages whose issue has died before the age of puberty	-	-	7
3. Marriages which have produced children afflicted with scrofula, tubercles, deaf-muteness, etc.	-	-	18
4. Marriages whose issue has required no particular observation	-	-	15
			—
			54

What must we infer from this? Assuredly these data would be very alarming if we could only look at them from one point of view, and neglect the multiplicity of causes of degeneracy introduced into society since the end of the last century. But the registrars of sta-

* Dr. Dally, the learned author of this memoir, has been good enough to forward me the following report of a paper on the same subject, read before the Academy on the 18th January. It is so valuable, that I have not hesitated to translate the whole of it. (Tr.)

tistics have, perhaps, hardly considered what would become of their statistical display if the question is reconsidered. Are they uneasy as to what they would discover in examining non-consanguineous marriages? While waiting until, if possible, a statement of consanguineous marriages, contracted anterior to 1800, be made, we are called upon to examine contemporaneous non-consanguineous marriages, of which we have here the results.

Dieuze, with a population of 3,700 souls, can count only four consanguineous marriages, the consequences of which we will examine farther on; as to the non-consanguineous marriages, they are analysed in the following manner:—

1. Sterile marriages - - -	7.50 per cent.
2. Marriages whose issue is scrofulous, deaf and dumb, etc. - -	47.33 „
3. Marriages whose issue has died be- fore the age of puberty - -	0.69 „
4. Marriages which have given rise to no particular observations -	44.93 „

The balance here is not favourable to non-consanguineous marriages; and that nothing may be wanting in our manner of proof, let us examine our four consanguineous marriages. The first of these marriages, between first cousins, dating some thirty odd years ago, has remained sterile. The three others, which have also been between first cousins, came from the same stock. From the first consanguineous marriage there were born five children—three boys and two girls. The eldest of the boys married his first cousin, who has borne him two healthy children: the second, aged twenty-five, is still a bachelor; the third died of epilepsy at the age of twenty. As to the youngest daughter, married to her first cousin a little before her eldest sister, she has already three healthy children. Except the epileptic patient, whom we mentioned above, all the other members of this numerous consanguineous family have enjoyed the most flourishing health up to this time, with the exception of two, who have died of acute pneumonia.

After all this, and until we obtain the double series of statistics of which we have just given a specimen, we believe we have a right to conclude that we must search elsewhere for the causes of the degeneracy with which some people endeavour to charge consanguineous marriages.

PEYRERUS, AND THEOLOGICAL CRITICISM.

“ Veritas laborat sæpe, extinguitur nunquam.”

Livy, Hist., xxii, 30, 10.

“ Die Inquisition kommt nicht auf. Wir sind nicht gemacht, wie die Spanier, unser Gewissen tyrannisiren zu lassen.”

GÖTTE, Egmont, i, 1.

AFTER two centuries of neglect and oblivion, the name of Isaac de la Peyrère is once more received and honoured, as that of the first scholar who broke through the meshes of a groundless traditional prejudice, and proved that even in Scripture there are no decisive evidences of man's descent from a single pair; nay more, that there are distinct indications of non-Adamite races.

The theory of La Peyrère, derived partly from Genesis and partly from the Epistle to the Romans, was, that there had been two separate creations of man; one on the sixth day along with the beasts, at the mere fiat of God, and the other many thousand years afterwards. The first was the creation of the Gentiles. In the first creation, man and woman are created simultaneously, and no names are given them. In the second, Adam is created out of the dust, the breath of God is breathed into his nostrils, and Eve is subsequently created out of his rib. Peyrère saw how many difficulties would thus be obviated, though these were in his time far less numerous and far less formidable than they have become, in consequence of the progress of science.

His system was, however, *mainly* founded on Rom. v, 12-14, from which he deduced that there were *two* classes of men. One of these—viz., the Jews, were descended from Adam, who, at his creation, had received *a law*, the violation of which brought death among his race. The other class—viz., Gentiles, could only commit *natural* sins, because they had received *no law*; nevertheless, they too were subjected to the natural consequence of death—so that “death reigned from Adam to Moses, *even over them that had not sinned after the similitude of Adam's transgression.*”

Peyrère was two centuries before his time; and whether we accept or reject his special theories, it is impossible not to admire his acumen, his candour, and his courage. Like all people who are wiser, fairer, and more keen-sighted than their cotemporaries, he was of course persecuted and rendered as miserable as his theological adversaries, with their three favourite weapons—persecution, imprisonment, and

* See Latronne, Rev. des Deux Mondes, Paris, 1834, p. 602.

fire—had it in their power to make him. He had dared* to step out of the magic exegetical circle which theology had drawn around all the sciences, and his presumption was punished with prompt violence. Indeed, so severe were the measures of his opponents, that the second part of his book never appeared.

Isaac de la Peyrère* was born at Bordeaux in 1594, of a noble Protestant family, and he distinguished himself for bravery at the celebrated siege of Montauban, where he commanded a company. He then entered the service of the Prince de Condé, which he quitted in 1644, to accompany La Thuillierie, the French ambassador, to Denmark, where he collected the materials for his works on Iceland and Greenland. On his return, he attached himself to the young Prince de Condé, who sent him as his agent to Spain, and whom he afterwards followed in Flanders and Holland. There he got his now famous book—*Præadamitæ*—anonymously printed, in 1655. The authorship was, however, known; and his hypothesis, although it solves many difficulties of the Mosaic cosmogony, raised a violent tempest against him. The same year the Bishop of Namur censured the book; it received the honour of being burned by the hangman, by order of the Parliament of Paris; and the Vicar-General of the Archbishop of Malines ordered the author to be arrested. In February 1656, thirty armed men rushed into his room at Brussels, dragged him through the streets, and by consent of the Archduke Leopold, put him in the tower of Turenberg. This was sanctioned by the Prince de Condé, who had a warm regard for Peyrère, but, with his Jesuit confessor, hoped, by a judicious use of terror, to prevail on him “à se convertir.” The Prince, on his promise to abjure and retract his book, procured his release, and provided him with money to go to Rome, throw himself at the Pope's feet, and embrace Catholicism. Like Galileo before him, he was forced to go through a form of recantation, and the Pope (Alex. VII) received him graciously. He rejoined Condé in the Low Countries, and became his librarian; but subsequently retired on a small pension to the oratory of Nôtre Dame des Vertus, where he died Jan. 30, 1676.

A friend† says of him, that “He was still infatuated with his Præadamites, and it is likely he died with that fantastical notion. He would have been very well pleased if he had known that there is a Rabbi who mentions Adam's preceptor.”

* Some meagre materials for his biography may be gleaned from Bayle, and from *La France Protestante*, by M. M. Haag.

† Continuation of the *Menagiana*, Dutch ed., p. 38, in Bayle, s. v. *Peyrera*.

The fury of theological hatred raged against him with uncommon vigour, and the year after his book appeared (1656) it was answered in five or six refutations (?), whose flaming character may be judged of by their titles. One, that of Danhawerus, was called "*Præadamitæ utis, sive fabula primorum hominum ante Adamum conditorum explosa.*" Another, published by Ursinus at Frankfort, was entitled "*Novus Prometheus, Præadamitarum plastes, ad Caucasum relegatus et reli-gatus.*" A third, by A. Hulsius, was "*Nonens Præadamiticum, sive confutatio vani et sociniantis cujusdam somnii, etc.*" Lugd. Bat. 1656. He says, "Perturbet te Dominus, quia perturbasti Israellem." Heidanus was even obliged to reply to the charge of having *published* the book, as a "detestanda calumnia," and an "effrons et immane mendacium, quâvis pœnâ dignissimum." The disgustingly energetic remarks of Petrus ab Andlo on this subject may be found in Bayle.

"Religious subjects," says Payne Knight, "being beyond the reach of sense or reason are always embraced or rejected with violence or heat. Men think they know because they are sure they feel, and are firmly convinced because strongly agitated." The remark applies with full force to the subject before us, where cartloads of abuse were poured in to conceal and fill up the chasms of argument. Even so respectable and learned a writer as Heidegger is not ashamed to furnish fresh extracts to a spicilegium drawn from the disgraceful—I had well-nigh said the infamous—pages of theological controversy. Take this specimen of that well-known style! "Sed meritissimo deridiculo et odio habitus ille nuper *cum nocturnis fungis, tristi* lunâ natus, Præadamitarum patronus, qui cum animum* induxisset, etc." A few of the usual familiar imputations of fraud, dishonesty, infidelity, etc., follow, in the common fashion of such 'religious' reviewers (who mostly ignore the existence of the ninth commandment); and then, after the dogma has been denounced as 'musteum', 'impium', and 'absurdum', La Peyrère is finally transfixed with the epithet "fanaticus." "E pur si muove!" The name of Peyrère will be revered when that of Heidegger is reposing in venerable dust. A type of all these faults in their most concentrated form may be found in the tedious and irritating compilation of Dr. Smyth *On the Unity of the Human Races*. He says (p. 35), "when *infidelity* sought to erect its dominion on the ruins of Christianity (!), Voltaire, Rousseau, Peyrère (!), etc., introduced the theory of an original diversity, in order thereby to *overthrow the truth and inspiration of the Holy Scriptures.*" To say nothing of the preposterous chronological mistake, which shews that Dr. Smyth

* Heidegger, Hist. Patriarc., Ex. iv, p. 148.

knew nothing whatever about La Peyrère, and had probably never read a line of his work, the sentence contains a *positive slander*, hardly worth noticing except for its amazing folly. For Peyrère was the most devout, the most earnest believer *in the inspiration of every word of Scripture*; and it is *from Scripture* that his doctrine is deduced. Peyrère believed in Præadamites* *solely* because he *considered* that the Bible recognised their existence. The scientific arguments were in his day unknown. To class him, either chronologically or intellectually, among the free-thinkers is an enormous error. Yet Dr. Smyth, who thus shews his complete unacquaintance with the subject, is introduced with a loud preliminary trumpet-flourish from English and Scotch divines!

It is by such base weapons of calumny and abuse that Polygenists have been met from the time of Peyreriis down to that of Vogt, from Hulsius and Heidegger down to Dr. Bachman and Dr. Smyth. We may well ask with M. de Quatrefages—a monogenist who is tolerant because he is scientific, and courteous because he is not ignorant: “à quoi bon toutes ces colères? Les arrêts de l'inquisition n'ont ni arrêté la terre sur sa marche, ni fait tourner le soleil autour de notre globe... Les violences de langage, les insinuations malveillantes, les railleries, ne changeront pas davantage les relations existantes entre les groupes humains.” Such a style as that which we have been noticing is never really efficacious. It has served no other object than that of bringing religious controversy into profound contempt. What have those clergy and religious writers now to say for themselves who fulminated their forgotten and idle anathemas against the first discoverers of geology, and who, *more suo*, discussing that theory with colossal arrogance and unfathomable ignorance, “thought, or sometimes pretended to think, that they were crushing a heresy, *when they were denying without examination what might almost be called the lowest kind of revelation*, since the truths of nature, as Scripture teaches, bear witness to the perfections of the Creator.”† If such clerical dogmatisers *will* not learn wisdom, the rent which already exists between the teaching of the national Science and the national Church will, with the most injurious consequences, be irretrievably widened.‡

* I here judge Peyrère *by his own book*; not by the malicious remarks made about him, of which I am well aware. De Quatrefages takes the same view. Rev. des Deux Mondes, Dec. 1860.

† Gen. of Earth and Man, p. vi.

‡ That this scorn and contempt is fast becoming the natural tone of scientific men towards a large body of the clergy is well known; and whose fault is it? It speaks most loudly in the hasty and irreverent language of C. Vogt, which I will not translate (Vorlesungen, § 13). He says: “Ein Adam . . . ein Noah . . . das

Few scientific truths have ever been discovered—few discoveries have been made for the last five centuries, against which the combined forces of prejudice and ignorance have not marshalled their array of mistaken Biblical inferences. We leave it to others to write this sad, this humiliating, but instructive history. Here we will but follow Professor Vogt in alluding to two of the *most* modern instances to shew that the religious critics of to-day are no wiser than of old, and have gained nothing from the experience of past defeats.

1. Few ethnologists have done more for science than the calm-minded, the noble and earnest student, Dr. Morton, of Philadelphia. Belonging to the highest order of physicians, he devoted lifelong researches to American, and afterwards to *general* craniology. His researches, pursued with continuous ardour, and directed by a peculiarly ingenious and original method, led him to the conviction that mankind had sprung from different origins, and could not possibly have descended from a single pair. Like a brave and honest man, he did not shrink from publishing his conclusions. This was a great stumblingblock to the Reverend Dr. Bachman, of Charleston, who thereupon wrote in a friendly way to Dr. Morton,* that he must enter the lists against this view, but hoped that the controversy would not weaken their previous friendship, since he regarded Dr. Morton as a benefactor of his country, and an ornament to science. Dr. Bachman then published a book, in which, although he displayed the grossest ignorance of his subject, 'he mounted his high horse, treated the good Dr. Morton *de haut en bas* in an arrogant and offensive manner, and in that inflated declamatory style, which is too frequent in his profession.' Morton replied in a calm, dignified, and even friendly manner,

waren Sätze, die als Vorbedingung jeder wissenschaftlichen Untersuchung sollten aufgezwungen werden, und ohne deren Annahme nach der Behauptung der Frommen die Welt in Gefahr stand und noch steht, ohne weiteres in den Abgrund der Hölle zu versinken. . . . So hat man hier die ganze Klerisei nebst sämmtlichen gläubigen Schafen und stössigen Böcken auf dem Halse—and was das sagen will, das kann nur Derjenige wissen, der sich einmal mitten drin befunden hat." [As many of our readers are unable to read German, we beg to append here a translation of the above paragraph for their satisfaction. "One Adam, one ancestor, one Noah, with three sons as second ancestors—these were the premises forced upon scientific inquiry, without the assumption of which the naturalist was unceremoniously sent to hell. Where in the former case we had only to do with philosophers, who in their academical gowns only talk to a select audience, here we had against us the whole clergy, with their faithful sheep and butting rams—a state of things which can only be appreciated from experience." ERROR.]

* If we here quote, without translating and without approving, the words of C. Vogt, whose account of this controversy is taken from Morton's Biography, it is only to show the bitter spirit of hostility to clerical science (if we may be allowed the term) which animates physical inquirers. "Nach der Weise der Pfaffen, die stets zu Aubegen die Katzenpfote machen, schreibt er zuerst freundlich an Dr. Morton." (Vorlesungen, § 14.)

repeating, extending, and developing his scientific arguments. This was quite intolerable to the Reverend Dr. Bachman. 'He lost all self-control; accused Morton of belonging to a conspiracy which had for its express object the overthrow of a doctrine, which was bound in the closest connection with the faith and hope of the Christian both in time and in eternity; he declared that infidelity was the only possible logical consequence of such a view, an infidelity which, in the name of threatened society, must be energetically resisted.' How utterly false and calumnious such assertions are, will be obvious; but when the clergy use such language as this, we know, as Morton's biographer observes, that it is the trumpet of internecine war. This took place in 1850, and doubtless Dr. Morton would have felt the effect of religious persecution, had not his death in the following year ended the controversy. And what is the result? Morton's name is venerated throughout the civilised world; Dr. Bachman, who would otherwise have remained utterly unknown, will be curiously immortalised in the amber of Morton's fame.

2. Even scientific men are not beyond the reach of deeply rooted traditional prejudice. How else can we account for the long contempt and neglect of the now celebrated discoveries of M. Boucher de Perthes? The whole world, scientific and unscientific, had made up its mind that man had *not* existed on this earth more than six thousand years, and this was a reason for quietly ignoring, or explaining by the loosest theories, the occasional discovery of human remains among the bones of extinct animals. Cuvier had even denied the existence of fossil monkeys; but he had not been dead for five years when M. Lartet, in 1836, discovered fossil remains of the *Pliopithecus antiquus*; Dr. Lund found in Brazil, in 1837, a fossil simian of a now extinct species; and other geologists found similar remains in the tertiary strata in other parts of the world.* Since that period undoubted fossilised *human* remains have been discovered in such situations as to have won the reluctant consent of most scientific men to the fact of man's antiquity on the surface of the globe. But, had not prejudice stood in the way, the conclusion would have been arrived at long ago. *Before the end of the last century*, Mr. Frere had discovered flint-implements at Hoxne, in Sussex, "at a depth of about twelve feet in a stratified soil," under circumstances which led him to conclude that they had belonged to a manufactory of such implements

* For a good and comprehensive review of these discoveries, see *Anthropol. Rev.*, i, pp. 68-79; Boucher de Perthes, *De l'Homme Antediluvien et de ses Œuvres*.

at a period remoter than that of the present world. This discovery, like that of Schmerling, in 1833, fell still-born; nor was it until 1839 that M. Boucher de Perthes succeeded in gaining the slightest attention to his similar discovery of antediluvian implements. For years he battled in vain against prejudice, ignorance, and theological opposition. "Practical people," he says, "laughed, shrugged their shoulders, and even disdained to examine the circumstances for themselves; in one word—they were afraid. They dreaded, in short, to make themselves associates of a heresy. When, however, the facts were so obvious that any one could corroborate them, they were still less willing to believe them, and threw in my path an obstacle greater than remonstrance, than criticism, than satire, even than persecution—namely, the silence of contempt. They no longer disputed the facts; they no longer gave themselves the trouble to deny them; but simply buried them in oblivion. Then they invented explanations which were in truth far more surprising than the facts themselves; the stone hatchets were the result of fire, a volcano had flung them out in a fluid condition, they had fallen into water,* and had assumed their present shape in consequence of the sudden cooling, since some of them resemble Prince Rupert's drops! Others called Cold to their assistance; pebbles might have been split by frost, and shaped into knives and hatchets! or they were the mere forgeries of the workmen; or they might have sunk into the sand by their own gravity † All these objections troubled me very little; what irritated me far more than criticism was the obstinate refusal to examine the facts, and the exclamation impossible! before any one had given himself the trouble to see whether it was the case or no." Elsewhere, M. Boucher complains that "being a purely geological question, it became the subject of religious controversy." Some people attacked his religion; the rest took refuge in that favourite argument of bigotry, the charge of presumption. 'Do you, a single obscure person, venture to put your opinion against that which all other men have adopted?' Here, again, we ask what was the result of the controversy? Truth and science triumphed, and nearly all geologists, all archæologists, all, except a few theologians and obstinate persons—who consider a man lost for time and for eternity, if any belief of his militates against

* This was the theory of Mr. Edwards of Birmingham.

† M. Boucher has not mentioned the belief of A. Wagner that the stone hatchets are a mere *lusus nature*! This was the theory adopted by the theological opponents of geology with respect to fossil remains; but it is amazing to find it cropping up again in a scientific work of the eighteenth century.

any idol or prejudice of theirs—have accepted, as a fact scientifically proved, the Antiquity of Man.

It is ever thus; the true thought of the solitary thinker in his closet is stronger than priests and princes; is omnipotent even against the banded conspiracies of the whole world's prejudice and interest. After twenty-five years of devotion to study, during which he was "for a long time railed at, or what is worse, treated with contempt, M. Boucher de Perthes had to struggle against universal prejudices, but by his perseverance and courage received first some tardy support, until at length this depressed truth broke forth in science."*

PHILALETHES.

MISCEGENATION.†

DURING the last two months there have come reports to Europe of the remarkable form of insanity which is just now affecting the people of Federal America. We should not have thought it worth while to take any notice of the publication of the pamphlet under review, if it did not give us some insight into the extraordinary mental aberration now going on in Yankeedom. It is useless, however, longer to close our eyes to the phenomenon now appearing in the New World. Before we saw this pamphlet, we expected that it was merely a hoax, which some political wag had concocted for the benefit of his party. But an examination of the works dispels that illusion, and shows that the author attempts to found his theory on scientific facts!

There is, indeed, just enough of the current scientific opinion of the day, and also enough of literary merit, to enable readers of this work to get very much confused as to the real nature of the opinions and theory therein propounded. The anonymous author starts with some general assertions, and if these be admitted, the theory is not so utterly absurd as it otherwise appears. Monogenists will, indeed, be astonished at the use made of their doctrine; but it is from the

* See Vogt, *Vorlesungen über des Menschen*, § 18. [A translation of this work is announced to be in the press, and will soon be published as one of the series of works brought out by the Anthropological Society. *EDITORIA.*] *Anthropological Rev.*, i, 80; *Dr. Knox, ib.*, ii, 261.

† *Miscegenation, or the Theory of the Blending of Races, applied to the American White Man and Negro.* Trübner and Co., 1864.

opinions they have advanced, that the author deduces his theory. Many subjects are touched upon in this pamphlet; but we shall merely have space to examine into the truth of a few of the general propositions on which this theory is based. The manner in which the conclusions of science are misrepresented, and in which gratuitous assertions are made, calls for an early exposure.

In the preface we read, "Science has demonstrated that the intermarriage of divers races is indispensable to a progressive humanity." This is totally false, and such an hypothesis as the superiority of mixed races rests on no scientific data, and is contradicted by many well-known facts. The public are warned against reading the work by the author, if they desire "what is vulgarly known as amalgamation." It is because the word "amalgamation" is justly so dreaded, that the author coins another word. "Miscegenation" will not find a place in future scientific literature, but it will be most useful as indicating the state of knowledge respecting Anthropology in America in the year 1864.

The author is more modest than some of his countrymen; for he says, "He appeals from the *imperfect* American of to-day, to a more perfect race that is yet to appear on this continent." We had generally supposed that the Yankee was the highest possible development of humanity—at least, in his own opinion.

The first chapter opens with these words: "The teachings of physiology, as well as the inspirations of Christianity, settle the question, that all the tribes which inhabit the earth were originally derived from one type. Whether or not the story of Adam and Eve is accepted by all as absolutely true, the fact which is represented has been demonstrated by history, and by the latest discoveries bearing on the origin of the human family."

This extract is the key-note of the whole book. The author is not content in appealing to science, but invokes revelation to help him. It is quite out of our province to follow the writer in his arguments as to whether the "inspirations of Christianity settle the question:" but we protest against the assertion, that physiology lends its support to such a proposition. As to the unity of man's origin being demonstrated by history, such a statement is hopelessly absurd—such a question not coming at all within the reach of history to solve. And as to the "latest discoveries," we must profess ourselves entirely ignorant of any such discovery which lends a shadow of evidence to such an assumption.

The author declares he has examined all recent "physiological"

works, and he has found "that the most profound investigation has proved conclusively not merely the unity of the race, but the equality of the black with the white under the same advantages of education and condition." If this were true, it would indeed show what a sad state the science of man must be in, and there is just enough semblance of truth in the statement to make us regret that so little has yet been done to diffuse the conclusions to which science has arrived—or, at least, to which it inclines.

The cool manner in which the author makes assertions is to be commended to those who formulate their views from the depths of their own consciousness, and not from scientific data. For instance, he writes: "The inhabitant of a northern clime is always white; of an extreme southern clime always black." We can forgive men in England making such a statement, but for an American, who surely must know that the colour of the American Indians is in no way influenced by climate, such a statement reads like wilful misrepresentation.

The author affirms that Dr. Draper has asserted, that "the slight peculiarities of structure which distinguish the white from the black," are due to the action of the liver! The position of the foramen magnum is asserted to be the same as that of the European—the author entirely ignoring the fact, that Prichard has long since been shown to be entirely in error on this point.

The author quotes largely from Professor Draper; and the following is given as an extract from his writings, and we have answered a few of the questions he has asked:—

"Are not all of us liable to the same diseases? [No.] Have not all a tendency to exist the same length of time? Is it the temperature of our body, the beat of our pulse, the respiration that we observe—are they not everywhere alike? [No.] Or, turning to the manifestations of the mind, is there not among all the tribes of our race a belief in the existence and goodness of God? [certainly not] in unseen agents intermediate between Him and ourselves? and in a future life? [No.] Do we not all put a reliance in the efficacy of prayers, and all, in our youth, have a dread of ghosts? [No.] How many of us, in all parts of the world, attach a value to pilgrimages, sacrificial offerings, fastings, and unlucky days, and in our worldly proceedings are guided by codes of law and ideas of the nature of property! Have we not all the same fears, the same delights, the same aversions [no], and do we not resort to the use of fire, domestic animals, and weapons? Do we not all expect that the differences which surround us here will be balanced hereafter, and that there are rewards and punishments? [Certainly not.] Is there not a common interpretation of all the varied forms of funeral ceremonies? [no]—a common sentiment of the sacredness of the tomb? [No.] Have we not

always, and do we not everywhere, set apart a sacerdotal order who may mediate for us?" [No.]

The author says that only a copper-coloured race can exist permanently in America :—

“The white people of America are dying for want of flesh and blood. They have bone and sinew, but they are dry and shriveled for lack of the healthy juices of life. The author has often sadly marked the contrast to be observed in social or intellectual gatherings of the negro and the white American. In the latter are seen unmistakably, the indications of physical decay. The cheeks are shrunken, the lips are thin and bloodless, the under jaw narrow and retreating, the teeth decayed and painful, the nose sharp and cold, the eyes small and watery, the complexion of a blue and yellow hue, the head and shoulders bent forward, the hair dry and straggling upon the men, the waists of the women thin and pinched, telling of sterility and consumption, the general appearance gaunt and cadaverous from head to foot. You will see bald heads upon young men. You will see eye-glasses and spectacles, false teeth, artificial colour in the face, artificial plumpness to the form. The intercourse will be formal, ascetic, unemotional. You will see these characteristics so universal that they become rather the rule than the exception. Where the cheeks on one grown person will be rounded and tinted with the healthy blood, ten persons will have them pale and hollow. Turn now to an assemblage of negroes. Every cheek is plump; the teeth are whiter than ivory; there are no bald heads, the eyes are large and bright, the head and shoulders are always up and back, every face wears a smile, every form is stalwart. The white man is going to seed; the black man is adding vigour and freshness to the trunk. The white child is born with full cheeks, but as he approaches manhood they fall away and are lank and thin. Nature did not intend that men's cheeks should be hollow. The dentists' signs in every locality only tell feebly of the sickness and racking pain that accompanies this weak and diseased condition of the jaws. Our professional men show more than any the lack of healthful association with their opposites of the other sex. They become thin, and gaunt, and old, when they should be strong and vigorous. They are told they need exercise; they take long walks in the morning air, and come back more cold and shriveled than ever. They need contact with healthy, loving, warm-blooded natures to fill up the lean interstices of their anatomy.”

Certainly this work gives us some new ideas, for we have been taught that the dark races have originated nothing, but this author says, “The white race has originated nothing”! The cause of the recent disturbances in New York, we suppose, was jealousy of the Irishman to the Negro, for we here read: “The white Irishwoman loves the black man, and in the old country it has been stated, that

the Negro is sure of the handsomest amongst the poor white females"!

Professor Huxley has recently declared that the "slave-holding interest" indulges in far greater absurdities than the abolitionists; but we confess we have never read any statement respecting the physical characters of the races of man which for absurdity equals the following:—

"The fusion, whenever it takes place, will be of infinite service to the Irish. They are a more brutal race and lower in civilisation than the negro. The latter is mild, spiritual, fond of melody and song, warm in his attachments, fervid in his passions, but inoffensive and kind, and only apparently brutal when his warmest emotions are brought into play in his love for the white woman. The Irish are coarse-grained, revengeful, unintellectual, with very few of the finer instincts of humanity. Of course we speak of the labouring Irish as they appear in this country. The Milesian is a child of the sun. He was originally of a coloured race, and has all the fervid emotional power which belongs to a people born in or near the tropics. His long habitation north, however, and the ignorance in which he has been kept by misgovernment, have sunk the Irishman below the level of the most degraded negro. Take an equal number of negroes and Irish from among the lowest communities of the city of New York, and the former will be found far superior to the latter in cleanliness, education, moral feelings, beauty of form and feature, and natural sense. One of the evidences of degeneracy which have been pointed out in certain of the negro races has been the prognathous skull, the projecting mouth, the flat and open nostril. Yet this is a characteristic as true of certain portions of the people of Ireland as of the Guinea African. The inhabitants of Sligo and Mayo, portions of Ireland under peculiarly bad government, have developed these precise types of features. The people have become thin-legged, pot-bellied, with mouth projected, head sloped, nostril distended; in short, they exhibit all the characteristics by which we have marked the lowest type of the negro. The blending of the Irish in this country with the negro will be a positive gain to the former. With education and an intermingling with the superior black, the Irish may be lifted up to something like the dignity of their ancestors, the Milesians. The poets who sang of the ancient Irish, of the wisdom of their rulers, of their bards and warriors, forgot, perhaps, that this noble old race was of a very dark complexion, and native of the far south. The red hair and beard so common in Ireland is a sure indication of the southern origin of its people. When a very dark people move to a northern climate the physiological change effected by the temperature is to convert the black into red hair."

A chapter, entitled, "Heart-Histories of the White Daughters of the South," is too indecent for us to quote from; we believe that only a Mulatto or a Mulatress could have strung together such licen-

tious absurdities. We think we have said enough to show the quality of this work. It is painful to read, and more painful to reflect, on the injury it may do to a people who are influenced by its teachings.

That this question has also its comical aspect, may be seen in the subjoined extract, which we beg our readers to compare with Mr. Blake's edition of Broca's *Human Hybridity*, p. 28, and reconcile as best they can:—

“MISCEGENATION.—The *New Hampshire Patriot* gives facts to show that the female abolitionists who went as teachers of the Negroes at Port Royal, have been very successful in at least one branch of juvenile development. It says: ‘Private advices from Port Royal say that many of the female abolitionists who went to Port Royal to teach the little niggers how to read and pray, have been obliged, within the past few months, to abandon their black charges and open nurseries on their own private account. An officer informed us recently that no less than sixty-four spinsters had contributed to the population in and about the neighbourhood of Port Royal harbour. The climate seems to favour population even more than the production of Sea Island cotton by paid Negro labour. The information furnished us by the officer concerning the sixty-four little Mulattoes has been confirmed by the testimony of the Rev. Liberty Billings, Lieutenant-Colonel of the First South Carolina regiment, who is here in consequence of ill health. He says it is a sad truth.’”

ANTHROPOLOGY IN ITS CONNECTION WITH CHEMISTRY.*

To Dr. William Herapath belongs the honour of suggesting to the public mind a difficulty in connection with the Hebrew account of man's origin, which had, we believe, not been noticed before. We can hardly realise the fact, that it was necessary to address a body of educated medical men in such terms, and we are still more astonished to think that such language could have brought on the speaker marks of disapprobation. We shall leave chemists and medical men to settle this matter as best they can, we simply chronicle the following objectionable passage delivered to the medical faculty assembled in congress at Bristol in the year 1863.

“From our days of boyhood it has been most assiduously taught

* Address on Chemistry in its relations to Medicine and its Collateral Sciences. By W. Bird Herapath, M.D. Bristol, 1863.

us that 'man was made out of the dust of the earth,' and 'as of dust thou art so to dust thou shalt return.' Now this opinion, if literally true, would necessitate the existence of alumina as one of the elements of organised structure, for no soil or earthy material capable of being employed by agriculturists can be found without alumina existing largely in its constitution, and clay cannot be found without it; therefore chemistry as loudly protests against accepting the Mosaic record in a *strictly literal* sense as geology, geography, astronomy, or any other of the physical sciences so absurdly dogmatised upon weekly from the pulpits, by those who have neglected the study of true science, but still profess to teach us that which is beyond all knowledge.

"That man is not made out of the dust of the earth, but from organised material or vegetable matter properly digested and assimilated by other organised beings, chemical science everywhere proves to us incontestably, and the existence of no element in the composition of the human body, which does not also occur in the bodies of the mammalia and all the other classes into which the animal kingdom has been divided by natural historians, tends to prove by the chemical method the truth of that proposition which has been advanced by comparative anatomy:—'That man is one with the beasts of the field;' whilst physiological psychology demonstrates that if man have a reasoning principle independent of its material envelope, and so far spiritual in its character as to be 'immaterial' in its principle, so 'the beasts which perish' must have mental powers of perception, sensation, thought, feelings, and emotions dependent upon some immaterial principle in like manner, or that we are in fact compelled to admit that thought is one of the many properties with which matter has been invested by the Beneficent Creator and Architect of the Universe.

"This spiritual principle of the whole animal kingdom has hitherto eluded the skill of the chemist as it has equally baffled the research of the anatomist; but in the same way that chemical logic will enable the chemist to demonstrate satisfactorily the existence of a material elementary principle, even before its isolation and production in the test-tube, so analogical reasoning proves the possibility and probability of such a spiritual principle as one of Nature's powers; for the same reason that chemistry has failed to detect and demonstrate the existence of this spiritual principle, whose proper domains are the realms of thought and the sphere of perception, so it has hitherto been unable to render any assistance to the elucidation of the diseases and derangements of the mental powers, dependent as they are upon the combined agency of spirit and matter. The true corporeal structure, so intimately connected with the phenomena of mind, may be, and has been, subjected to numerous investigations, by both the anatomist and the chemist, and even further submitted to microscopical analysis and investigation, without as yet giving any satisfactory evidences of change during many of those diseased conditions, which, also! too often afflict humanity."

SAVAGE AFRICA.*

SOME three years ago, when that amiable traveller, M. Du Chaillu, was astonishing the London public with his wonderful adventures amongst the gorillas and the Fans of Equatorial Africa, a "young man about town" formed the Englishman-like resolution of visiting these scenes, and endeavour to reconcile the somewhat conflicting statements given by the "gorilla hunter." Before us, we have a goodly volume of some 587 pages as the result of this resolution. We, however, search in vain for any explanation of M. Du Chaillu's contradictions, as the subject is never once mentioned in the body of the work. In a note, however, we are told that the author is able to explain all M. Du Chaillu's contradictions, if he ever should be called on to do so. So far we find no fault, and we are glad that Mr. Reade has said nothing to wound the feelings of that brave traveller and explorer who was made by his injudicious friends, for their own glory, the lion of the season for 1861.

It is necessary to bear in mind Mr. Reade's object in visiting Africa. The fact is that his mission was to discover the truth; and, therefore, his testimony on any subject would consequently probably be of some considerable value. And here we think the author has made a name for himself, as one who has fearlessly spoken the truth respecting what he saw and heard. Nor is the work merely a *reprint* of the journal of a self-sufficient traveller: but Mr. Reade has exhibited no little literary skill in the composition of the volume before us.

We think, however, that the book would be greatly improved by the reduction of the number of chapters, and also of the sections of his subject. The work is divided into no less than thirty-eight chapters; at least one half too many. The author shows himself acquainted with what has been written upon the subject, and, indeed, occasionally we could wish he had not been so well acquainted with it; for we seem to recognise in more than one place anecdotes of former travellers. These, no doubt, add to the interest of the work; but they destroy the value of the volume as a book of original observation.

* *Savage Africa: being the Narrative of a Tour in Equatorial, South-Western, and North-Western Africa; with notes on the Habits of the Gorilla; on the Existence of Unicorns and Tailed Men; on the Slave Trade; on the Origin, Character, and Capabilities of the Negro, and on the Future Civilisation of Western Africa.* By W. Winwood Reade, F.A.S.L., etc. With Illustrations and a Map. Second Edition. London: Smith, Elder, and Co., 1864.

It is quite out of our power to give an analysis of the contents of this work, and we must refer our readers to its pages for many interesting descriptions of African life.

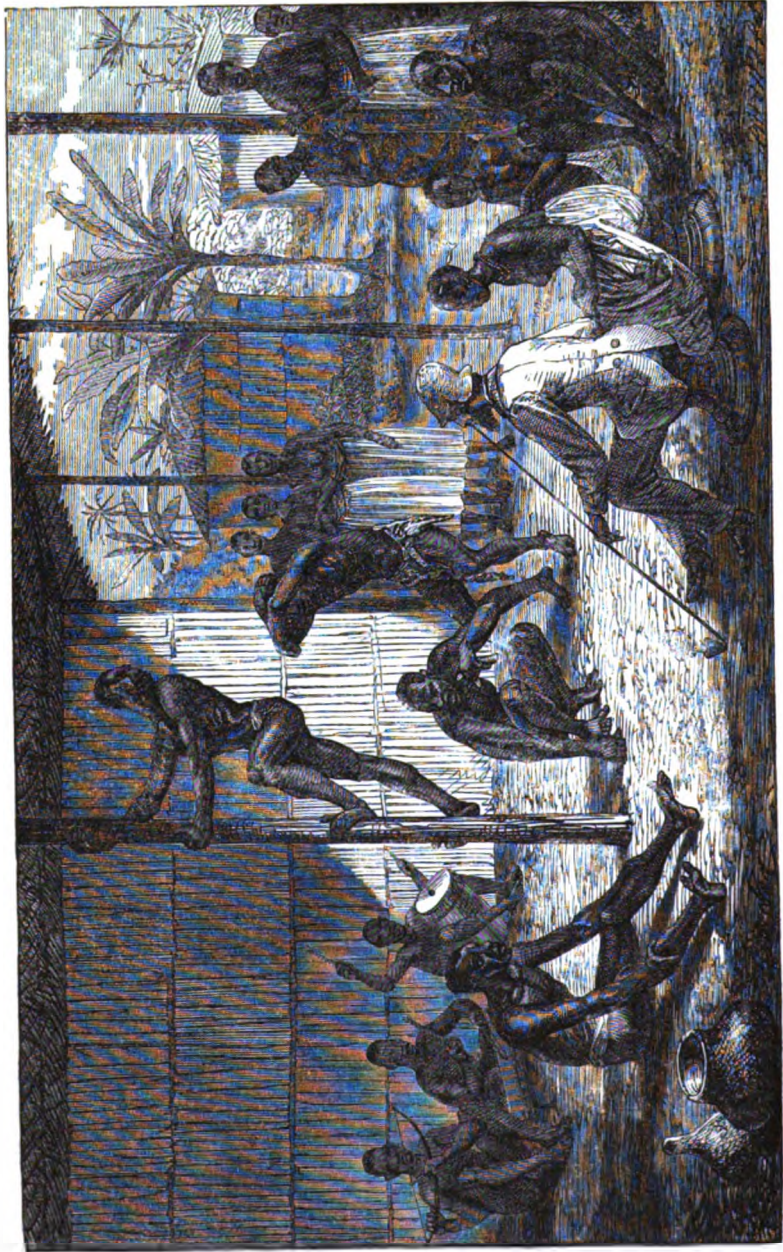
The following extract describes Sierra Leone civilisation :—

“The Negro imitates the white man as the ape imitates the Negro. The result in both cases is a caricature. The rich Negro of Sierra Leone is dressed as if he had taken a bath in a rainbow; and his manners are so strained and pompous that a close imitation of them, even in the broadest farce, would be looked upon as a rough over-acting of character. But, most comical of all, is the manner in which negroes identify themselves with the parent country. To hear them talk, you would think that their ancestors had come over with William the Conqueror; and that they even take to themselves all the glories of our history, the following anecdote will prove. The French consular agent having some time ago overstepped the limits of the land, a warrant was taken out against him. Holding the sable powers in great contempt, he armed himself with a pair of pistols, and defied them with the air of a brigand at the Victoria. ‘Ah!’ cried the two constables rapidly retreating, ‘we no care for you, one dam Frenchman. I tink you forget *we win Waterloo*—eh?’

“It is one of the chief peculiarities of the Sierra Leone Negro that he hates, with an intense and bitter hatred, this white man to whom he owes everything. This Christian feeling is propagated even by the native preachers, for one is said to have explained our origin from the pulpit in the following manner: ‘My breddren, you see white man bad too much, ugly too much, no good. You want sabby how man like dat come to lib in the world. Well, I tell you. Adam and Eve, dey coloured people, very hansum; lib in one beautiful garden. Dere dey hab all things dat be good. Plantains, yams, sweet potatoes, foo-foo *palm-wine*—he-igh, too much! Den dey hab two childrum, Cain and Abel. Cain no like Abel’s palaver; one day he kill’m. Den God angry, and he say—*Cain!* Cain go hide himself; he tink him berry claber. Heigh-heigh! God say again—Cain, you tink I no see you, you bush-nigger—eh? Den Cain come out, and he say, ‘Yes, massa, I lib here—what de matter, massa?’ Den God say in one big voice like de tunder in de sky, ‘Where’m broder Abel?’ Den Cain turn white all ober with fear—dat de first white man, breddren.”

This theory of the origin of the white and black man is about on a par with the teaching of Captain Speke to the benighted king of Uganda. When educated Englishmen can talk such nonsense, we must not be too severe on the African.

The most unsatisfactory chapter in the book is that on “Liberia; its future and its resources:” a subject which is dismissed in less than three pages. We much regret this, as at this time a true description of Liberia from the pen of an unbiassed traveller would be of especial value. Mr. Reade says :—



THE GORILLA DANCE.

"In spite of all drawbacks, the indolence of many emigrants, and the itch for preaching which seems to torment Ethiopic humanity, as it does most low orders of men, one must allow that the progressive effort is a creditable one. We must not expect wonders, and we must reject the poetical balderdash sometimes served up in this Land of the Free, where so many are only free to starve. But the fact is, that any country, even fever-stricken Liberia, is better for the free man of colour than America."

Chapter XVIII contains an admirable description of the gorilla dance, together with an apparently truthfully executed drawing of the same, which has so many points of interest to the anthropologist that we are glad to be able to insert it.

Chapter XXI contains an admirable account of the "Equatorial Savage," from which we make the following extract:—

"These children are absurdly precocious. Africa is a great hot-house, in which they are forced by the sun, and in which they perish prematurely. They can always talk when they are twelve months old. At four or five years I have seen them listening with twinkling eyes to the immoral songs of their seniors, and at eight or nine, nature permits them to put in practice those theories, which, incredible as it may seem, they have actually studied beforehand.

"So much for savage chastity; and I fear that I can say as little for parental affection. The father wishes to have a child, partly because nature has planted within his breast an instinct for reproduction, second only in power to that of self-preservation; and partly because that child, if a son, will help him to hunt or fish, or paddle his canoe, and will give him food when he is old: if a daughter, he will sell her to a suitor, and will receive sufficient in return to make him a man of status in his tribe. He kills the sickly or crippled child, because it will cost him one more mouth to feed without affording him anything in return. . . .

"Such is the child of nature! Such the noble savage! Such the primitive condition of man, which philosophers, who had never studied it, have dared to hold up to our example!

"What is it, then, that they would have us imitate? Must we instruct our children in vice at the tenderest possible age, and sell them for marriage as soon as they arrive at puberty? Must we make our wives mothers when they are scarcely girls; treat them as slaves when they are women, and kill them when they are old? Must we place no restraint upon our passions; but abandon our youth to dissipation and debauchery, that we may have grey hairs on young heads, and all the foul diseases which spring from the diet and habits of a brute? For so does man in an uncivilised condition. The savage lives a life without a future or a past, without hope or regret, and dies the death of a coward and a dog, for whom the grave brings darkness, and nothing more."

The above extracts will give some little idea of the character of the

work. The two last chapters treat specially of the Negro: here the author has made copious use of recent anatomical and physiological researches on this subject. There is such a manifest desire to arrive at the truth, that we should desire not to be too critical on this part of the work, although we could have wished that the author had given his own opinions apart from debated scientific questions.

This volume is one rather of general interest than of scientific importance. It has, however, the somewhat rare merit of honestly describing what the author saw, and not what he would have liked to have seen. This coast journey is the first expedition undertaken by Mr. Reade, but we hope again to meet him on his travels, and on a future occasion to be favoured with more really scientific details concerning the races of man that may come under his observation.

ETHNOLOGY AND PHRENOLOGY AS AN AID TO THE BIOGRAPHER.

By J. W. JACKSON, Esq., F.A.S.L.

SHAKSPEARE.

It would seem from the established practice in all literary circles, that to write the life of a man, is a comparatively trifling affair, for which any person of scholarly education acquainted with the facts, is abundantly qualified. Perhaps, however, there is a mistake in this, and if so, the error is not the less grave, either from its antiquity or its prevalence. As true history is not a mere chronicle of events, so true biography is not a mere narration of incidents. The events and incidents are no doubt goodly material, with which a competent architect will rear a magnificent temple of symmetrical proportions and exquisite beauty; but what will a dunce do with them? In truth, biography is one of the fine arts, and demands genius of no common order for its successful achievement. Is it not, indeed, a species of soul-painting, a depicting of the inner man; a pouring of the subjective as projected upon the canvas of the objective. If not this, then is it only the fragment of a chronicle; and so, at best, but of co-ordinate rank and value. In very truth, every real biography is an evangel; a grand revelation of the *spiritual* beaming through the *actual*, of the eternal pervading the temporal, of the celestial becoming manifest in the earthly, and so demands for its successful effectuation,

not only sight, but insight; not simply learning and talent, even though of the highest, but rather the devout illumination of a worshipful disciple, aglow with the light and glory of the sun-spirit he is so religiously beholding. Thus furnished, your Galilean fisherman surpasses Plutarch, while, *longo intervallo*, poor Bozzy accomplishes the one successful feat of his otherwise miserable existence. But of all this, what does your ordinary biographer know or *feel*? absolutely nothing. It is his business to narrate a career, perhaps for the market, and so the booksellers are satisfied; he certainly is not discomforted. Yet, if a biography is to last,—if it is to become one of the polished cornerstones of literature, its utterances on departed worth and power must descend to deeper springs, and have regard to wider issues, than any such printed gossip has at all contemplated.

No man stands alone. The greatest is not isolated from his fellows or independent of the influences by which he is surrounded. Hence to thoroughly comprehend an individual you must understand the age in which he lived, for this furnishes the mould whence the elements of his being will largely take the form and fashion which they bear. Yet when you have thoroughly mastered all this, and in addition accurately determined the social and educational influences to which he was especially subjected, you have yet only acquired half the data necessary to the solution of your problem. You have at best only estimated the forces; their subject matter is still beyond you. The man as constituted by Nature is still unknown. And for this, if, as is usual, you are only of the literary class, you will be dependent upon his manifestations in thought and action. Very important indications no doubt, and when combined with other elements, of quite incalculable value in arriving at an accurate estimate of character. But you will observe they are only effects, and hence afford information simply as to the causes which have produced them. They, in short, enlighten you as to that part of your hero's character which has become patent, but are hopelessly silent on that, which from want of sufficient opportunity or adequate investigation, has remained latent. Perhaps even this is too favourable an estimate of a merely literary biography; for if the latent powers of its subject be unknown, in all probability the patent will be misapprehended, for an individual character is a whole, and cannot be estimated aright, solely from its fragmentary portions. Least of all, can this be accomplished by men ignorant of the elementary forces which constitute a human mind, and thus utterly unaccustomed to estimate the vigorous interaction maintained between passion, affection, principle, and

faculty in the hidden recesses of consciousness? The result of all this is, that literary biographies are often partial and imperfect, superficial and unsatisfactory, their stand-point being wholly from without, while a true revelation of life demands that its subject should also occasionally be contemplated from within. But for this it will be said, we have a remedy in that now rather fashionable department of literature known as autobiography. And could we obtain a genuine self-revelation this would no doubt be in part true. Not that all men are capable of revealing even themselves. But how many genuine—that is, honest and thoroughly outspoken autobiographies have we? Are not the greater part of these very amusing productions indeed gossiping recollections about *others*, rather than deep, earnest, soul-searching developments of the author's own inner being. Moreover, an autobiography, however excellent, furnishes but one side of the picture, its aspect as contemplated from within, disfigured and discoloured by the prejudice and self-love, of which even the best and most amiable are more or less the victims. And hence to complete the portrait, it is still necessary that it should be contemplated from without, and that too by an eye, that brings with it the power to see. Biography in short, like history, is a branch of science as well as literature, and demands something more than mere classical attainments for its composition.

To thoroughly understand an individual, you should know somewhat of his ethnic roots and relationships. As we have said, he does not stand alone in the world. He came here in virtue of certain predecessors, from whom he will infallibly have inherited many specialities and proclivities that ought not to be ignored. In the account of any animal, its species is esteemed of paramount importance; and justly so, for this at once decides many questions as to its habits and propensities, that might otherwise have remained matter of doubt. But are there not also well marked diversities in the type of man, that have existed apparently from time immemorial, handed down from generation to generation as an organic inheritance, like the special form of various animals, each of these carrying with it certain mental endowments and deficiencies common to the race. As between the strongly contrasted divisions, where the lines of organic demarcation are broad and palpable, this is generally admitted, so that in any notice of a Negro or Mongol, some allusion to his peculiar race could scarcely be omitted, although this is generally so managed as to be utterly devoid of any scientific value; works of this character being, as we have already remarked, usually written by men altogether ignorant of

ethnic data and their application. Nevertheless, even to such there is a glimmer of light afforded, when the lines of separation are prominent and unmistakable, as in contrasted colour or very observable form, but in the minor divisions and subdivisions, the facts of racial descent and propinquity are systematically ignored. Whether a man of eminence be predominantly of Celtic, Classic, Teutonic or Slavonic type, is usually esteemed a matter of such insignificance that it is never alluded to, save indirectly, when we are informed as a *social* and *educational* fact, of his nationality, moral *influences* being regarded as of unspeakable importance, while the very *elements* on which they have to act are commonly treated with ignorant indifference. Now while the former are not to be neglected, constituting as they do one-half of the problem, that is the *forces* by which given results have been worked out, neither should we despise the latter, as they are the subject matter on which these forces have had to operate.

Thus, for example, in any life of Raphael, his especially Italic type, as seen in the portrait by himself, should never be overlooked; while in any attempted parallel between him and his great rival Michael Angelo, the marked contrast in their genius and disposition is readily explained by the predominantly Gothic blood of the latter. Again, how superficial would be any life of Voltaire, that did not take as its keynote the fact of his Celtic descent and character. How impotently do all ordinary biographies of that model Frenchman stop short at secondary causes. Nay, to understand him thoroughly, he must not only be regarded as generically a Celt, but also of the Gallic variety, and so very different from the Spanish or British divisions of the same ancient and excitable race. Thus only can we comprehend the man, and thus only can we understand his mission, as undermining a faith by sarcasm, and sapping a throne by wit, he heralded the greatest revolution on record by arts which with us are confined to the drawing-room and the stage, and even there are limited in their range and subordinate in their rank. It was a Gallic prophet speaking to his people in their own brilliant dialect, and appealing to them by motives and through sympathies, that would have proved all but inoperative upon an alien race. As a contrast to the gay and sprightly Frenchman, behold the sturdy and stalwart champion of the Reformation, Martin Luther. Predominantly and essentially Teutonic, with perhaps just a sufficiency of the Slavonic element to give him increased basilar power, the honest, earnest, and pious German, to the best of his ability, built up one form of religion while he pulled down another. No vain scoffer was the rude monk of Erfurt, but a stern

and fierce Elijah coming forth out of the wilderness to cast down the gauge of battle before the priests of Baal. In all solemnity, and with throes of soul not to be uttered, did he enter upon his terrible conflict with the powers of darkness, going forth to the encounter not in gaunt infidelity, but with prayerful wrestlings and in living faith. And so he founded a church, still calling itself Lutheran. But what has the Gaul founded? Perhaps it were more pertinent to ask, what he has *unfounded*, for if we mistake not, dilapidation and not edification was his mission. Brave hearted and defiant German, supple and subtle Frenchman, appropriate incarnations of your respective types, how can either of you be understood except in the light of race?

It were easy to extend these examples, for many great and well marked periods in history abound with instances of such representative men. Look at the Greek Alexander; could a cautious and politic Roman have accomplished what he did, or if so, would he have achieved it by similar means, and in the same time? So again, how thoroughly Latian in every fibre of him was Julius Cæsar. What laboured strategy in his campaigns, what precalculation in his policy. Through how much of conscious effort did he climb the excelsior path which led him ultimately to the heights of empire. And who does not trace the Arab in every lineament of Mahomet? The blood of a thousand desert seers befittingly culminated in that dread prophet of the eastern wilderness. His fiery zeal, that set a world in flames, speaks of Arabia in its every deed and every utterance. Could a Plato with his refined philosophy, or even a Socrates with his practical wisdom, have achieved so much? No, we reply; it demanded the terrible *inspiration* of a Semitic soul to found a faith that in two generations raised its warrior-priests to the royal and sacerdotal supremacy of a continuous empire, that extended from the Indus to the Pillars of Hercules. What Anglo-Saxon solidity spoke out in every word and act of Cromwell; and how did the lightning-like rapidity of the Græco-Italian Buonaparte overawe an astonished world, in the earlier and better days of that greatest of modern captains. Could any but a thoroughly English stock have produced plain, sensible, honest, and able George Washington? Could any other country than France have furnished a Talleyrand? Is it possible to conceive of Britain or Germany, Holland or Sweden, providing such a man? Could aught but Hellenic acuteness of perception have reflected back the living descriptions of Homer, or anything short of Grecian accuracy of observation, have sufficed for the faultless sculp-

ture of Phidias and Praxiteles? Would less than Roman dignity and power have secured the force of Sallust and the compression of Tacitus? Was it possible for Machiavelli to have been born out of Italy, or could John Milton have come of aught but English antecedents? A little reflection on the data thus furnished by war, politics, literature, and art, may suffice to convince us of the importance of ethnic facts in connection with the biography of distinguished men, whose endowments and proclivities to be thoroughly understood, must be regarded not simply as individual specialities, but also as the grand culmination and glorious manifestation of racial capacity.

But while we thus have regard to the ethnic stock, it is also of equal importance that we should thoroughly understand the individual, not simply in those manifested effects, the blossoms of thought or fruits of action by which he may be known to the world of fact, but also in that profounder causal sphere, in that deeper realm of power and possibility, whence his life and works have proceeded, as a wondrous result, swelling up from the inexhaustible fountains of force and vitality within. Let us repeat it, a literary biography can furnish little other than the contemplation of its subject, from the superficial standpoint of effects, and yet what we really want, especially in a truly great mind, is a master key wherewith to unlock the mystic treasure house of his soul, a clue by which to penetrate to that deeper realm of elemental force, whose products may take their form from influences without, but derive their quality from endowments within. To fully understand what he has done, we must know what he could have done. To thoroughly comprehend his actual, we must know the relation it bears to his possible, for thus only can we correctly estimate what proportion of his being has come forth into manifestation. Now to accomplish this satisfactorily we affirm that phrenology, based on and combined with the ethnic data to which we have already alluded, is absolutely necessary, that without this there will be at best but opinion and probability, while with it there is the certainty of true knowledge, and that accuracy and precision to which science alone can conduce.

As example is preferable to precept, we will illustrate our meaning by taking the great English dramatist Shakespeare, as the subject of an ethno-phrenological development, accessory to and supplementary of an ordinary literary life of that prince of modern poets. Born in the central county of England, which nevertheless borders on Wales, the bard of Avon was doubtless by descent of that well mingled and thoroughly amalgamated Celto-Teutonic race, familiarly known as the

Anglo-Saxon, but in reality consisting of elements from nearly every Caucasian stock in Europe, with probably a remote tinge even from the Mongolic. When well matured, this will present a Celtic basis of well developed nerve and its accompanying intellectuality and susceptibility, thoroughly baptised by and intimately combined with the muscular and osseous force characteristic of the more massive Teuton. The latter, however, is an alien element, ever tending to "shell off" in its coarser forms, preparatory to the reemergence of the central, because over this area, primal Celtic type, on which it was induced by the normal process of a conquering immigration, when the aborigines had become weak by the exhausting effects of a previous era of civilisation. Of this process arrived at maturity, Shakspeare is an admirable example, and as such may be regarded, even racially, as the prophetic man of the future. With all the refinement, delicacy and susceptibility, with all the accuracy of perception, intensity of feeling, rapidity of thought, and splendour of imagination, which attach to the Celt in his highest forms and under his most cultured aspect, he united the grandeur and power, the moral altitude, and the intellectual expansion of the larger Teutonic nature, as seen under some phases in the Scandinavian, and under others in the German. In one beautifully harmonious being, he combined the burning fire of Celtic passion with the sustained and genial warmth of Teutonic affection; while intellectually he possessed the brilliant wit of the former, with occasionally the grim humour of the latter. So in his characters we see here the native politeness of the Celt, and there the bluff heartiness of the Teuton; his own great, expansive and richly endowed nature covering and embracing the two extremes, with of course all their intermediates.

In a sense, then, we may say that Shakspeare is the finished or classical type of the modern British man, the ethnic bourne whereto the race has gradually yet surely tended from the time of the great Saxon and Scandinavian immigration. Nor are the indications of this to be expressed only in vague and general terms; we may discover the same fact in the special characteristics and particular features of his organisation. Thus, although nervous as a Celt, the face, in perfect accordance with the magnificent coronal altitude of the head, presents, with all its poetic and artistic refinement, the calmly reflective expression of a profoundly meditative Teuton. Sage and bard in one majestic nature, the well refined result of the union of these two great types, which by their ethnic marriage have produced this glorious heir, possessed of Celtic intelligence without its overstrained excita-

bility, and of Teutonic calm and self-possession without their accompanying materiality and phlegm. Similar indications are afforded by the frame, beautifully proportioned and of medium stature, in which there is Celtic fibre without its worn and wasted wiryness, and Teutonic muscle without its ponderosity and heaviness. A well-built, well-poised man, whose body was admirably fitted to be the servant of his fair and harmonious soul, the worthy exponent and outcome of his resplendent spirit, the predestined light-bearer of the centuries.

But we may descend into yet minuter details. We can contemplate this born king of men phrenologically and physiognomically, as well as ethnically. We can read the sublilities of that lofty and commanding brow, and trace the excelsior yearnings of that pure and beautiful face. We can thus not only say what he actually was, but what, under other circumstances and influences, he might have been. We can thus not only measure his realities, but also his possibilities, and show the world how much, after all, of latent force lay hidden in that magnificent soul, whose moral and intellectual plenitude, so far from being exhausted, was only indicated by those wondrous dramas which are so justly the admiration of the world. The greatest poet that ever lived, he might equally have been the profoundest metaphysician or ablest statesman the world ever beheld. The Elizabethan age wanted an archdramatist, and he supplied its necessities; but, had it needed a philosophy or a faith, he could equally, with due evocation, have provided for its grander requirements. But, as these are strong assertions, that might not go unchallenged or be accepted independently of proof, we will now attempt their demonstration from the data already indicated.

We have portraits of Shakspeare that are authentic. The only approach to a bust of him, however, is the one at Stratford, whose general correctness is vouched for both by internal evidence and by its agreement in all essentials with the portraits. From these we learn that the basis of the brain was by no means large, there being only a sufficiency of passional impulse to give practical energy, and afford by personal experience an accurate conception of the working of passion in others. Such a being could never be grossly sensual; and, if there was any phase of character entirely beyond his power of realisation, it was that of a merely animal voluptuary, like Vitellius or Heliogabalus. And, accordingly, we find that these are not the characters he ever paints, the self-indulgence of Sir John Falstaff being relieved by wit and good nature, and his Caliban being an avowed monster. The affections, not only as seen in the bust, but as reflected from the face in the portraits, are of

sufficient strength to produce warmth and geniality of feeling in all the varied relationships of life, but they have neither the volume nor intensity that would render them independent of the supervision of the judgment or the control of the moral principles. A refining element from the higher nature would ever pervade both them and the passions, lighting up and transfiguring these inferior elements as with the supernal glory of a purer and nobler sphere. For let us never forget that, while the entire organisation of Shakspeare demonstrates that he was an universal and truly representative man, it at the same time clearly shows the entire predominance of the higher over the lower elements in his being, which was, indeed, cast in an essentially spiritual, and, if we may so express ourselves, transcendental mould.

And this brings us to the region of the sentiments, where we shall be at war with his critics, and perhaps not quite in harmony with the general estimate of the world. Society, as a rule, judges a man very properly, not by his promises, but his fulfilments, estimating his capabilities by his performances. But it is very doubtful whether this good practical rule applies with equal force to the career of genius, a celestial visitant usually beyond our parallax, a meteor flash suddenly sent from the inmost to the outmost, and in reality a heavenly revelation rather than a natural phenomenon. Playwrights can scarcely be expected to fulfil the rôle of prophets. Their vocation may not be necessarily immoral; but there are scenes which they must represent, and characters which they must body forth, not perchance in exact accordance with their sentiments, but yet in perfect keeping with the character and requirements of the piece on which they are engaged. The acting drama, too, let it be remembered, is a living institution, and as such must exist in harmony with the manners and spirit of the times in which its representations take place. This adequately explains the more objectionable passages in the works of the Swan of Avon: they were not the product of his inner and higher inspirations, but apt adaptations to the present and professional requirements of the Elizabethan stage. They were not the outpourings of the man, but the utterances of the age, and as such may be at once dismissed as foreign to the matter we have in hand.

Let us now, then, without prejudice, contemplate this great spirit under his moral aspect, as this was reflected in his material organisation. And here the first thing which must strike a phrenological eye is the unusual altitude and beautiful arching of the entire coronal region. Every sentiment is fully developed, all are in perfect har-

mony, and, as a whole and in combination, they cannot fail to exercise a thoroughly predominant and commanding influence over the entire character. The result of this fine union of perfect balance with vast power, must be a series of moral manifestations, under all circumstances of a high, but under favourable and evocative influences, of the very highest order. There is the firmness requisite for a manly will, and for the steady persistence of heroic endeavour in the achievement of a difficult purpose, united with a caution that, in combination with the superior intellectual faculties, cannot fail to provide forethought in the commencement, with prudence in the management of every "enterprise of great pith and moment". Thus there may be perseverance without obstinacy, and forethought without vacillation. There is an exalted conscientiousness calculated to give the very finest sense of honour. Rectitude must be natural to such a mind. Integrity is the atmosphere of such a spirit. Not that this will give birth to the hardness of a legal, or the severity of a merely judicial character, for justice is here indeed tempered with mercy: the crowning glory of that lofty brow being a benevolencè so elevated and expansive as to indicate a wide-spread philanthropy and all-embracing charity, capable of sympathising with the most distant, and pardoning the most guilty of mankind. Here we have in large part the key to his kindly portraiture of humanity. Such a man could not be a misanthrope. With his genial affections and gentle beneficence, he could not fail to love his fellow-men, and interpret even their errors under the most favourable aspect. There was a large-heartedness, from which no form of being could be wholly excluded. Such a soul, in very truth so grand and royal, like the sun, lighted and warmed all it looked upon; at once transfiguring everything with the glory and beauty of the true poet, and yet loving all things with the ardour of a real man.

Thus far, perhaps, we may carry with us the sympathies and even the assent of our readers; but few, probably, will be prepared to follow us in the observations we are now about to make on the religious character of our great dramatist. And yet they are based on the same evidence as the foregoing. They rest on a similar foundation of organic facts, and will be equally accepted by all duly prepared and competent phrenologists. The entire coronal region of Shakespeare was so elevated, and the central line through benevolence and comparison so well developed, as to unmistakably indicate immense power in veneration. With a nature so harmonious in all other respects, it is not probable, and, indeed, scarcely possible, that this

important organ should have been out of due keeping with its surroundings. So that, although we have no cast, unless, indeed, we are prepared to accept that in possession of Professor Owen as genuine, and can only be guided by portraits and busts, we are yet justified in asserting that his higher proclivities were not only grandly devotional, but that his entire being was framed in a worshipful mould. From the very nature of his profession, however, this could only attain to an imperfect manifestation. The Globe theatre was scarcely a temple to the Highest; nor were the services and utterances demanded of its highpriest exactly those compatible with the mission of a prophet. The world just then wanted an archplaywright, and it got him.

It is only the truly loyal soul that can be innately royal. It was Shakspeare's reverence that gave him the key to kingly hearts. The author was at home in the throne-room of princes and the council-chamber of nations, because the man would have entered august presences with chivalrous fealty. He understood greatness, because he regarded it worshipfully; not with the vulgar wonder, and blind abasement of an inferior, but with the noble sympathy and enlightened appreciation of an equal mind. There is nothing stilted in his kings; nothing forced in his lords. His genius was obviously put to no strain for their embodiment. The most accomplished courtier could not have given them better manners; the profoundest statesman could not have furnished them with grander thoughts. He is equal to all occasions, and adequate to every character, the lowest as well as the highest. Now a Coriolanus, then a lackey; here a Cæsar, and there a Caliban. His insight is supreme, because his instruments were reverence and sympathy. With these he unlocks all hearts, and is effectually present with every form of consciousness. He knows all, because he loves and reveres all. Truly as we have said a prophetic soul, but born in an age devoid of the higher mission, and so compelled to reveal himself through those meaner offices, in which, nevertheless, his inherent royalty is clearly discernible.

Not that he could have accomplished even this without an intellect in all respects fully proportionate to his moral endowments. Devoid of adequate faculty he would have wanted that harmony which constitutes the glory of his being. His powers were all coordinate. Vast and varied as were his gifts, he was yet no onesided giant, but a perfect man. We suppose that no one ever looked upon that god-like brow, towering aloft in its sublime altitude; a veritable mountain of intellect, so calm and majestic, like Omnipotence in repose, without

feeling that here at least was a monarch of mind. The most unob-servant must be impressed with so grand a presence, however incapable of analysing the source of their sentiments. To the skilled and experienced phrenologist, however, all this presents a volume of un-wonted significance; the organisation of the man being far greater than the works of the author, the former indicating the possible, and the latter only manifesting the actual of this rarely gifted being. By the first, we mount up, so far as is possible on the merely material plane, to the wellhead of causation; through the last we are limited simply to the sphere of effects, as conditioned by circumstances.

Let it never be supposed that the soul of any man can be bound up between the covers of a book, least of all, such a one as we are now contemplating. It were, indeed a rather ample *world* as we take it, that would fully contain him and his aspirations. For here in very truth, if anywhere, was a mind of the very highest, that is the creative order, a veritable poet in the grander sense of that great epithet, whose works were but a fragmentary index of his capability. The intellect of Shakspeare was perhaps more nearly universal, than that of any masterspirit who has emerged to the surface, and been exposed to the critical investigation of posterity. In him perception and memory, thought and imagination, were all effectually developed, and beautifully proportioned. From the refinement of his temperament, and the harmony of his organisation, he probably possessed the truest soul-mirror ever accorded to man. He reflected faithfully what he perceived accurately. There was no distortion in his images; no undue exaggeration of one feature with a corresponding diminution of another. His ideas were transcripts from nature, and hence were not only true to his own age, but will be equally true to all time. Thus it is we feel that his characters are veritable men and women, not as is so often the case in dramatic composition, mere stage automata without any reality behind them. Not that this lifelike accuracy of portraiture could have been produced by the intellect alone, however richly endowed this portion of his nature might have been. To produce such a result, as already observed, it was necessary that there should be a corresponding harmony in the moral and affectional elements of his being, which might thus co-operate with the intellectual, and constitute, in their tripartite union, the perfection of human character and capability.

The true poet must be no merely literary scribbler, the mechanical maker of harmonious verses. This faculty of good writing constitutes indeed but one of the lower necessities of his craft. In addition to

this, not only must he have the visioned eye, which sees the open secret, never revealed in its grander significance but to the true seer, but he must also be artist, architect, and musician, uniting in himself the whole vast category of endowment, which is usually divided among the priesthood of the beautiful. This Shakspeare did, and that too in a supereminent degree. Look at that fairly arched eyebrow, so perfectly in accordance with the symmetrically developed features of that more than classic, that spiritual face, of which it forms a befitting and harmoniously component part. What a faculty for colour, form, outline, and perspective is there indicated to the duly qualified observer. An eyebrow worthy of Titian. No doubt this man painted with the pen, and that too in a style which leaves us nothing to regret that he never used the pencil; but when we contemplate these fine executive powers in combination with his splendid ideality and constructiveness, it becomes at once obvious that in gaining its greatest dramatist the world lost its second Raphael. Perhaps, indeed, we ought rather to say its first, for here was a power for composition whence a thousand Transfigurations might have been derived. No wonder his stage scenes are an unfailing source of inspiration to artists. How, indeed, could they be otherwise, for are they not cartoons of ever varied life, drawn by a master-hand, whose equal the world has never yet beheld?

It must not be supposed that all architects build with stone. What, indeed, is a great epic but a magnificent temple of ideas. Your Iliad is grander than the Parthenon. The Divina Commedia transcends all Minsters, and looks down with sublime pity even on St. Peter's; while no man we suppose would compare St. Paul's to that palace of thought, which the infernals reared beneath the spiritual eye of the blind old bard of Britain's stormy isle. It is the same with the plot of a perfect drama. It is a temple of exquisite design and elaborate workmanship, demanding architectural genius of the highest order. What Doric pile ever equalled the simplicity and grandeur, the power and sublimity of the Prometheus Unbound. And what Gothic cathedral or Norman castle could be compared to Hamlet or Richard the Third?

There was a period when the sage and poet were one, when all high utterances were essentially rhythmic in form and idealistic in spirit, when the great man was also the good, and genius ever tended to culminate in prophesy. All these things have doubtless been much changed in these latter centuries, but whether for the better may admit of rather grave doubt. The clerisy of the land are now sepa-

rated into many orders. First the men of science and the men of letters, each again arranged into many subdivisions, now, alas, so isolated and estranged, in accordance with the analytical and disintegrative spirit of our age, that their several members are apt occasionally to forget that they once were formally, and still are essentially, brethren of the same exalted craft. We want a reconstitution not only of the priesthood of letters, but also of the hierarchy of intellect, now fallen like so much else into a state of chaotic ruin. And thus then it has come to pass that William of Stratford was regarded, and perhaps even regarded himself, as simply a playwright and poet, and not at all as a prophet, it being his worshipful vocation, among other things, to afford adequate amusement at the Globe Theatre to the court and the apprentices of London. And in the assiduous and praiseworthy prosecution of this his "lawful calling," it was that he produced those wondrous dramas which we are sometimes pleased to call immortal, but which to him were probably simple matters of business, conducing in their appointed way to a healthy condition of the exchequer. And yet this same playwright had in him, beyond question, a true prophetic voice of the deepest significance, had the world only been pleased to listen to its inspired utterances. Look, as we have said, at that lofty veneration, crowning the most God-like brow of these latter generations, and say whether the religious element could have been absent from such a soul. Here in very truth, if anywhere, was a man full of all devoutness, profoundly worshipful in his innermost spirit, to whom real irreverence of any kind was impossible. An inherently and constitutionally religious man, who indeed saw into the very heart of things, mainly because he loved, and in the better sense idolised them. Then, in strictest accordance with this exalted moral nature, so magnificently developed along the central line, behold the powerful comparison, powerful, yet blending so harmoniously with causality. What an inexhaustible capacity for apt and beautiful illustration lies there. What apologues and parables, bright and glorious in all the radiant imagery of genius, went down to the grave silently with this successful stage-manager. Alas, with all respect be it spoken, was there not here also a divine "*Tecton*," who yet never emerged out of the "shop," never taught upon his higher plane, was never baptised with fire from heaven, was never called to his most heavenly mission, the world as we have said in his day wanting not a prophet but a playwright, in which capacity, accordingly, the Godsent in the guise of a servant, as is their wont, ministered unto its requirements.

Society does not want prophets, it never did, and probably never will; the powers that be both in church and state, regarding all such, whatever their credentials and pretensions, as unwelcome and intrusive. But it does want sages and philosophers, at all events can endure them with more equanimity than their kinsmen the seers, perhaps because they do not knock quite so hard at the accepted respectabilities, what we call orthodoxies, as their sterner and more earnest brethren. And yet here also the world had an unspeakable loss in this William of Stratford. Never since the days of Plato has a more spiritually gifted and metaphysically endowed intellect been manifested for the enlightenment of men. Of this, what bright scintillations do we now and then obtain in the ordinary course of his plays, in very truth "sparks from the anvil" at which this Titanic Tecton is labouring, with such demiurgic force, to frame, so far as in him lies, a grim chaos into a beautiful creation.

"Our little life is rounded with a sleep."

What depths of Pythagorean lore, what farstretching glimpses of antenatal existence, what a grasp of the great and glorious thought, that we are not only immortal but *eternal*, in that pregnant line,

"We are such stuff as dreams are made of,"

is another. What a Brahminical perception of the unreality of appearance, what a profound intuition that all this seemingly solid and substantial world is after all but a cheating semblance, the maia or divine delusion by which the senses are mocked, but through which the soul is nevertheless educated. What more than Platonic spiritualities were in this man, folded up for the most part silently, not being often wanted perchance in that particular craft, to which as court playwright, he was specially devoted. Truly we have had Thomas Hobbes and John Locke, David Hume and Bishop Berkeley, who in their formal and laborious way have endeavoured to cast some few rays of light on the abstruse problems of our inner life, but if we mistake not, here was a master of psychology, who with a few strokes of his magician's wand would have revealed more than they could have put into many volumes. But the world of Queen Bess did not want moral philosophy but amusement, and William of Stratford knew how to supply its necessities.

THE PROCEEDINGS OF THE ANTHROPOLOGICAL
SOCIETY OF PARIS.*

THE third number of the French Society's *Bulletin*, first presents to our notice a continuation of M. Simonot's article (alluded to in the *Anthropological Review*, vol. i, p. 378), on the peoples of French Senegal. After briefly referring to the difficulty of tracing to a common origin the various languages of Senegambia, the author of the paper sums up in the following brief conclusions:—

“That the influence of media may induce deviations from a single form, but that these deviations are always in the direction of the original form, and do not constitute an actual transmutation like that produced by crossing.”

“That without tradition man would long ago have had his genera, species and varieties, like all the other series of the animal scale.”

“That the primitive unity of language is still a question to be solved; and that its solution will only be definitely arrived at when it is shown that all peoples possess an invariable faculty of articulation.”

In order to disprove a statement of M. Bertillon, relative to the diminution of stature of the French people, M. Boudin submitted to the society the following table of the proportion of tall men in 10,000, in the undermentioned years:—

HEIGHT.		YEARS.		
m.	m.	1836-40.	1846-50.	1865-60.
1-761	to 1-787	.... 174	.... 159	.... 163
1-788	” 1-814	.... 72	.... 69	.... 90
1-815	” 1-841	.... 24	.... 21	.... 27
1-842	” 1-868	.... 5	.... 5	.... 6
1-869	” 1-895	.... 2	.... 2	.... 2
1-896	” 1-922	.... 0-7	.... 0-5	.... 0-2
1-923	and above	.... 2	.... 0-8	.... 0-2

In reply, M. Bertillon said that the difference proceeded from his having calculated from the restoration, whilst M. Boudin's calculations only commenced with 1836. M. Lagneau quoted M. d'Omalius d'Halloy, to show that France was divisible into two great ethnic groups; one including the departments of the North-east, which furnished a great number of tall men; the other, those of the South-west, containing only a few men of large stature. He then gave an

* *Bulletins de la Société d'Anthropologie de Paris*, vol. iv, *Sème Fascicule*. May to August 1863.

elaborate account of the various races which had settled in different departments, and from whom local peculiarities of stature might have been derived. M. Boudin remarked, that in 10,000 men examined for military service in 1831, 928 were rejected as below the standard, whilst in 1860, the number rejected only amounted to 594. M. Broca observed that other than ethnic causes might induce diminution of stature; he agreed with the principal part of M. Boudin's statistics. M. Pruner-Bey attributed the low stature of the inhabitants of Silesia and the Black Forest to defective nourishment. This interesting discussion is followed by M. de Quatrefages's description of the Abbeville jaw, which has already been given at length in our columns.

A paper by M. Schaaffhausen on the Neanderthal skull, followed by one on the same subject by M. Pruner-Bey, occupy the next place. M. Schaaffhausen denies that this skull approaches nearer that of the ape, or shows in its general characteristics a smaller degree of development, than the skulls belonging to some savage tribes of our own day. He shows Mr. Huxley's assertion, that the posterior portion of the skull is more abnormal than the anterior, to be without foundation, and that all the peculiarities which he points out are equally discernible in the skulls of other inferior races. The cast of the brain shows a great resemblance to that of an Australian presented to the society at the same time, so far as concerns the smallness of its development.

We next find a continuation of M. Bertillon's paper on *Anthropological Method*, in which he cites various passages from Quatrefages, Isidore Geoffroy Saint Hilaire, etc., as examples of what he calls the syllogistic or scholastic system, as opposed to the scientific. His definition of this system, the tendency of which he denounces as scientifically vicious, is that it consists in foreseeing, and consequently interpreting, the observation of facts from the point of view of a sort of fixed idea, the fascination of which greatly prejudices our logic, and influences the healthy interpretation of the small number of facts possessed by Anthropology, which do not authorise us to arrive at any general conclusion. Ultimate conclusions would appear to be the enemy against which M. Bertillon considers it his duty to keep himself and his brethren ever on the watch. His notion of the mission of a scientific body is, "to collect facts, to arrange them in series, to group them, to draw from them prudently immediate (*prochaines*) conclusions, and to throw aside every other desire but that of discovering truth." This is certainly very good advice, especially to a society which is commencing a new subject of study, and which is,

therefore, more likely to attach undue importance to discoveries, which wider investigation in the same field may show to have no very general signification. M. Bertillon gives a somewhat happy illustration from the case of the President (at that time M. Quatrefages), and Secretary, M. Broca, of the French Society, who he declares possess an equal knowledge of Anthropological facts with equal powers for their application, and yet they have arrived at exactly opposite results by inductive reasoning from those facts. He then expounds his system of classification, which consists in arranging all measurements of the same species in order and size, and publishing the entire series which results from this arrangement. He gives several examples of the practical application of this system, as in the case of measurements of recruits, &c. The last portion of this very able and elegantly written paper is devoted to a consideration of the fallacies, which the author considers have arisen from giving an undue importance to the influences of media. A description by M. Pruner-Bey, of a brachycephalic skull, belonging to the stone age forms, the subject of the next paper. This skull measured 129 millimetres in length. The thickest part of the cranial walls was 12 millimetres. The forehead appeared deficient; it is retrocedent above the supraciliary arches, which are much developed as in the apes. The upper border of the orbit is quite straight, from which it might be inferred that the *angulus externus palpebrarum* was elevated as in the Chinese. He considers that the brachycephalic type of a part of the ancient Tuscan inhabitants, belonged, probably, to the Iberian and Ligurian stocks. Brachycephali have also been observed in the Abruzzi, and in Sicily.

M. de Quatrefages furnishes a short paper upon the influence of media, in which he adduces the origin in America of the Niassa ox, and the species without horns. He placed before the society a photograph of the only head of the former species at present in Europe, the face of which he describes as appearing to have suffered a general contraction, and to present some analogy; and to present an appearance somewhat analogous with that of the bull-dog, the inferior maxillary protruding beyond the superior. He observes that, as this conformation renders feeding more difficult; man would have no inducement to encourage the perpetuation of this variety, yet it retains its peculiar characters in spite of constant crossing, and transmits them in every cross with the ordinary species. M. de Quatrefages deduces from this fact conclusions in favour of the powerful influence of media upon the animal organism.

An interesting paper upon the remains found on the site of the

Convent of the Mathurins at Paris, in June 1863, is given by M. Louis Leguay, from the researches of M. Arthur Forgeais. These remains, consisting of two skulls with a portion of a third, would appear, from the objects discovered with them, consisting of specimens of mediæval pottery, to belong to the twelfth or thirteenth century.

M. Bonté contributes an elaborate paper occupying seventy pages of the Bulletin, entitled an "Analytical résumé of facts addressed in support of Medial Influence," which he considers one of the most fundamental questions of Anthropological science. The end which he proposes to himself in this communication, is to bring to their just value all the facts which have been considered up to the present time to be proofs of the influence of media. M. de Quatrefages describes a medium as "the collection of whatever conditions or influences, physical, intellectual or moral, are capable of acting upon organised beings." Taking this definition as his starting point, M. Bonté first discusses the proposition, that as media possess an immense influence upon animals and plants, they ought necessarily to have the same effect upon the human race; he shows that the analogy fails, in the first place, because, whereas nature has placed plants and animals in certain determined positions upon the earth's surface, she has endowed man with a desire of moving from place to place. Therefore, if man be cosmopolitan, and can adapt himself to any climate, it proves that climate has no influence upon his organisation; if man be incapable, on the other hand, of existing in all climates, it is a proof that his organisation is inflexible, and cannot be altered by, or accommodated to, the new climates in which he may find himself. The second argument against this analogy is founded upon the difference between the chemical composition of man and the vegetable; and the third on the difference in their relations with the atmosphere. Lastly, M. Bonté considers that the influences brought to bear upon plants or animals have been for the most part human or artificial influences, and cannot, therefore, be adduced as proofs in argument upon the operations of nature; that the fact of an animal being domesticated is an instance of violence done to nature, and its being restored to its savage state a mere cessation of that violence which results in a return to the natural state. He then goes on to say that one of two things must exist, viz.: either that the influence of media upon man is evident, as has been maintained, in which case man himself will furnish sufficient proof without looking elsewhere; or, on the contrary, this action is doubtful, in which case it will be better to wait until we obtain more evidence on the subject. With reference to the in-

fluence of geographical conditions upon the various races of man, M. Bonté brings forward a large number of alleged instances of climatic action from Prichard, and M. de Quatrefages, in which those writers have endeavoured to show that a regular proportion exists between the heat of various climates, and the darkness of the skin of their inhabitants. He then adduces several of cases in which the darker tribes are found in the colder climates; whilst those who live in hotter localities are of much lighter colour. He then mentions the fact, that the inhabitants of large towns, who are necessarily less exposed to the sun than those of the country, are generally darker, as admitted by Prichard. The second theory which he discusses, is the influence upon the colour of the skin of a higher or lower, a damp or dry locality. With regard to the influence of food upon colour, M. Bonté only admits that a liberal supply will, by bringing the subject into a healthy state, perfect his natural colour, so that it will, he says, render the negro more black, the white man more white. We regret that we cannot follow this interesting paper through its details. The conclusion to which it arrives, is that "We have seen, as to the system of media, *either facts positively denied as facts, or explained by reasons altogether independent of the action of media.*"

Correspondence.

THE NEANDERTHAL SKULL.

To the Editor of the Anthropological Review.

SIR,—The enclosed letter, which I have just received from my able and energetic friend Dr. Pruner-Bey, will be of interest to your readers, if they think further arguments necessary to disprove the alleged affinity between the Neanderthal man and modern Australians.

C. CARTER BLAKE.

April 22nd, 1864.

"28, Place de St. Victor, Paris, 19th April, 1864.

"MOST EXCELLENT SIR,—I have twice to thank you, first of all for your kind attention to me personally, and in the second instance in the name of true science. With regard to this, I take the liberty to send you a copy taken from my memory, of what I had to submit to our Society here on the 7th of this month, about the man of Neanderthal. He is, what is of importance to me to establish before all, a *Celt*. 1. For, besides the large development of the frontal sinuses,

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there is, so far as the exterior surface is concerned, nothing in this skull deviating from the old Celtic type. 2. He is a *Celt*, because the cast of the cranial cavity, being compared by myself with sixty casts belonging to the most different human races, agrees with that of the *modern* Irish Celt (of which there is a very fine specimen in my collection). 3. He is a *Celt*; for one particularity regarding the right angle formed by the neck of the head of the femur with the body of this bone, as it is observable on the femur of the Neanderthal man, has been found by me chiefly on femurs arrived from 'Boulogne-sur-mer', and found with very ancient and true Celtic skulls. Besides these cases, the same particularity is to be seen on the femur of the finest skeleton in the Museum, that of a Celtic woman of Great Britain.

"Tell, if you please, the gentlemen who still talk about Australians in comparison with the Neanderthal man:—1. That my friend Schaaffhausen has shown the futility of this by exactly established measurements. 2. That if there is, besides the true Australian type, recognisable at twenty paces to every one who has taken the trouble to go near to it, another one with more lengthened and elliptic skull, found in the northern part of Australia; this last type belongs to immigrants from the Nigrific islands, as for instance, from New Guinea, the New Hebrides, New Caledonia, etc.

"Still, nobody who has measured simply the length, and breadth, as also the circumference of such Nigrific skulls, will ever again *confound* them with the long-headed Celt of Neanderthal; for here, as in almost all the ancient Celts, the circumference as well as the transversal diameter are much larger than in those very improperly so-called Australian skulls, which are distinguished even by the *simplicity and form of their sutures* (a thing apparently so insignificant as this) from old and new European skulls. It is not our fault, if gentlemen at Sydney are in a loss . . .

"Last of all, the most learned and acutely observing Professor King will allow me to observe to him in particular:—

"1. That the *elliptic* form (segmental) of the occiput as well as of the coronal is truly characterising the Celtic type; that a triangular occipital squama is one of the many distinguishing characteristics of the old pre-Celtic brachycephalic skull, etc.

"2. That in consequence of the large development of the frontal sinuses, there is *outside*, of course, a receding forehead (internally it is quite different, as may be seen on the cast).

"3. That the badly advised legion of *copyists* still put in circulation the error about the absence of frontal sinuses in Australian, Tasmanian, etc. skulls, generally. Truly they are absent in some, but present in others of the skulls I studied belonging to these races.

"Excuse, sir, the liberty I take in this involuntary relief to my feelings. I have no motive to offend anybody of our worthy colleagues; but, pardon me, sometimes I lose patience, even here in the metropolis of civility. I have the honour to call myself, sir,

"Your très-humble élève et serviteur,

"DR PRUNER-BEY."

ACTS XVII, 26.

SIR,—Your correspondent in No. III. of the *Anthropological Review*, who gives the MS. readings of Acts xvii, 26, has omitted that of, perhaps, the oldest and best of them all.

The Codex Sinaiticus, omits *haimatos*. "It is," says Mr. Bradshaw, the keeper of the MSS. in the University Library of Cambridge, "a book written in uncial characters of the fourth, or at the latest, fifth century, according to all the authorities. As for the value of its readings, it takes its stand with the very best copies now remaining."

I am, Sir, your obedient Servant,

T. BENDYSHE.

88, Cambridge-street, Pimlico.

Miscellanea Anthropologica.

Meaning of the Term Anthropology. "Immediately the Anthropological Society was founded, an outcry was raised against its members for introducing a new word into the English language, which, said their opponents, had its meaning already expressed in the well-known word 'ethnology.' This feeling still exists, and therefore, we are glad to perceive that the learned president of the Anthropological Society has taken the subject of the controversy in hand. At a late meeting (January 5th), Dr. Hunt, in delivering the annual address, observed: 'If ethnology means the science of races, then it is assuming what has yet to be proved. Personally, I believe in the existence of races, and, consequently, that there is a science of 'ethnology;' but how objectionable the word must be to those who do not believe in races can be easily conceived. In the word 'anthropology' there is none of these gratuitous assumptions. It assumes nothing, and merely means, the science of man, or mankind. Some men in this country have expressed themselves adverse to the introduction of what they please to call a new word in the language, and also that 'anthropology' means exactly the same thing as 'ethnology.' Both statements are equally erroneous. 'Anthropology' is not a new word, nor does it mean at all the same thing as 'ethnology.' In Germany, France, and even in America, the word 'anthropology' has long been introduced, and with exactly the same meaning which we attach to it. Indeed, I think I may affirm, that there is not a scientific man of any eminence in Germany, France, or America, who now ever confuses the meaning of the two words—'anthropology' and 'ethnology.'"—*Popular Science Review.*

Not man, but man-like. We extract the following from a pamphlet published by Mr. William Thomson, of Melbourne, in reply to Professor Holford. A controversy has been raging in the antipodes, with the same bitterness and passion as these questions have been argued in England.

"How far the necessity for propitiating persons and prejudices is

answerable for these opinions is very apparent; and, just as the older anatomist has throughout had priority, so had he the greatest plausibility in these matters. Moderns must conciliate public opinion—he had only his patron. They bend the neck of science to the yoke of Demos, as he did to gentler graith, with a controlling power beyond and above both. Inscribing his book to the Lord Chancellor, Tyson archly observes of his pygmie that, ‘The animal of which I have given the anatomy coming nearest to mankind, seems the nexus of the animal and rational, as your lordship and those of your high rank and order for knowledge and wisdom, approaching nearest to that kind of being which is next above us, connect the visible and invisible world.’ In this paragon of flattering dedications, the author adroitly conciliates a hearing for his theory by an illustration of it. Vain man is willing to be flattered by his improbability; but nothing must, ‘with Roman severity, admonish the conqueror that he is but dust.’ The evidences of a progressive enlightenment are not apparent in this direction: for, as in the *Religio Medici*, all are denounced as infidels and atheists who deny the reality of witches, so are those denounced who dare question the dogma of specific creations. In this branding process the *Edinburgh Review* and its Melbourne namesake, as the zenith and nadir of the literary world, hold up conspicuous lights. Their aurora, boreal and austral, are as things intermediate between telluric coruscations and the sun, and must be typical of an ascending scale, even among the illuminati. The president of the Anthropological Society of London, lately alluded to a prevalent belief upon the Continent that cultivators of science in England are ‘priest-ridden, and afraid to give utterance to their scientific opinions through fear of public scandal.’ Had he been resident among us, he would not have defended all his countrymen against this as a gross calumny. That ‘the question of the origin of man, which owing to assumed vested interests, ignorance and superstition, had long been a forbidden subject of controversy, has now forced itself not only on the attention of men of science, but on that of the public generally,’ may truly enough be said of the public at home; but here the dread of incurring the displeasure of hierarchs and sacerdotes, or that imbecility which is tortured by the bugbear of singularity, still deters too many from more than furtive studies of these mysteries of Nature. However, no one can now be ridiculed as the advocate of doctrines discarded by every scientific man in Europe. True or false, they are at least not obsolete. Fashion, failing intelligence, will make them familiar, perhaps even in Melbourne, and the prediction made in *The Argus*, on the 3rd of August, 1858, that doctrines now confined to the studious and candid few, will eventually become the creed of the learned, and finally among the elementary principles of education, will be verified. ‘The day is long gone by when the probability of transmutation could be sneered down as the phantasm of a dreamer, or the product of the scepticism of an infidel. The possibility, nay, even the extreme likelihood, of such a law being eventually established is now rapidly becoming a tolerated doctrine in the creed of deep-thinking, scientific men,’ is the statement of one of Huxley’s severest

critics*—of one who was a progressionist when Huxley supported views the reverse of what he now advocates. This recognition of truth will be a fresh proof of the supremacy of human reason, and one of its highest triumphs. Then will man better look 'from Nature up to Nature's God'—better than by gazing through the distorting media of invented creeds and cunning formularies. The faggot ever was an uncertain beacon of the truth, but it shows up a new light. A worthy minister facetiously suggests that man is the only animal that uses a gridiron, which may be called a homely way of bringing an infidel opinion to the stake."

We purpose to allude to the whole questions here discussed at length at a future time, and the proximate publication of M. Gratiolet's work on the myology of the gorilla, will no doubt throw much light on the subject.

Anthropology and Geology. Mr. George E. Roberts, in an admirable pamphlet,† makes the following remarks respecting the present state of the science of man:—

"So much light can be, and is being, thrown upon geological phenomena, by studying the forces of nature now operating in physical changes, and in the regulation of animal life, that any sketch of the position to which the science has attained must be incomplete if it ends at the period which, according to our present knowledge, marks the appearance of man.

"And here it may be remarked, that the mist which enshrouds the early physical history of the earth is so far recurrent, that the latest scene in the panorama (that which fills up the space between geological history and the point in time lit by the furthest-traced tradition) is one of equal uncertainty as regards the reliability of its data; and yet the cloud is not one arising from an elemental war which ended the pre-human kingdom, and prepared the ground for the erection of the new fabric by divesting it of its former occupants. There is no evidence of any grand convulsion of nature separating purely geological history from that chronicle of natural events which begins at the birth of man; 'no trace,' as Mr. Jukes has remarked, 'of any hard boundary-line between the human and the pre-human period of the earth's natural history; for the present is but a part of the past.'

"Man, as an integer of the life-problem, slowly worked out through the æons of the past in an unbroken continuity, is but a term of the sequence; and as such, philosophy forbids a search among the buried records for evidence of miraculous phenomena, or events contrary to natural courses which inaugurated and surrounded his appearance. * * *

"As yet we are in the infancy of this inquiry. We are just beginning to discover that the first appearance of man upon the mundane stage (regarded in a non-miraculous light) cannot be deter-

* See *Anthropological Review*, vol. i, p. 189. ED.

† *Remarks upon the Present Condition of Geological Science.* By George E. Roberts. (Von Voorst.)

mined by the discovery of certain fashioned weapons of flint in a district which it would be a stretch of hypothesis to call the cradle of mankind; and before any chronologic scheme can be attempted, long and close observation will be necessary of the relics of pre-historic nations. What Dr. Daniel Wilson has done for Canada and Scotland must be effected in other lands, and the vestiges of the ancient peoples correlated with the usages of modern tribes.

"The small amount of anthropological data accumulated already by travellers, shows that the manners, customs, and other features of the stone-age are still existent, and that a separate scheme of progress throughout time must be drawn for every people in every land.

"The stone-age of Scotland is younger than that of Denmark, and is itself represented by hunting and fishing tribes in North Polar countries, which still use implements of stone. So persistent is custom and usage among primitive tribes, even when in near neighbourhood to an educated people, that stone querns (hand flour-mills) are still used in Ross-shire; five specimens having lately been obtained by my friend Mr. Stables, of Cawdor Castle, from the Earl of Cawdor's tenantry in that county.

"Can it be that the differing chronological values of these stages of human progress will find a parallel in the stratigraphy of sedimentary deposits, similarly unattributable to one zone of geological time? I am well aware that the facts yet obtained are too meagre to warrant any broad reasoning which shall be of present value; yet a geologist may be pardoned if he offers an axiom for acceptance in days of increased knowledge, that stratigraphical parallelism,—borrowing a designation for the cosmopolitan law he proposes from the science which has suggested the idea,—whether in the deposition of mineral sediment, in the distribution of animal and plant-life through time, or in human thought and design, considered with reference to pre-historic or historic events, are terms coequal and coordinate in value."

Ape origin of Man. An article in the *Reflector*, currently attributed to a zealous fellow of the Anthropological Society, contains the following observations:—

"After stating this much—which is not very new, for we remember hearing such things in the medical class-rooms of our university five and twenty years ago—Professor Huxley argues—'Thus the study of development affords a clear test of closeness of structural affinity, and one turns with impatience to inquire what results are yielded by the study of the development of man.' We cannot afford to quote the rhetorical interrogations that follow. We think them unnecessary. We do not know why the Professor or we should be in the least impatient. We can answer unhesitatingly and as fully as he, 'The reply is not doubtful for a moment, and has not been doubtful any time these thirty years'—nay, we might say these three thousand years—for, inasmuch and in as far as man is an animal, 'without question, the mode of origin and the early stages of the development of man are identical with those of the animals immediately below him in the scale.' We quote on un-

hesitatingly—'Without a doubt, in these respects, he is far nearer the apes, than the apes are to the dog.' In frankly adopting these quotations in order, on our own part, to ask, And what then? we must guard ourselves from being supposed to accept the inaccuracies of language and contradictions of our impatient Professor. If the stages of man's development were 'identical' with those of the animals immediately below him, then they could not be "nearer" to any one rather than another. Similarity, and not identity, is all that can be legitimately predicated here, to make the reasoning consistent and logical. Then again, because the embryo man is more like the embryo ape than the ape is like the embryo dog, 'startling as it may appear to be' (the Professor goes on), 'this alone appears to me to place beyond all doubt the *structural unity* of man with the rest of the animal world, and *more particularly and closely* with the apes.' This is very sad. Developmental 'identity' and 'structural unity' with all other animals, and yet a 'far nearer' resemblance, and 'more particularly and closely,' with the apes! Now, if in some things man as an animal is identical with other animals, then in those respects he cannot be more than identical. Solomon reminds us of some of these things, 'that we may know that we also are beasts,' *i.e.*, animal. Job, in like manner, and with equal truth, calls man 'a worm;' and our greatest poet adopts the phrase, though he does not take a one-eyed view of humanity, like Professor Huxley, and therefore he says 'a worm, a god!' But in all that the Professor is speaking about, man is not identical with the lower animals, but only similar to them. Even as the Professor deals with him, and while we study the frontispiece of his work, exhibiting the skeletons of apes from the gibbon up to the gorilla, and one step more to man—from the ridiculous up to the sublime—man still comes forth 'the paragon of animals;' and unless we choose to shut our eyes to all that we see and know, he is still, compared with a gorilla, Hyperion to a satyr."

Pre-historic Dwellings. An admirable article appears in the April number of our admirable contemporary, the *Popular Science Review*, from the pen of Mr. George E. Roberts, and which we are glad to see has been since reprinted in a separate form. We make the following extract:—

"The lake-dwellings therein described are those in the Duchy of Parma, met with in accumulations of fresh-water mud near the present river margin. In this fluvial material, Professor Strobe and Signor Pigorini of Parma had met with the sites of several dwellings, from which they had obtained fragments of wood and cinders, and the bones of animals, together with a curious assemblage of art-objects in bone, stone, and bronze; in the latter material were axes, sickles, arrow heads, sword blades, hair pins, a small comb, scissors, and an awl. The pottery was of coarse clay, mixed with sand, resembling in its character the rude kind still made by hand in the villages among the Apennines. The pots found had small handles, and were sometimes ornamented with stripes. Among the bone objects were combs,

exhibiting a like ornament to those of bronze. A basket made of osier was also met with. The animal bones found belonged to wolf, wild boar, roebuck, stag, dog, pig, horse, bull, goat, and sheep; bird bones were also met with. Remains of fruits also came to light from out the mud, which were so well preserved as to be easily referred to pears and plums. Flax seeds were also found. On the site of a similar lake dwelling at Peschiera, M. de Silber found objects of like kind, together with some in copper. A lake dwelling of probably earlier date is one met with beneath five feet of peat, near to Zug, from which articles of stone have alone been obtained. At Untersee, south of the village of Constance, and on the borders of that lake, M. Dehoff found no trace of a bronze age or of metal at all. At Nieder-Wyl, an establishment of very early type was met with, though an important one by reason of the excellency of its preservation. Passing northwards, M. Escher contributes an account of a hill dwelling, near l'Ebersberg, of character very similar to those lake dwellings of the bronze age which occur in the Lake of Brienne. The lake dwellings of Robenhausen are worthy of note, those first discovered being of the bronze age; but on removing their relics, a lower foundation was seen, belonging to an older encampment.

"It is tolerably certain that some of these lake dwellings were tenanted up to—it may be after—the commencement of the Christian era. Evidences of the influence of an exterior civilisation greater than their own are clearly to be seen in the character and ornamentation of some of their bronze and iron implements; and the discovery of substances such as tin, nephrite, Mediterranean coral, and Baltic amber, among the relics of their homes, prove that the people who clung so tenaciously to the dwelling spots of their ancestors, were not insensible to the advantages of communication with European nations.

"And this contemporaneity of a low class with a cultivated people has still its counterpart in the world. The hill tribes of India, the Veddahs of Ceylon, and the various 'men of the soil' who live in the mountain fastnesses of the Malayan peninsula, are so many stagnant patches of human life, huddling together in the midst of active races, and holding fast by a few degrading traditions. By laws of human progress—and who shall say that 'natural selection' is not the greatest of these?—the nations in the midst of whose social lives they lie hidden have advanced to higher stations, while they have remained stationary, or as laggards in the scheme. And yet another law they may be regarded as exemplifying—that which, though at present it is shadowed rather than laid down, teaches the chronology of natural phenomena to be a series of overlaps, the evening of one condition of terrestrial things having been, and still being, coexistent with the morning of the succeeding era; a most reasonable and philosophic element in our comprehension of geological phenomena, and one for which we may claim an equal value among the laws of human progress."

THE
ANTHROPOLOGICAL REVIEW.

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THE DISTINCTION BETWEEN MAN AND ANIMALS.

“Les animaux ne diffèrent de l'homme que du plus au moins.”
CONDILLAC, *Traité des Animaux*, ii, 4.

EVEN upon the free admission of the most eminent and candid supporters of Mr. Darwin, we are not yet compelled to accept as *proved* the Darwinian hypothesis of gradual development. But all calm and earnest inquirers ought to express their complete dissent from the methods usually adopted in order to overthrow it. When it was first propounded, the clergy in general, and even philosophers raised a cry, as though an attempt had been made to attack humanity in its inmost shrine of sacredness; and though they had never seen an ape in their lives, except perhaps in the cage of a menagerie, they mounted their highest horses and declaimed indefinitely about Intellect, Soul, Understanding, and Self-consciousness, and all other immanent qualities of mankind, according to the names they receive after being reflected in this or the other philosophical prism.* All this is beside the question, which affects the organism alone; and certainly, as may easily be shewn, neither the past pedigree nor the future destinies of the human body until the resurrection, are such as to make any man consider it a degradation that the particles which form his mortal body should have been vivified during past ages in the material

* See Vogt, *Vorlesungen über den Menschen*, § 9. In his second part, which only appeared after this was written, he has examined the question at length. It will be observed that I have not paused to notice such definitions as that “man is a tool-using animal”, “a cooking animal”, etc. If they were true, they would furnish us with no real line of demarcation. But are they true? Can the Tartar, who uses his beefsteak as a saddle before he eats it, be said to cook? And if so, may not the racoon be said to cook, when it dips its food in water? And do not monkeys use cocoa-nuts, boughs of trees, etc., as tools? “The use of fire,” says Bernardin de St. Pierre, “places an infinite distance between men and animals” (*Harm. de la Nature*). But the Dokos, and probably other savages, do not know the use of fire: and similarly, on one side or other, all such definitions break down.

structure of inferior animals. The supposition is not *proved*, and we believe it to be untrue; but it has been opposed on false grounds. It is not degrading to man, it is not against the majesty of God. "It is just as noble a conception of the Deity," says Mr. Darwin, "to believe that he created a few organic forms capable of self-development into other needful forms, as to believe that He required a fresh act of creation to supply the void caused by the action of His laws."

That man is to be classed as a member of the animal kingdom, and not as zoologically distinct from it, is now admitted, although there was a great outcry against Linnæus, when he first gave to the fact a scientific recognition. "Not being able," says Professor Owen, "to appreciate or conceive the distinction between the psychical phenomena of a chimpanzee and of a Boschisman, or of an Aztec with arrested brain growth, as being of a nature to exclude comparison between them, or as being other than a difference of degree, I cannot shut my eyes to the significance of that all-pervading similitude of structure—every tooth, every bone, strictly homologous—which makes the determination of the difference between homo and pithecus the anatomist's difficulty. And, therefore, with every respect for the author of the *Records of Creation*, I follow Linnæus and Cuvier in regarding mankind as a legitimate subject of zoological comparison* and classification."

M. Flourens has most emphatically observed † "*Un intervalle profond, sans liaison, sans passage, sépare l'espèce humaine de toutes les autres espèces. Aucune autre n'est voisine de l'espèce humaine, aucun genre même, aucune famille.*" That there is between man and animals an enormous difference in *degree*, no one dreams of denying. As Buffon says, "Le plus stupide des hommes suffit pour conduire le plus spirituel des animaux, il le commande et le fait servir, et c'est moins par force et par adresse que par supériorité de nature, et parce qu'il a un projet raisonné, un ordre d'actions et une suite de moyens par lesquels il contraint l'animal à lui obéir." ‡ But when we pass from differences of *degree* to differences of *kind*, § it becomes very difficult, if not impossible, to point out any satisfactory, definite, and pre-

* On the Character of the Class Mammalia, p. 20, n., Mem. of British Association, 1857.

† Éloge de Blumenbach, Mém. de l'Institut, t. xxi. Linnæus, on the other hand, whose *Homo Lar* is the grand gibbon of Buffon, calls man "*homo sapiens*," and the chimpanzee (for clearly his description must refer to the chimpanzee) "*homo troglodytes*." Both Rousseau and Burnet considered *oranga* to be men. See Godron, ii, 117.

‡ Hist. Nat., ii, 438. See Aug. Carlier, De l'esclavage, p. 11, seq.

§ Even Porphyry thought that animals differ from man in degree only, not in essence. De Abstinentia. See Pouchet, De la Plur. de Races Hum., ch. ii.

cise line of demarcation between the human race and inferior animals. The difference, in other words, is quantitative, and not, so far as we can yet see, essentially qualitative.

Let us very briefly examine some of the suggested differences between them, passing over all those more trifling ones which, even if they were established, would not amount to an essential and generic difference. The examination is all the more necessary, because few subjects have been more disguised than this by ignorance and prejudice and their invariable concomitants, arrogant assertion and obstinate refusal to observe the facts.

1. Buffon says, "Whatever be the resemblance between the Hottentot and the ape, the interval which separates them is immense, since it is filled up interiorly by Thought*, and exteriorly by Language." "The plant," says Is. Geoff. St. Hilaire, "lives; the animal lives and feels; the man lives, feels, and thinks."

Yet it is impossible, as even Buffon admits, to refuse to allow to animals at least an analogon of thought, or, as M. de Quatrefages expresses it, a rudimentary intelligence. To prove this would be to copy out whole volumes of authentic narratives respecting various animals. Dr. Yvan, in his account of a tame orang of Borneo, mentions that one day he took a little girl, examined her in the most attentive physiological manner with the greatest gentleness, and then retiring into a corner, with a most puzzled expression, meditated for a considerable time. A dog, which is searching for its master, will come to a place where three roads meet, and after smelling at two of them will take the third *without stopping to trace the scent*, because an exhaustive and perfect syllogism has proved to him that it is unnecessary to do so. Borlase† narrates to us that he once saw a lobster trying to get an oyster. Everytime, however, the lobster tried to insert its claw the oyster closed its shell and frustrated the attempt; at last the lobster picked up a little pebble and when next the oyster opened its shell dropped it in, and so attained his object. The necrophorus in order to get at a dead animal at the top of a stick, will *undermine* the stick and so bring the animal down. Streud's cat, when it began to feel the exhaustion of air in his air-pump, would put its paw over the valve and so stop its action. An elephant was seen to pick up a sixpence which was beyond his reach by blowing it violently against the wall until it had recoiled within the length of his trunk. Cuvier tells us that, when a rope was shortened with knots in order to prevent the orang-outang at Paris from letting itself down to unlock a door, the

* Hence the very root of the word man, Sanskr. *manudscha*, Goth. *manniska*, Germ. *mensch*, etc., is "man", to think. Grimm, *Über d. Urspr. d. Sprache.*, § 121.

† See Thompson's *Passions of Animals*.

creature observing that his weight only drew the knots tighter, climbed up *above* them, and so untied them.

After these cases, which might be *indefinitely* multiplied, who shall deny Thought even to a crustacean? who will venture to say with Descartes,* “la bête n’est qu’un automate, une pure machine?” or, who will refuse to admit with Milton respecting animals that—

“They also *know*,
And *reason*, not contemptibly”;

and with Dr. Brown that they exhibit the evident marks “of reasoning—of reasoning which I cannot but think as unquestionable as the instincts that mingle with it.” The instincts of animals adapt themselves to varying circumstances, and therefore Coleridge† rightly concludes that their instinctive intelligence “is not different in kind from understanding, or the faculty which judges according to sense in man.”

The definition of man, then, as a “reasonable animal,” and the attempt to establish a generic difference between that which in animals is called “instinct,” and in man “reason,” falls to the ground. Instinct, as Comte‡ pointed out, is “a spontaneous impulse in a determinate direction, independent of any foreign influence; and, therefore, there is instinct in man as much or more than in brutes.” If, on the other hand, intelligence be defined as the aptitude to modify conduct in conformity to the circumstances of the case—which is the main practical attitude of reason proper—it is more evident than before that the difference between men and animals is only in degree of development. Comte considers that this perversion of the word instinct is a remnant of the automatic hypothesis of Descartes; and in a few pregnant remarks he shows the truth of that which has also been stated by Professor Huxley§, that “the essential processes of reasoning are exerted by the higher order of brutes as completely and effectively as by ourselves.” The ideal|| fixity of instinct, which is

* Des Cartes, *Disc. de la Méthode*, ed. Cousin, i, 184-190.

† *Aids to Reflection*, i, 193, sixth edition. Sidney Smith a little understates matters when he says “I feel myself so much at ease about the superiority of mankind; I have such a marked and decided contempt for the understanding of every baboon I have ever seen, I feel so sure that the blue ape without a tail will never rival us in painting, poetry, or music, that I see no reason whatever why justice may not be done to *the few fragments of soul and tatters of understanding* which they may really possess.” This passage is exquisitely humorous, but it rather tends to conceal the *real nature* of the serious question, What is the distinguishing mark between men and animals?

‡ Comte, *Phil. Pos.*, v, 6; Martineau’s trans., i, 465. Dr. Darwin long ago saw the same truth. *Zoonomia*, i, 256.

§ Huxley, *Lectures*, p. 57. See, too, Lyell’s *Antiquity of Man*, p. 495.

|| Even F. Cuvier (*Dict. des Sciences Nat.*, xxiii, 532), Flourens (*De l’Instinct et de l’Intelligence des Animaux*), and Gedron (*De l’Espèce*, ii, 131), appear to endorse this positive error as to the unalterableness of instinct. Instinct is no

supposed to characterise animals, is, as Leroy has proved, the mere error of inattentive observers; and instead of patiently exploring the moral and intellectual nature of animals, men have jumped at once to a contemptuous and erroneous opinion which has blinded their eyes to innumerable facts. Man has looked at the animals only through* the deceitful prism of his own pride, and his own unreasoning individuality.

2. Nor, again, can we deny to animals a species of *language*, or *διάλεκτος*, as Plato calls it, although Max Müller considers language a Rubicon which animals can never cross. It is true that the language may be rudimentary, and mainly composed of interjections; it is true it may be the expression of mere feeling,† rather than of free intelligence, yet it differs from human speech neither in its mechanical production nor in its object and results.‡ To prove this was the object of several of those books§ which were written to refute the wonderful automaton-theory of Descartes. To all intents and purposes animals *do* possess language, and some of them even a power of articulation, which may be proved by many anecdotes. When bees have lost their queen the first that discovers the fact informs the whole hive by crossing and tapping the antennæ of all which it meets. Dr. Franklin found some ants eating treacle. He shook them out, and hung the pot by a string from the ceiling. Only one ant had been left in the pot. This crawled up the string, across the ceiling, and down the wall, and then informed the rest who immediately thronged to the treacle till it was all devoured. A surgeon at Leeds bandaged and cured the leg of a dog which had been lamed. The dog attended every day till it was cured, and after three months brought with it another lame dog to request the same assistance. "Parrots," says Archbishop Whately, "can be taught not only to pronounce words, but to pronounce them with some general meaning of what they utter." "All ears," says Professor Wilson, "can correspond to the cultivated utterances of domestic animals, and especially to the varying tones of the dog. Its whine, its bay, its whimper, its bark, its yelp, its growl, its snarl, its snap, its howl, are

more unalterable in animals than it is in man. That animals have *intelligence*, as well as *instinct*, has been admitted by Locke, *Essay on Underst.*, ii, 11, Leibnitz, *Nouv. Essais*, ii, 16, Condillac, *Traité des Animaux*, p. 36, Leroy, *Lettres Philosophiques*, p. 5, etc. Réaumur, etc. (quoted by Godron, *L.c.*), as well as by the authorities already adduced. For some good remarks on *instinct*, see Dr. Whewell, *Hist. of the Ind. Sciences*, i, 615, seq.

* Cornay, *Anthrop.*, p. 16.

† Heyse, *Syst. der Sprachwissenschaft*, 25-33.

‡ De Quatrefages, *loc. cit.*

§ Such as those of Fabr. de Aquapendente, and of Drechseler, and of Rechtenbach, *De Sermone Brutorum*; Crocius (1676), and Klemmius (1704), *De Anima Brutorum*; J. Stahl, *Logice Brutorum*, Hamb., 1697; Le Père Boujeant, *Amusements Phil. sur le Langage des Bêtes*, La Haye, 1739, etc.

each distinct utterances, and every one of these names is a word directly derived from this dog-language." A dog can easily understand his master, and Gall humorously remarks that his dog knew English, French, and German, having acquired the latter with great rapidity. So too a master "can tell from the tone of a dog's bark, when it is greeting an acquaintance, threatening an intruder, repelling a beggar, or whether it is only indulging in that liberty of speech which is the birthright of every civilised dog, and taking an abstract bark at things in general."* We conclude, then, with Archbishop Whately† that "Man is *not* the only animal that can make use of language to express what is passing within his mind, and can understand, more or less, what is so expressed by another."

3. Nor, again, does the possession of a *power of abstraction*, as Locke‡ supposed, furnish any generic difference between man and brute. In the first place, there are many savage tribes among whom the power of abstraction can be barely said to exist at all, or only in the feeblest measure. The Iroquois§ have no generic word for "good;" the Mohicans no verb for "I love;" the Chinese no word for "brother;" the Malay no word for "tree" or for "colour;" the Australians no word for "bird;" the Esquimaux no word for "fishing;" though each of these languages has a host of specific words for each separate kind of tree, bird, fish, &c. Then again, conversely, who has ever proved that beasts have no power of abstraction? no conception, for instance, of the generic "man," or of "colour," or of "whiteness?" What right have we to base a distinction on an assumption so completely unproven? And if, putting the remark in a slightly different form, we say with Plato|| that man is the only animal who counts, we are again confronted by the facts that many savage nations have only the feeblest conception of number, and cannot count beyond three or four; while, on the other hand, the more intelligent animals frequently act in a manner

* Prehistoric Man, i, 83. There is even reason to believe that barking is an acquired language (Rev. de Deux Mondes, Fevr. 1861). Prichard, Nat. Hist. of Man, p. 83, ed. Norris.

† On Instinct, Dublin, 1847. Even Lucretius saw that practically a dog can speak (v, 1048).

‡ Essay on the Human Understanding, II, xi, 10, quoted and approved by Max Müller, Lectures, p. 342. M. Hollard denies to animals all conception of time and space (De l'Homme, p. 78). What is the value of such an assertion as this? Such was also the view of Ballanche, "La Faculté d'abstraire a été refusée à la bête", Palingénésie, p. 175; and of Bonnet, "Les Animaux ne généralisent point leurs idées", Princ. Phil., v, 2. See Charma, Sur le Lang., p. 190.

§ See Farrar, Origin of Lang., pp. 47, 107; Crawford, Malay Dict., i, 68, seq.; Latham, Var. of Man, p. 370; De Quatrefages, Rev. de Deux Mondes, Dec. 15, 1860; Maury, La Terre et l'Homme, p. 433; Du Ponceau, Gram., p. 120, etc.

|| Epinosis. Plato's other point of difference (Legg., ii) that man is the only animal that dances and sings, is not true, and if it were would be insignificant.

which shows that they are not without this rudimentary sense of numerical relations.

4. Nor, certainly, does man differ from animals in *anatomic structure*, as Helvetius* asserted. On the contrary, anatomy "has proved an absolute identity of anatomic composition—bone for bone, muscle for muscle, vessel for vessel, nerve for nerve. Some variations of volume, of dimension, of arrangement in harmony with the exterior forms, constitute almost the only differences. In proportion as the means of investigation have become more numerous and more powerful, the approach has become more close;" and chemistry, and physiology, even when they work with the microscope, carry the identity still farther than anatomy.† To find some real essential point of difference between the structure of man and of the ape, has been called the main difficulty of the anatomist; and Linnæus, who was always straightforward and honest, said long ago, "Nullum characterem hactenus eruere potui unde homo a simia internoscatur."

5. Nor, again, does the difference consist in man's *vertical position*, which penguins and some ducks share with him; to say nothing of the frequency with which that position is assumed by the higher apes.

6. Nor yet, again, in *affections, † passions, and the faculties of the heart*. On the contrary, animals closely resemble men in moral character. They love, hate, attend to their offspring, have permanent feuds and fast friendships, are clever and stupid, profit or fail to profit by education, and show most decided individuality. We have all known affectionate, grateful, and caressing dogs, as well as surly, jealous, misanthropic, passionate dogs; conceited dogs and humble dogs, gentlemanly dogs and rude dogs. Nay, more; the most decided differences of character may be at any time observed in a single flock of chickens. Some of them are greedy, and others selfish; some of them generous, and others mean; some brave, and others cowardly; some of them lively, and others morose.

7. Nor, again, is it in the *expression § of emotions*. Milton, indeed, speaks of the

* Helvetius, De l'Esprit, i, 1, note a. "L'organisation de la bête est de beaucoup inférieure à la nôtre."

† Godron, De l'Espèce, ii, 112; De Quatrefages, l. c. Dec. 1860, p. 825. Compare Vogt, Vorlesungen, § 145, who places side by side a human brain and one of a chimpanzee, adding "Man vergleiche und staune!" On the whole subject, see Huxley, Lectures, p. 6; Cornay, De l'Unité, p. 16; Godron, ii, 110-139; Charma, Ess. sur la Langage, 30, 189; Lyell, Ant. of Man, p. 493; Holland, 78-86.

‡ De Quatrefages, l. c. See, too, Maupertuis, Sur l'Âme des Bêtes, Amsterd. 1728.

§ See the quotation from Grant and Lawrence in Pouchet, De la Plur., ch. ii.

"Smile which from reason flows,
To brute denied."

But the orang "is capable of a kind of laugh when pleasantly excited," and it is certain that there are other animals which both laugh and cry.

8. Nor does it consist, as so many philosophers * have asserted rather than proved, in *self-consciousness*. "Les animaux," says M. Flourens, "sentent, connaissent, pensent; mais l'homme est le seul de tous les êtres créés à qui ce pouvoir ait été donné de sentir qu'il sent, de connaître qu'il connaît, et de penser qu'il pense." But how can this be proved? Animals, certainly, have an individualised † perception, a *sensorium commune*; they are certainly as conscious as man is of their own material being; and although Comte truly says that we shall never know what goes on in an animal's brain, yet it requires no wonderful knowledge to be sure that any individual cat (for instance), though it may not be able to say "I," is not in the habit of mistaking itself for any other cat! The individuality of animals is often as intense and energetic as that of men; and if conceit, pride, and shyness be signs of self-consciousness, it must exist in some animals to a very remarkable extent.

9. Nor does *perfectibility*, or "improveable reason," constitute a difference. "L'animal ne progresse pas," says Buffon, ‡ "l'homme est perfectible." Both propositions are questionable. Some animals can be educated, can be improved in sagacity, and trained into a thousand useful and cleanly habits; in other words, they are capable of progress and growth in intelligence; as, for instance, in the case of the dog, as every one is aware who has ever trained or observed one! And, on the contrary, some men show the gift of perfectibility to a very slight degree, and evince, as has been abundantly proved, a deeply-seated inaptitude for real civilisation, which excludes the application of the word "perfectibility" to them, except in a sense in which it may also be applied to the more intelligent animals. †

10. Nor, again, does the difference consist in the possession of *moral perceptions*. Aristotle was demonstrably mistaken in saying § that man alone has the sentiment of good and evil, of justice and injustice. Animals show all the virtues and all the vices. They || are

* Die intellectuelle Anlage, und die Fähigkeit der Selbstbetrachtung, deren das thier unfähig ist. Burmeister, Gesch. d. Schöpfung, § 406, etc.

† Pouchet, L. c.; Comte, Philos. Pos., v, ch. 6.

‡ Buffon, Introd. à l'Hist. de l'Homme. So, too, Archbp. Sumner, Records of Creation, ii, 2.

§ Aristotle, Polit., i, 2.

|| Zimmermann, Der Mensch., § 46.

faithful, obedient, attached, good-natured, grateful; and, on the other hand, they are false, revengeful, obstinate, artful. And, as a necessary consequence of this, they clearly possess a *conscience*. What careful observer of animals has not noticed the misery of a dog who goes about with a guilty conscience? He knows as well as possible that he has done wrong, and betrays by his motions that he is penitent and ashamed. And even if this were not so—if animals betrayed *no* sense of morality—are there not men, tribes and nations of men, of whom the same is true? Is it necessary to pause, even for a moment, to prove that there have been even civilised nations whose notions of morality were so confused, or so obliterated, as to cause them to regard with approval or indifference suicide and murder, adultery and theft?

11. Again, animals display powers of memory and of will. They can and do profit by experience. They have a sense of playfulness exhibited in a way which shows the influence of imagination; they act in a manner which often proves distinct recognition of the relation between cause and effect; some of their actions are marked by hypocrisy and deceitfulness; sometimes they have been known to exercise remarkable powers of invention; they frequently show themselves able to compute time, and sometimes manifest a sense of number; their astonishment and their sympathy are often expressed as clearly as though they had articulate utterance. These are not assertions, but facts; nor are they founded on doubtful stories in Pliny and Ælian*, but on well-authenticated cases, for which I refer the curious reader to the excellent book of Mr. Thompson on the *Passions of Animals*; a book which will afford him the strongest possible confirmation of every argument which we have here adduced.

12. Does the difference, then, consist in a *sense of religion*? This is the conclusion of M. de Quatrefages, who would define man, in his distinction from the brute, as “an organised being, living, feeling, moving spontaneously, endowed with morality and a sense of religion (*religiosité*).” We have seen that “morality” may be struck out of this definition; nor is “religiosity” at all a satisfactory criterion. If animals are not insensible to the broad outlines of the moral law, can we deny them that (of course rudimentary) sense of religion, which perhaps can only exist in the union of the intellectual faculties with a sense of right and wrong. Is there, at any rate, any proof, or shadow of proof, that it does not exist in *some* animals? Is there, again, any proof, or shadow of proof, that it exists in any higher degree in *all* men? Religion among some tribes seems to resolve itself into a

* See Pliny, viii, 30; Solinus, vii, 21; Ælian, iii, 10, vii, 22, xvi, 15, xvii, *passim*; Michaelis, De Origine Linguae, p. 140. seq.; Vogt, Vorlesungen, § 255.

mere dread of the unknown; and this exists among the more intelligent animals, especially, as has been noticed so frequently, in the horse and the dog. A dog in the possession of Professor Vogt's father exhibited the liveliest terror at the presence of a ghost in the shape of a phosphorescent tree.

13. I have not entered on the question whether animals have a *soul*; and probably, after all that has been said, the inquiry would be useless. If the soul be an *Entelechy*, as Aristotle asserted; if it be, as Plato said, that which displays itself in three energies—the rational, the irascible, and the appetitive; if, with some modern philosophers, we regard it as “that inferior part of our intellectual nature, which shows itself in the phenomena of dreaming, and which is connected with the state of the brain;” if, as Aristotle in another place defines it, it be “that by which we live, feel, or perceive, move, and understand;” if it be the ego or the sum of its faculties; if its essence reside in thought, in sensation, or in will; if it be, as Reid defined it, “the principle of thought;” if it be “a self-moving force” or “incorporate spirit;” if it be, in short, anything which you like to call it, who will assert, or rather who will prove, that animals have no soul? It is no part of my task here to inquire what the soul is, and I have merely taken the readiest definitions that came to hand*: but does any one of these definitions, or all of them put together, furnish a *proved and specific characteristic* of the genus Man? Did not the feeling that such is *not* the case lead to the automatic theory of Descartes, Polignac, and Priestley on the one hand, and, on the other hand, to the beliefs of Father Bougéant and French, that they were acted on by spirits, and of Newton and Hancock, that their actions are directly due to the agency of the Creator?

14. Finally, then, is *immortality* the distinguishing point? Here, again, who shall venture to say? If no one but a rash man would venture to assert that *any* animals *are* immortal, would any one be less rash who should take upon himself to declare positively that *no* animals *can* be? Certain it is, that the moral and physical analogies led Bishop Butler to regard a future life for animals as resulting from some of the same general arguments as those which have weight in establishing the immortality † of man. The great bishop deprecates all difficulties on the score of the manner in which animals are to be hereafter dealt with, as wholly founded in our ignorance; neverthe-

* See Fleming, *Vocab. of Philos.*, s. v., and p. 263.

† It is, however, observable that in the Bible, *ψυχή* is used for animal life, and *πνεύμα*, for the life of men. For the well known passage of Butler, see *Analogy*, ch. i: “But it is said that these observations are equally applicable to brutes,” etc.

less I cannot refrain from here quoting a powerful passage from Mr. Ruskin to show what moral reason we have for not denying that brutes also may be destined for a future existence. The doctrine of immortality is deeply mingled with that of future retribution; and Mr. Ruskin asks, "Can any man entirely account for all that happens to a cab-horse? Has he ever looked fairly at the fate of one of these beasts as it is dying? measured the work it has done, and the reward it has got? put his hand upon the bloody wounds through which its bones are piercing, and so looked up to heaven with an entire understanding of heaven's ways about the horse? Yet the horse is a fact—no dream—no revelation among the myrtle trees by night; and the dust it lies upon, and the dogs that eat it, are facts; and yonder happy person, whose the horse was till its knees were broken over the hurdles, who had an immortal soul to begin with, and peace and wealth to help forward his immortality, . . . this happy person shall have no stripes—shall have only the horse's fate of annihilation; or if other things are indeed reserved for him, heaven's kindness or omnipotence is to be doubted therefore."

To those who think over this passage, it will not appear irrelevant in the present discussion, and it may perhaps show the possibility of a doubt whether the destinies even of the future be reserved for man alone. Even Leibnitz, regarding individual permanence as no exclusive privilege of man, extended it to animals also, attributing "indefectibility" to them, while he reserved the word immortality to paint the higher possibilities of man.

That man is almost immeasurably removed from animals in the degree of development which their several faculties have attained, has never been disputed. But "no difference in degree can constitute a difference in kind;" and if it be asked "What is the generic point of distinction between men and animals?" the answer must still be, *Natura non agit saltatim*; there is no such point of distinction; man does not form an order apart from the rest of the animal world; he is linked to that world by humiliating, but indissoluble ties of resemblance and connection; and even the matter which constitutes both his body and that of animals is but the same as that which goes to the composition of the inorganic world.

PHILALETHES.

ON THE PHENOMENA OF HYBRIDITY.*

If we can suppose an observer so favourably placed as to be capable of taking in all animated nature at a glance, and to be at one and the same time equipped with all our present stock of scientific knowledge, without being embarrassed with any natural or acquired prejudices, let us endeavour to imagine what would be the sequence of his ideas, and his conclusions on the phenomena of the production of offspring by generation. On considering in what form and under what conditions animal life may be said to commence, he would be aware that all animated beings spring from the union of two cells in a proper receptacle, which is for the most part a womb. "Whatever be the difference," says Agassiz, "in the outward appearance or the habits of animals, one thing is common to them all without exception: at some period of their lives they produce eggs, which, being fertilised, give rise to beings of the same kind as the parent! The true egg, or, as it is called, the ovarian egg, with which the life of every kind of living beings may begin, is a minute sphere, uniform in appearance throughout the animal kingdom." This ovarian egg, lying thus in the womb of every female of every kind of living being, is fertilised by the introduction and contact of an equally microscopic body, which proceeds from a male, and is equally similar in all males,† so far as our present microscopes can discover.‡ The conjunction, therefore, of a sperm-cell with a germ-cell in a fitting receptacle, would appear to our observer the only necessary for causing an evolution of life. Nor is it possible at present to say that such a conclusion would be wrong. Indeed, the well-known instance of the fœtus developed in a boy's body, and preserved in the Hunterian Museum, is sufficient to show that even the usual receptacle of the microscopic cells, if they can be brought together, may be dispensed with, so far as an actual commencement of life is concerned. Our observer, being of course

* On the Phenomena of Hybridity in the Genus Homo, by Dr. Paul Broca. Translated and edited by C. Carter Blake, F.G.S., F.A.S.L. Longmans: 1884.

† This has nowhere been better treated of than in that admirable book *The Elements of Social Science*, fifth edition, E. Truelove, 240, Strand. "There is no distinguishable difference between the germ of the humblest plant and of man." (P. 60.)

‡ Some say positively there is no difference. Thus J. W. Draper, *Hist. of the Intellectual Development of Europe*, London, 1864, vol. i, p. 226. "From a single cell, scarcely more than a step above the inorganic state, not differing, as we may infer both from the appearance it offers, and the forms through which it runs in the earlier stages of life, from the cell out of which any other animal or plant, even the humblest, is derived."

above all the aversions and prejudices of species, would be entitled to suppose that there was no obstacle to the constant formation of every kind of creature, and that individuals of different sexes might produce beings indefinitely varied, and partaking of the attributes of their common, though widely different parents. But he would soon become aware that there were physical and mechanical difficulties, which would prevent, at all events, every kind of otherwise possible combination. Having allowed for this, and for the improbability that animals living on the land and those native to the water, would produce a progeny necessarily capable of living in the one which the mother inhabited, for it might have too many of the organs of its father to do so, our observer might still expect to find animated nature infinitely more varied than we see it to be. Nor, were the bodies of female animals diaphanous to such an eye, is it so clear that he would be entirely disappointed. When we speak of the sterility of certain unions, we mean that they have produced no being who has sustained an existence exterior to the womb; but it by no means follows that they have produced no life at all. And when we consider that the sperm- and germ-cells which are hereafter to produce a human being, cannot be distinguished in any way from those which are to produce an elephant or a mouse, we are not in a position to assert that, could the cells of an elephant and a man, or a man and a mouse, be brought together in a proper *nidus*, they would be incapable of producing any living being, however short-lived, whatever: *d priori*, then, our observer would be justified in supposing that any germ-cell could be fecundated by any sperm-cell; nor could we disprove it. Some considerations, however, such as the relative size of the probable fœtus to the female parent, and the variance of the periods of gestation, might be sufficient to balance the probabilities deduced from the uniformities of the ovarian egg, as to the emancipation of products from the womb in such a condition as to be capable of exterior and independent life. But, having been prepared by these reflections to find some practical restriction on the production of beings from animals of different appearance, our observer would, I think, be justified in coming to the conclusion that, inasmuch as there is no perceptible difference between the germ- and sperm-cells and the ovarian eggs of any kind of animated beings, where there exists no physical or mechanical difficulty to prevent their junction in a womb, and where the periods of gestation which the authors of one pair of cells have each gone through are not widely different, and where the size of either parent is neither too great nor too small to present a probability of the offspring destroying its mother too soon by a too large development, or being stifled itself from want of being

sufficiently large, there we may expect that the union of any sperm with any germ-cell would naturally be productive.

Dismissing our imaginary observer, and coming down to our own limited intellects, I think I have succeeded in showing that, *a priori*, from the laws of embryology, we ought not to deny the possibility, or even the probability, of productive unions between animals not greatly different in size and in their periods of gestation. The usual mode of arguing has, however, been the reverse; that is to say, it is asserted that no one has a right to believe in the possibility of the production of any kind, which we cannot point to as already existing. This argument was sufficiently powerful before it was suspected that the earth had been the home of beings totally different from those who inhabit it now, and whilst the facts relating to the ovarian egg were equally unsuspected. To our mind, in the presence of both these series of facts, the argument from non-existence loses all its force. But it will be said, if such unions as you hint at would be productive, how is it there is no example of them? An explanation of this may fairly be asked; but, even if no satisfactory one could be given, it would be clearly unphilosophical to say that, because there is a repugnance on the part of different creatures to effect what we call unnatural unions, 'therefore such unions, if effected, would be necessarily unproductive. Thus, when it is said that Divine Providence has rendered such unions unproductive for the purpose of preserving what is called order in creation, it would be equally fair to say that order is preserved, not by causing such unions to be unproductive, contrary to what we might expect from our knowledge of embryology, but by the fact that the disgust for such unions renders them so few, that their products, if they ever exist, stand no chance in the struggle of life with the opponents they have to contend with on either side of their ancestry.

Whilst, however, we assert that, so far as we know, such unions must be as productive as any others, we cannot avoid considering the question how it is so few instances in the affirmative are to be found. And when we come to consider the case of beings so nearly allied to each other, at all events, as are the different groups, races, or species of man, differing scarcely at all in size and in the period of gestation, from what has been said, it is clearly our opinion that those are in the right who affirm that, until the contrary is distinctly proved, we ought to assert, on philosophical grounds, that all men are what M. Broca would call *eugenic*. "Still," to quote his words, "there must have been a certain number of fundamental facts, which led even monogenists to deny the viability of *all* crossed races. They must have sought in vain among the nations of the earth for a race mani-

festly hybrid, with well-defined characters, intermediate between two known races, perpetuating itself without the concurrence of the parent races."

Whether such a race cannot be found, we shall see by and by; but at present we shall content ourselves with saying that the burthen of proof lies on the opposite side. The production of such a race would clearly not satisfy M. Pouchet. "The universality of reproduction between all races of men has been quickly admitted. Have all combinations possible been observed, the union, for example, of the Esquimaux and the Negro, the American and the Australian, the Tartar and the Bushman?"*

It is strange reasoning to say that, because large geographical spaces and differences of climate have prevented the union of certain closely allied beings, therefore we have no right, knowing what we do of the absolute identity of these beings in their earliest phase of life, to assume that they would be prolific, until almost impossible experiments have actually been made.

Dr. Prichard, starting from very different premises with our own, brought forward three examples of the fusion of very different kinds of men. These M. Broca has well shown to be unsound, and goes on :

"The three examples adduced by Prichard having thus proved without any absolute value, a diametrically opposite doctrine has been advanced. It has been said that, since this author was obliged to go so far for such indifferent examples, it amounts to a proof that he could not find any others, and the conclusion was arrived at that a mixed race neither has, nor could have, a permanent existence. These persons," he goes on to say, "have reasoned like the monogenists, who, knowing from experience that *certain* human races may become mixed without limitation, have affirmed that *all* the races, without exception, are in a similar condition."

Whatever be the grounds on which the monogenists may go, the reasons why we ourselves should expect *a priori* the indefinite prolificacy of all human beings, are clearly very different; and until the powers of the microscope have been so much enlarged, as to be able to show us the differentiation of the sperm and germ cells, and the ovarian egg of different animals, or kinds of men, to be such that the union of some cannot be expected to produce a being capable of life, exterior to the womb, and thoroughly independent, and with all the conditions of vitality, we shall be of opinion that nothing but an immense array of facts upon any single example, all bearing the other way, ought to induce such an opinion as the non-prolificacy of any human groups with each other.

* De la Pluralité des Races Humaines, Paris, 1858, p. 134.

Meanwhile, how does M. Broca put the question? "Facts must answer the question. Some are in favour of the monogenists, others support the opinion of their adversaries; from which we shall be enabled to infer, that in the *genus homo*, as in other genera of the mammalia, there are different degrees of homœogenesis, according to the races or species; that the cross-breeds of certain races are perfectly eugenesic; that others occupy a less elevated position in the series of hybridity; and finally, that there are human races, the homœogenesis of which is still so obscure, that the results even of the first intermixture are doubtful.

"To demonstrate that eugenesic hybridity really exists, one instance is sufficient, provided it be conclusive; and to find this example, we need not travel beyond our country. The population of France, as we have amply established elsewhere, is descended from several very distinct races, and presents everywhere the character of mixed races. The pure representatives of the primitive races form a very small minority; nevertheless, this hybrid nation, so far from decaying, in accordance with the theory of M. Gobineau—far from presenting a decreasing fecundity, according to some other authors, grows every day in intelligence, prosperity, and numbers."

So far, then, the facts agree with what we might have expected. But M. Broca goes on to say, that it is a great error to consider all intermixtures of men as eugenesic. And it will be seen that in his remarks upon this point, lies the great interest of the little volume before us.

The first instance considered is that of the union of the Negro and the white in America: and it is at once admitted that such unions are at least *paragenesic*; that is to say, that the mongrels of the first generation have a partial fecundity, but tend to necessary extinction, unless they are recruited by one of the parent stocks; in which case, they may breed indefinitely. The experience absolutely necessary to determine this question can, however, never be obtained. "It is absolutely unknown what is the relative proportion of Mulattoes of the first degree who intermarry between themselves, and such who intermix with other mestizos, or with individuals of a pure race; nor can we know what, in a given population, should be the normal proportion of these Mulattoes if they were perfectly prolific *between themselves*." The case of the mixtures between the Negro and the Caucasian would, under any evidence, be unsatisfactory, because neither race is on its native soil. The European would, in the opinion of many, be incapable of propagating his unmixed race in the West Indies, and the most southerly parts of the United States. Indeed, there are those who go so far as to say, that the European would in a

few generations be extinct altogether in America, if it were not for the constant introduction of fresh blood from the motherland. And these are the very same persons who deny the prolificacy of the Mulatto. It has also been stated, that the same tendency towards extinction is visible in the pure Negro; certainly north of a certain degree of latitude,* but also throughout the West Indies.† Now, if this is the case, it is most likely that the want of power of perfect acclimation, which appears in both races, would be intensified in their offspring; and also that such tendency would be somewhat counteracted if such offspring was crossed again by one of the original stocks, who in many cases would spring from ancestors more recently imported from the native country.

If, for instance, the observations of M. Broca on the mixed populations of France had been made, not in France, the climate of which is favourable to the original stocks, but in some climate, such as that of Algeria, which is the contrary, he would not have come so easily to the conclusion that they are thoroughly eugenic. We must not, therefore, assert that races brought together in a country foreign to both, are deficient in the power of breeding between each other; but are equally justified in supposing that the paucity in the number of cross-breeds may arise from the non-viability of the individuals caused by the nature of the climate, and that extinction, or a visible tendency to it, is brought about, not by any want of prolificacy, but by the premature death of individuals before they become thoroughly acclimated.

This, indeed, is partly admitted by M. Broca in a note,‡ where, speaking of Batavia, he says: "It seems thus that the influence of climate produces some modification in the generative powers of Europeans, rendering them less apt to procreate males *even with the women of their own race*. This modification may be transmitted to their descendants by intermixtures."

A disparity in the number of males would produce effects which there has been no attempt yet made to calculate.

So, also, of the Lipappen, or Mulattos of Java, we find that the

• In Louisiana the number of idiots among the Negroes is as 1 to	4,810
In South Carolina	1 " 2,477
In Virginia	1 " 1,200
In Massachusetts	1 " 43
In Maine	1 " 14

† By the excess of deaths over births, the Negro population in the whole of the English Antilles undergoes every year a diminution of 4 in 1000: in one of these islands (Tobago) the annual diminution attains the enormous number of 16 to 1000; and Col. Tulloch says, "Before a century the Negro race will be nearly extinct in the English colonies of the West Indies." (Boudin, tom. i, intr., p. xl.)

‡ P. 40.

Dutch do not perpetuate their race at Batavia; and "thus it is not demonstrated that the sterility of the Liplappen is the result of their hybridity." "But," says M. Broca, "if the defective fecundity of the Liplappen of Java is due to the deleterious influence of climate, it is very difficult to attribute the great prolificness of the Malay-Chinese to the benignity of the same climate." We see no difficulty in this at all. The climate which is deleterious to the European may not be so to the Chinese. As the latter do not bring their own women with them, we cannot tell, by direct evidence, that they would be as prolific as at home, contrary to what we have just seen to be the case with the Dutch. But so far as the facts can be a guide, it is fairer to say that the prolificacy of the Malay-Chinese rather shows the climate to be not unhealthy for the latter, than that the comparative paucity of Chinese is the reason why their Mulattoes thrive in some of the islands of the Indian Archipelago. And "the more eastern islands, where the Malay-Chinese do not thrive, *are more unhealthy than Java.*" This, again, is in favour of the theory, that climatic influences are more at the bottom of a seeming want of prolificacy, than any immediate cause affecting generation itself.

The opinion of Dr. Bowring with respect to the hybrids of Malasia seems quite opposed to that of M. Broca. "A middle race," says he, "such as China contributes in the shape of emigrating millions, is wonderfully advancing the work of civilisation. The mestizo descendants of Chinese fathers and Indian mothers form incomparably the most promising portion of the Philippine population.* . . . The mestizos, or mixed races, form a numerous and influential portion of the Filipinos. The highest society is seldom without a large proportion of mestiza ladies, children of Spanish fathers and native mothers. The great majority of the merchants and landed proprietors belong to this class, and most of the subordinate offices of government are filled by them. There are very many descendants of Chinese by native women; but the paternal type seems so to absorb the maternal, that the children for whole generations bear the strongly marked character which distinguishes the genuine native of the Flowery Land, even through a succession of Indian mothers. De Mas speaks in the highest terms of the mestizos of Chinese or Mongolian descent. . . . There can be no doubt that the predominance of the characteristics of the father over those of the mother has improved, through successive generations, the general character of the race of mestizo-Chinese. The children of a Spanish mestizo, by a Chinese mestiza, are called *Torna atras—Going back*; those of a Chinese mestizo by an Indian woman are considered as Chinese, and

* Bowring (Sir J.), "A Visit to the Philippine Islands," p. 109. London, 1839.

not Indian half-castes. The mingling of Chinese blood is observable in all the town populations.”*

The two most disparate branches of the human family are pronounced by M. Broca to be the Anglo-Saxons and the Andamenes generally; under which name are understood to be comprised the Australians, Tasmanians, and all the blacks with woolly hair of Melanesia and Malasia. And he states that, according to the accounts of most authors, the Mulattoes of Australian and English are exceedingly rare; so much so, that their very existence has been denied. Hence one of his results is formulated as follows: “8. That the lowest degree of human hybridity, in which the homœogenesis is so feeble as to render the fecundity of the first crossing uncertain, is exhibited in the most disparate crossings between one of the most elevated and the two lowest races of humanity.”

The evidence brought forward to support this conclusion occupies about fifteen pages, or nearly one quarter of M. Broca's book. We may therefore assume that, even in his own opinion, this point is of great importance for him to prove. If his authorities are at fault, or subsequent investigations produce different results, it would seem difficult to attach much importance to the remaining portions of his argument, except so far as the proofs go which he has collected of the instances in which different races are undoubtedly eugenesic.

The authorities themselves are at once purely negative; and as the information of travellers must have been derived from the colonists of Australia and Tasmania, they are entirely dependent upon the feelings and prejudices of those colonists. To Englishmen, who were accustomed not many years ago to shoot down the “blacks” as if they were animals, any inquiries respecting their children would seem very superfluous. And the easiest way of warding off any unpleasant investigations as to what became of the half-breeds, would be to assert that such never came to anything. This element in the value of the information adduced by M. Broca does not seem to be taken into account by him. It may, however, be said that a very different tone now prevails in dealing with these aborigines; and consequently, that if any such Mulattoes are born, we ought to hear something of them. But in his *Treatise on the Races of Man*, published in 1859, M. Omalius d'Halloy still finds himself enabled to say: “It is remarkable that, though a considerable number of Europeans now inhabit the same country as the Andamenes, *no mention is made of the existence of hybrids resulting from their union.*” This might seem conclusive. But singularly enough, almost at the very moment that the volume of M. Broca was being given to the English public,

* *Ib.*, p. 113, et seq.

in a debate of the Anthropological Society of Paris, an exactly opposite assertion has been made with every appearance of being well-founded. "Finally, M. Dally brings forward, always without proofs, *the almost perfect infecundity* of the Anglo-Saxon with the Australian and Tasmanian female; and that proposition is asserted in 1863, just when the Australian newspapers are taking notice of entire populations of these half-breeds in the islands of Bass's Straits; half-breeds whom these newspapers praise most highly from the triple point of a physical, moral, and intellectual view."*

Here issue is fairly joined on this interesting question; and we cannot suppose that there will be much difficulty in ascertaining on which side the truth lies. Should the assertion of M. Boudin be correct, the views of M. Broca must necessarily be very much modified.

Meanwhile, it is very remarkable that he should make no mention at all of the well-known case of the Pitcairn islanders. A more authentic instance of a cross-breed between Englishmen and Polynesians, and their descendants, can never occur; and we will conclude our remarks on M. Broca, by extracting the latest account of them from the *Cruise of the Fawn*, leaving our readers to draw their own conclusions.

"Nine Englishmen, six Otaheite men, and twelve Otaheite women, arrived at the little island of Pitcairn shortly after the mutiny of the *Bounty* in 1790. All the men, except two Englishmen, had destroyed each other by 1799; and in that year one of the remaining Englishmen died also.

"The mixed progeny of Englishmen and Otaheitans had increased, in 1831, to eighty-five, and they had some difficulty in finding means of subsistence on the island. They were, therefore, all removed at their own request to Tahiti. But after a residence there of nine months, being disgusted with the levity and low morality of their Tahitian friends and relatives, and having lost twelve of their number by fever, they returned to Pitcairn.

"Their numbers began again to increase so fast, that in 1855 they petitioned the British government to grant them Norfolk Island for their own; and in 1856 they were removed thither.

"Two families have already returned, consisting chiefly of young girls. One of the matrons told me her husband had promised that four or five of his boys should go down by-and-bye to marry their cousins, *for all are more or less nearly related*. Uncles and aunts are seen carried about in the arms of their nephews and nieces, and it will be a difficult matter, by-and-bye, for the genealogist of Norfolk Island to make out a correct family tree. The women, it seems, have numerous families, and the number of marriageable females considerably exceeds that of the young men; so there are now somewhere

* Bulletins de la Soc. d'Anthrop. de Paris, tom. iv, p. 681.

about twenty doomed to celibacy, for no one is allowed to land upon the island without the approbation of the acting magistrate, and the consent of the governor.

“They have inherited a love of dancing from their Otaheitan mothers.”*

THOUGHTS AND FACTS CONTRIBUTING TO THE HISTORY OF MAN.

I. UNITY in Nature, and Uniformity in its Modes of Development.

II. Analogy in the Progressive Development of Man and Nature.

III. Analogy in the Progressive Development of the Individual Man and Nations.

IV. The Order of Nature is Progressive Development through Successive Stages.

V. The Stages of Development in Man and Nature are Rise, Progress, Maturity, Decline, and Decay.

VI. Adaptation in Nature of Everything to its Position in the World.

In the universe, from the larva of the butterfly, through man, to the entire system of the universe, all is progress through successive stages of development.

Progress through successive stages of development is the order (*κοσμος*) through which all things must of necessity move.

The progress which I would speak of here, is not progress as usually understood, progress in a straight line, it is progress in a circle; starting from a point, it comes back to the same point again.

In every species of development there is a culminating period, when every development reaches its highest point of perfection and fulness, which is manifested at the period of its existence by the beauty and perfection which the development attains to at that period.

It is the inevitable law of all developments, the tendency of all things after having reached maturity, to decline and to decay. Man and nations, art and nature, are equally subject to this law.

There is an expression used by a Greek philosopher, *κυκλος αναγκης*. It is a law of necessity that all things move in a circle. It is the law of development that all things have a rise, progress, maturity, decline, and decay; all things moving through their cycle of progressive development. The different geological ages are but cycles of development; the various extinct fossil animals are evidences of beings run-

* Hood's "Cruise of H.M.S. Fawn in 1862." London, 1863.

ning through their cycles of development, and ultimately dying out. Man himself has his cycle of development. The seasons undergo their changes in cycles. The earth and planets move in circles; the eclipses of the moon recur in a periodical cycle. By the precession of the equinoxes, the whole of the equator moves round that of the ecliptic, employing a period or cycle of no less than 25,868 years. According to Sir William Herschel, the sun itself, with the whole solar system, is performing a cycle, moving through space at the rate of 150 millions of miles a year.

The history of nations and peoples is but a history of developments, each people having its cycle of development.

As the laws which govern the planets in their course are modified by disturbing forces, so the laws of development are modified by climate, species, race, position in the world.

There is a distinct and separate development for man considered as the individual man, for man in the aggregate as a people, for man considered as the human race. The development of the individual man rarely ever exceeds the limits of one hundred years; of man as a people, seldom exceeds one thousand. To the development of the human race we can affix no period of limitation; but, considering that the world is now almost entirely discovered and peopled, and that there is no spot on the earth where there is any likelihood of another people arising and developing itself into a great nation, we may say that the development of the human race has reached its culminating point, and is now on the wane.

The great scheme of nature is a system of gradation and subordination one to another. From the trilobite, which is the earliest form of life, to man, all is gradation from a lower to a higher and more perfect form of organisation.

In the laws of development there are no sudden leaps, each stage must form a stepping-stone to the next stage. In the development of the laws of nature and science, each truth is the result of a former truth; each fact is a stepping-stone to the solution of another fact; each thought is the germ of another thought. There is a sequence in all things; one thing grows out of or is evolved from another.

As it gives us a high idea of the skill and ingenuity of a watchmaker when he makes a watch which will go on for years without there being any further need of having recourse to his skill and interference, so it ought to give us a lofty conception of a Deity, who has created a world whose system can proceed onwards by the government and development of *his* laws alone. And as it would prove want of skill and ingenuity in a watchmaker, who should make a watch which would frequently require his aid, so a constant interposition of

the Deity in the affairs of the world would be presuming a want of skill and carelessness in the development of those laws which the Divine lawgiver has imposed on the universe.

Development of Mind. The progress of the development of the human mind in different ages, climates, and circumstances is uniform, acting upon the same principle and to the same end.

Assuming that principle which is the essence of induction, the conviction of the universal and permanent uniformity of nature, it follows as a necessary consequence that the actions of man in the aggregate, and the development of the phenomena of the human mind, must share the same laws of order, uniformity, and continuity, which belong to all parts of the material world.

As it is the nature of the human mind to be always uniform in its operations, always consistent in its results, it follows that, when employed upon the same subjects, its results and conclusions are the same. As the Bishop of Natal beautifully expresses it, "The mind of man, in all ages and in all countries, musing on the origin of all things, has been led by a Divine instinct to the same grand conclusions."

Human nature is one and the same everywhere; the same wants beget the same invention and use of the same necessities to supply those wants; the same ideas arise within the mind of man, suggested by the same objects.

As in early childhood our natural instincts are more manifest, so in the earlier periods of human civilisation man's natural instincts are more fully developed.

There is an instinct peculiar to the common nature of man, by which man and nations, at each stage of their development, work out independently certain ideas and suggestions peculiar to those stages of development.

Man may undergo change of place, climate, and appearance; still the same development of mind takes place, subject to the laws that have operated through all ages.

Comte points out three distinct stages of human development—the theological, the metaphysical, the positive. These coincide with the stages of the development of mind in the individual man. In childhood all phenomena are explained by authority, or referred to powers which it cannot comprehend. Youth begins to think for itself, and is led to discuss metaphysical entities. Manhood is obliged to acknowledge that all phenomena are subject to law.

The suggestive principle is awakened by necessity in the mind of man, according as his wants and habits require.

This suggestive principle, which is peculiar to our common nature,

leads man to invent objects to supply his daily wants and requirements; other objects and forms being suggested as his necessities increase and are more widely extended. Does man want to tear up the soil to prepare it for the reception of grain, he invents the plough. Does he want to cut down timber, or does he require the use of some sharp instrument, the hardness of flint and of metal, and their capability to receive a fine edge, lead him to use those materials for that purpose, and suggests the form of a chisel, a hatchet, or a knife.* Is he at war with his enemies, with the same materials he forms an arrow, and, to inflict greater injury on his enemy, the shape of a barbed arrow is suggested to him. The softness of clay, and the hardness it acquires when baked in the sun, suggests the idea of making cups, vases, and other utensils of that material, and leads him to invent the potter's wheel. His taste unfolding and the suggestive principle developing itself more and more, he shapes other forms, and acquires a taste for ornamentation to be applied to these utensils. In the early periods everything suggested was of the simplest form. In the early modes of sepulture the simplest forms were adopted, and were such as would be naturally suggested. The tumulus, which was one of the simplest forms, was adopted in several parts of the world. The cromlech, which is also another simple form, is found all over the world, and is not a characteristic form adopted by any separate people, or indicative of any particular race. The pyramid, too, is a form of sepulture found in countries the most widely apart—in Egypt, in Central America, and in Japan.

Words and phrases expressive of similar ideas and usages are found in the early development of languages and peoples, which have their source in the nature of the human mind and of our sensations; for the development of the human mind is evolved under much the same relations in regard to external nature. Similar objects make similar impressions on the mind, which is one and the same everywhere. Darkness suggests the idea of death to the refined Greek, as well as to the barbarous American.

When the human mind reaches a certain period of development, certain ideas and facts, results of that stage of development, are necessarily evolved. We have an instance in the discovery of Neptune. The progress of astronomy had reached that stage when the discovery of Neptune as a part of the system of the universe could not but be evolved. Adams and Leverrier, working independently, were led to its discovery. In the progress of science, we also find Newton and Leibnitz developing further previously known scientific facts; discovering the doctrine of fluxions at nearly the same period. Many

* Man, as Franklin defines him, is a tool-making animal.

ideas and facts in metaphysics and science have been anticipated by the Hindoos and Egyptians. This was the result of the earlier development of these nations, they being many centuries in advance of European civilisation.

The various myths, legends, fables, and other products of the human mind in different countries, seemingly identical, prove that the spontaneous tendencies of human thought and imagination are similar in all countries. They are the phenomena of the human mind, developing themselves in accordance with laws peculiar to the human mind in its different stages of development. Among the mythological tales of Polynesia we find a great similarity to the fairy legends of Connaught.

Nothing can afford a stronger evidence of the uniformity of the operations of instinct and of the suggestive principle in the mind of man, than the striking resemblance of the worked flints to each other in almost every country where they have been found; they present identical forms, obviously the result of identical intention.

The various kinds of almost identical ornamentation found in widely apart nations without intercommunication, afford a remarkable evidence of independent evolution of the human mind, and self-development among nations. The simplest form of ornamentation, the zig-zag, is found wide spread among all nations. It is as naturally suggested to the savage in carving his club, as to the Greek artist in painting his vases, when the artistic instinct is awakened and developed in man. As Humboldt remarks, nations of very different descent, when in a similar uncivilised state, having the same disposition to simplify and generalise outlines, and being impelled by inherent mental disposition to form rhythmical repetitions and series, may be led to produce similar signs and symbols. The cross, another form of ornamentation, is found in endless varieties in the most widely apart countries. It is also a form naturally suggested to man at any period of his development, for it is merely the intersection of two lines. In the paintings on Egyptian tombs, crosses, with other fancy devices, may be seen figured on the robes of the Rot-n-n and the Rebo, a people dwelling in the vicinity of Mesopotamia, showing, as Sir Gardner Wilkinson remarks, that this very simple device was already in use as early as the fifteenth century before the Christian era. Crosses in endless varieties are found on the Greek vases. Crosses, with other patterns, are figured on the tombs in Phrygia. The cross is also a distinctive sign in several Mexican hieroglyphs. It forms the central ornament of a tablet at the back of an altar at Palenque. Specimens of Peruvian pottery have also been discovered with a row of well-defined Maltese crosses. The fret is almost uni-

versal; it is found in China, in Greece, in Mexico, Central America, and Peru. The wave scroll and the so-called Vitruvian scroll are found figured on Peruvian pottery.

Man being a creature of instincts, which are a part of his nature in every clime, and are universal, the same superstitious customs, which are the offspring of these instincts, will crop out in different countries. The belief in ghosts and the evil eye is universal. The same customs to avert the terrors of ghosts and of the evil eye are had recourse to in countries the most unconnected. The missionaries Huc and Gabet were astonished to find an extraordinary resemblance between Popery and Buddhism. In this there was nothing extraordinary, as the features of idol worship are the same in all countries. A coincidence of errors is the natural result of the unenlightened stage of man's development, and is as natural as to find similar imperfections, which "flesh is heir to", crop out in man, in nations, however widely apart.

The human mind is continually repeating itself. We find a family likeness in all the mental manifestations of the human family. The same physiological phenomena appear generation after generation, century after century. All prophecies, oracles, witchcrafts, miracle-mongers, table-turnings, spirit rappings, are but manifestations of the same human mind in an abnormal or diseased physical condition, these phenomena recurring at certain stages of man's development.

Development of Species and Race. Unity in typical structure and in one common nature, intellectual and physical, each species according to its distinct grade of development, is the connecting link between the diverse species of men.

Unity in typical structure and physical development is not enough to constitute an unity, or to establish an identity of species. A dog and a man have many things in common with regard to their typical structure. They have eyes, nose, mouth, ears, legs. A dog has reasoning powers, imagination; it shows the same passions with man; it exhibits anger, jealousy, love, generosity, fidelity, is taught by experience; yet no one will say that a dog and a man are of the same species.

The different expressions, unity of species, and oneness of the human species, seem to suggest different meanings. The unity of species would seem to imply that the entire human race was descended from one common stock; the oneness of the human species, that each species has many characteristics in common with the other species, and that they share the common instincts peculiar to the human race, and are endowed with a common typical structure, but still that each species has a separate and independent origin adapted to its position in the world, as in the lower animal creation several species share many instincts and distinct attributes in common, but still they are

distinct and separate species, fitted and adapted to their position in the world. The expressions, however, are used indiscriminately.

Unity in the intellectual and social development in man is the connecting link between the diverse races of men.

In accordance with the great scheme of nature, which is a system of gradation, there must be a gradation of the races of mankind. In corroboration of which we quote the following: "The leading characters of the various races of mankind are simply the representatives of particular stages in the development of the highest Caucasian type. The Negro exhibits permanently the imperfect brow, projecting lower jaw, and slender bent limbs of a Caucasian child some considerable time before the period of its birth. The aboriginal American represents the same child nearer birth. The Mongolian, the same child newly born." Therefore, if each race is a representative of a lower or higher stage of development, it follows as a necessary consequence that there must be a gradation of races from a lower to a higher race.

The relative position of each species of the human family must depend on its degree of development. Each species is the representative of a stage of development forming a grade in the ascending scale. According to Humboldt, the inhabitants of New Holland and Van Diemen's Land appear to stand in the lowest grade of civilisation. Professor Owen considers the Andaman Islanders to be in the lowest grade.

The degree of development any people can attain to depends on the species they belong to. The Malay, the Mongolian, the Negro, can reach a certain stage of development alone, and no further. As proofs of the development of peoples being arrested at a certain stage, we may quote the following. The Sandwich Islanders make progress in the early part of their education, and are so far apt and quick as children of civilised Europeans, but at this point they stop, and seem incapable of acquiring the higher branches of knowledge. Negro children also exhibit the same incapability of progress beyond a certain stage.

The great difference between man and man is in the greater or less perfection of his organisation. As there are grades of relative perfection, from the Negro to the Caucasian, so there are grades of perfection in the individuals of any separate nation or town, each differing according to the greater or less refinement of organisation.

From the uniformity in the law of adaptation of everything in nature to its position in the world, it is evident that the Caucasian and the Negro must have a different origin and be separate races. For the Negro is by his physical constitution adapted to a warm climate, the Caucasian to a mild climate.

Is there anything unreasonable in supposing that the same God who created endless varieties of species in the lower animal creation, and assigned them a region of the earth adapted to their physical constitution, from the infinitesimal infusoria to the gigantic elephant, could have also created separate and distinct species of men, fitted by their physical constitution to their position in the world?

Capability of improvement and power to attain to the highest and most perfect stage of development are the distinctive characteristics of the Caucasian race alone. Bunsen gives the following formula as a basis for some striking results respecting the universal history of mankind: "The nations who speak the languages reducible to a common centre in High Asia, are the *only* tribes who hitherto have taken a place in the history of the world."

When St. Paul announced to the assembled Athenians that "all nations are of one blood", it must be remembered that this was proclaimed to the Caucasian race alone, and was meant to the Caucasian race alone as the only race then known. The Mongolian, the Malay, the American, were then unknown. The Negro was totally ignored.

Race may be considered as a separate line of growth or development of one species, as the Saxon or Celtic races are distinct lines of growth of the Caucasian. In the opinion of Müller, "race" is derived, not from "radix", as was hitherto supposed, but from the old high German "reiza", line, lineage.

It has been said by Waitz (p. 265) that we see one and the same people proceed from barbarism to civilisation, and again relapse from its high state, and its capacities decline; but the cranial shape remains the same. This is the consequence of the law of development; in spite of cranial shape, peoples must have their rise, progress, maturity and decline; the law of development must be fulfilled. The Greek cranial shape still remains, but the Greek people have run through their cycle of development. It is the same with the individual man; however great may be his intellect, and however perfect the form of his head, the law of development must be fulfilled—he must pass through the stages of rise, maturity, and decline.

Man in his earliest stage of development was equally naked, both as to body and mind. Like other animals, without experience of the past, without knowledge of the future, he wandered through wilds and forests, guided and governed purely by the affections of his nature. In the words of Horace, quoted by Sir Charles Lyell, "men in this stage were a dumb and filthy herd; they fought for acorns and lurking places with their nails and fists, then with clubs, and at last with arms, which, taught by experience, they had forged. Man on emerging from this primitive barbarous stage became a nomadic hunter and

fisher, unacquainted with every art but the imperfect one of fabricating in a rude manner his arms and some household utensils, and of constructing and digging for himself an habitation, dependent on chance and the seasons for the means of satisfying his wants. In this stage the progress of man must have been extremely slow, as we still see evidences of it among the American Indians. As man advances, becoming conscious of the sustenance afforded by the animals he has tamed, and which he has learned to preserve and multiply, he becomes a shepherd, but to a certain extent continues a nomad, wandering with his flocks wherever pasture or security invites. In the further progress of his development, when no longer content with the fruit and plants which chance throws in his way, he learns to form a stock of them, to collect them around him, to sow, to plant them, to favour their reproduction by the labour of culture, he becomes stationary, and devotes himself to agriculture. The succeeding stage of his development is when, having acquired property in flocks, and in land which he has cleared and cultivated, and being anxious to secure quiet possession of what he had gained by his labour, conventions, tacit or expressed, were introduced into society, and became the rule of the actions of individuals, the measure of their claims, and the law of their reciprocal relations. Men experiencing the benefits derived from these, law and government were gradually evolved and developed. Law and government once established, the progress of the development of man increased rapidly until it reached that mature state when it culminated in the periods of high civilisation in Egypt, in Babylon, Nineveh, India.

Pickering remarks that it is a mistake to suppose that the pastoral or nomadic life is a stage in the progressive improvement of society. Pastoral life is as much a stage in the development of man, as childhood is a stage in the development of the individual man; many individuals, however, remain in a state of childhood all their life, but this is the result of an arrested development, and of course is an abnormal state. In those widely extended regions which Pickering mentions, where cultivation is impossible, all progress in development is necessarily checked.

All species and races have their cycles of development. Like the dodo of the Mauritius and the apteryx of New Zealand, whose species are now extinct, many races of men have run through their cycle of development, and become extinct. Several races in Europe and in Asia, and several tribes in America, have died out, and have completely passed away.

Development of Nations. The history of nations and peoples is but a history of developments, each people having its cycle of develop-

ment. Egypt, Babylon, Nineveh, having run through their cycle of development, other cycles take their course of development, in Greece and Rome; the same rise, progress, and decay is repeated in Italy. England and France are now in their cycles of development.

The sequence of the several stages of development can be as plainly traced in nations as in the individual man.

Egypt may be adduced as the first instance of self-tuition and self-development in a nation; for we have no record that Egypt learnt anything from any other nation. Egypt had kings, princes, and a form of government; Egypt had developed the arts and sciences requisite for the conception and execution of the stupendous monuments and works of art still extant, for many thousand years, when many of the surrounding countries were in a primitive and pastoral state.

In India we see the course of progressive development more strongly exemplified; for India, locked in by the Indus and the Himalaya, laying far away and apart, where even the faintest echoes of Greece or Europe could never reach her, ran through its solitary cycle, and worked out its own development alone. India has a literature of poetry and philosophy which reaches back to the earliest times, older than Troy and the *Iliad*, older than the Pentateuch; there were Indian poets before Homer lisped his first song; there were Indian thinkers and philosophers before Thales called water the *αρχη* of all things.

That nations work out their civilisation independently, and go through their stages of development without connection, is exemplified also in the self-developed civilisation of Mexico and Peru, where the remains of cities, temples, and vast public works, erected by a people endowed with high intellectual acquirements, can be traced. There have been discovered a system of canals for irrigation, long mining galleries cut in the solid rock in search of tin, lead, and copper; pyramids not unlike those of Egypt; earthenware vases and cups; and manuscripts containing records of their history;—all testifying to a high degree of scientific culture and practical skill. Their calendars also present evidences of native and local origin. According to Mr. Fergusson, examples occur in Peru of every intermediate gradation in the style of masonry, precisely corresponding with the gradual progress of art in Latium, or any European country where the Cyclopean or Pelagic style of building has been found.

There is no nation, however barbarous, which does not develop the germs of civilisation. Among the South Sea Islanders, when discovered by Cook, the applied sciences, if we may use the term, were not entirely unknown. They had observed something of the motions of the heavenly bodies, and watched with interest their revolutions, in order to apply their knowledge to the division of time. They were not entirely

deficient in the construction of instruments of husbandry, of war, and of music. Cut off from the influence of European civilisation, and deprived of intercourse with higher grades of mind, we still find the inherent principle of progression exhibiting itself, and the inventive and reasoning powers developed in the attempt to secure means of subsistence.*

It is a remarkable fact, that nature in the earliest periods, or, as we may say, in its infancy, was more active than in its later years, and produced more gigantic efforts than now. Nations, also, in their earliest periods were more active, produced more wonderful works, and executed structures which outvie in magnitude the boldest efforts of modern genius; as instances, we can mention the sculptured caves of Ellora, the Etruscan walls of Cortona and Fiesole, the Druidical circle of Stonehenge. When we recollect that these were the first efforts of the human race, made without pattern, designed without exemplar, commenced and carried out without experience, they cannot but give us a high idea of the energy and intellectual powers of man in the youthful stage of his development. As Dr. Wilson observes, "there seems to be an epoch in the early history of man, when what may be styled the megalithic era of art develops itself under the utmost variety of circumstances. It is one of the most characteristic features pertaining to the development of human thought in the earliest stages of constructive skill."

The age or degree of civilisation any nation has reached, may be inferred from the kinds of poetry, painting, architecture, that prevail at any certain time, which mark the stages of its development. Poetry seems to have taken its origin in a hymn of praise and thanksgiving to the Deity; this is its first stage; then comes the ballad or short mythic poem; next the epic, which is a descriptive poem; in another stage the lyric poem is evolved, which is the spontaneous overflow of powerful feelings, accompanied by music; next is the tragic poem, which combined a dramatic narrative with lyrical poetry; at a later period came the didactic; the satire argues a declining state of civilisation. The first attempts at painting were representations of animals, which were generally symbolical; then came rude representations of man, which progressed in different stages to its highest perfection. The same progress and stages of development are manifest in architecture, the styles and the ornaments varying according to the nation where it took its origin.

* This view of the civilisation of Mexico, Peru, and the South Sea Islands, must be qualified by considering that the American race can attain to civilisation in a certain degree only, and can never reach the refined and intellectual civilisation which can be attained by the Caucasian race alone.

The metre used in the early poetry of nations is peculiar to its stage of development. We find the ballad measure of the early poetry of nations the most remote from one another almost similar. The ballad poems of Spain and Germany contain many Saturnian verses. Indeed, as Macaulay says, there cannot be a more perfect Saturnian line than one which is sung in every English nursery—

“The queen was in her parlour eating bread and honey”.

Yet the author of this line, we may be assured, borrowed nothing from either Nævius or Archilochus.

History has been contemptuously called an old almanac. This is but too true; for as the moon, after having fulfilled its synodical period, comes round to the same point, its eclipses occurring in exactly the same order again, and an almanac of a past year can be used for the present year, so frequently the actions and events of past years are repeated, and history can teach us to follow the sequence and order of recurring events. We find an instance in the history of the French revolution. The sequence of events in the French revolution may be placed side by side with those of the English revolution. The stages of the progress of intellectual development were almost similar in England and in France. In France, indeed, the development was later; but, as Buckle says, when the development had fairly begun, the antecedents of its success were among both peoples precisely the same.

Development of Early Races. The similarity of the earlier productions of art among different peoples is but the result of the suggestions and inspirations of an universal instinct peculiar to our common nature.

Two useful instruments are found amongst early nations the most remote from one another, as the invention and suggestions of necessity, without being communicated from any other nation—the plough and the potter's wheel.

The weapons, tools, instruments, ornamentation, pottery, of each stage of man's development, are almost similar in all countries. The flint implements of the gravel drift found in England, are almost similar to those found at Abbeville, and St. Acheul, in France. The stone implements of Denmark, Ireland, France, New Zealand, Mexico, Teneriffe, are almost identical. The pottery of this age is very much akin, the ornamentation on it being also very similar. The tools and weapons of the bronze period in Ireland, Denmark, Italy, America, bear a distinct analogy to one another. The settlements of the bronze period in Switzerland are marked by tools, ornaments, pottery, closely resembling those of the same age in Denmark.

The flint axes found in the gravel drift are evidences of a still earlier development, than the stone period, of the suggestive principle in man. According to Mr. Evans, the flint weapons found in conjunction with elephant remains, imbedded in gravel, overlaid by sand and brick earth, present no analogy to the well known implements of the so-called Celtic or stone period. They have every appearance of having been fabricated by another race of men, and are on a much larger scale, as well as of ruder workmanship. They are thus evidences of a much earlier stage of development, and of an age of ruder strength, and of still more infantine skill; perhaps too, of an earlier species of a human-like race, a connecting link between the pithecoïd and the human species, of which the Neanderthal skull may afford a specimen.

In Mexico and Teneriffe, obsidian has been found in great quantities. Its presence has suggested its use for similar purposes. The Mexicans used obsidian for hatchets, similar to those used by the Gauls and the South Sea Islanders. It was also employed for knives, sword-blades, etc. In like manner, the Guanches (the ancient inhabitants of Teneriffe) fixed splinters of that mineral to the end of their lances. In both countries this variety of lava was employed as an object of ornament. Obsidian, jade, and Lydian stone are, Humboldt remarks, three minerals, which nations ignorant of the use of copper or iron have in all ages employed for making keen-edged weapons.

In studying the manners and customs of savage nations at the present day, and the instruments they use, we find a reflex of the habits and mode of life of our own rude ancestors, and a means of better comprehending the uses some instruments are applied to, and the solution of many things unexplained with regard to their habits and customs.

In the early stages of the development of nations, uncultivated minds have rude tastes. Hence there is a remarkable resemblance in the taste for ornament in their early stage. The ornamentation and decorations which are the objects of their taste are almost similar in the likeness they bear to one another and in their rudeness. In the earliest or barbarous stage we find a fondness for the zigzag meander fret, or such ornament as we find in the clubs of the South Sea Islanders, or in the very early Greek races. Similar designs adorn the common pottery at Maypuré, on the banks of the Orinoco; they ornament the bucklers of the Otaheitan; the fishing implements of the Esquimaux, and the walls of the Mexican palace of Mitla; for there is a tendency in the mind of man in the infancy of nations to take a sensible pleasure in the symmetric repetition of the same forms, and an inclination to follow a rhythmic order in its rudest essays of

poetry and song, as well as in its earliest attempts at ornament. In the next stage, a taste is evolved for the rude representations of animals, as we see in the early sculptures of Nineveh, and in the Greek and Etruscan vases. In the development of the architecture of the middle ages there is a coincidence of tastes, another cycle of development beginning its course. In the early period we find the same zigzag moulding, and later the same taste for the rude representations of animals.

In several ancient countries we find reminiscences of an earlier race, which seem to have been the primitive agricultural inhabitants of the soil, such as the Aryans in Asia, the Pelasgi in Greece, the Toltecs in Mexico. According to Muller, the Aryans, who were the ancestors of the Indians and Persians, who spoke a language not yet Sanscrit or Greek, but which contained the germs of all, led the life of agricultural nomads. They knew the art of ploughing. They had domesticated the most important animals—the cow, the horse, the sheep, the dog; they were acquainted with the useful metals. The etymological signification of Arya, he adds, seems to be “one who ploughs or tills.” The Pelasgi, the aboriginal race in Greece, were famous for their agricultural skill. The Latin words which are expressive of the events or simple relations of a pastoral, agricultural people, such as *pater*, *mater*, *aratrum*, *bos*, *ager*, can only be ascribed to the Pelasgic colonisers of Italy. With regard to the Toltecs, Prescott writes that they were instructed in agriculture, and in many of the most useful mechanic arts. In the early periods of Peru, Manco Capac, the Child of the Sun, entered upon his beneficent mission among the rude inhabitants of the country by teaching the men the arts of agriculture. Tacitus also describes the ancient Germans as agricultural nomads.

The lake habitations, or, as they are called in Ireland, *crannoges*, used by the primitive races of men in their early stage of development, are evidences of man under similar circumstances having recourse to similar expedients. The necessity of security, among the early savage peoples, suggested to man in that state of warfare the expedient of forming his abode or dwelling in lakes at some distance from the shore, thus obtaining security and freedom from attack. These are found among peoples widely apart; they were constructed by a Thracian tribe dwelling in Prasias, a small mountain lake of Pœonia, as described by Herodotus. They are found in Switzerland, in Ireland, and among the Papoos of New Guinea. The Swiss lake dwellings are, as Mr. Rawlinson remarks, the work of a race who formed for themselves habitations almost exactly like those which Herodotus describes.

The so-called raths in different parts of Ireland were, like the enclosures by the Indian tribes, formed for similar purposes of security, and for stores for grain in the early ages in pastoral countries. The so-called raths are always found in wide pasture grounds.

Development of Language. Language is the result of progressive development, originating in the attempts of man to express his wants by articulating sounds suggestive of the thing signified. Language, in its earliest stage of development, was monosyllabic, such as used by the Chinese, and is a form into which human discourse naturally, and as it were spontaneously throws itself. Language in its more complete and grammatical form, or the relation of intelligible sounds to one another, is the result of mind in a more advanced stage of man's development. Language, like other developments of instinct and reason peculiar to man, is evolved independently by the divers races of man.

The monosyllabic is the child stage of the development of language. The Chinese is the child language of the human race. The stages of the progressive development of language are the *radical*, the *agglutinative*, and *inflectional*. Some nations, however, have adhered to, and still retain their language in its earlier stage of development. The Chinese and the Turanians have rigidly retained each their language in its earlier stage; its normal progress of development was thus arrested. The Chinese language is still in the radical stage, the Turanian in the agglutinative. The inflectional stage, as among the Aryans, is, it is evident, the most perfect stage of the development of language. To reach this perfect stage, language must pass through the earlier stages of radical and agglutinative; as Müller remarks, we cannot resist the conclusion that what is now inflectional, was formerly agglutinative, and what is now agglutinative was at first radical.

The instinctive utterances of man in his earliest stage of development, when attempting to give articulate expression to his thoughts and feelings, form the primitive roots and germs of language; for instance, the root "pa," to feed, is one of those instinctive utterances from which many words may be developed. As a further instance of instinctive utterances, forming the same roots in nearly all languages, we may give the words "po" (father) and "me" (mother), in Siamese. As Sir John Bowring remarks, these two sounds, or something approaching them, being the first lipings of infancy, may be found indicating the parental relations in almost every language of the world. The root "ar," which means to plough, to open the soil, is another instance of instinctive utterance forming the germ of many words.

The so-called Aryan roots are nothing but the first instinctive utterances of man in the earliest stage of his development, and are con-

sequently the germs of language in all countries. The similar construction of remote languages is the result of the laws of the human mind, which are similarly developed in man, dwelling however widely apart, and by which, in the process of the construction of language, similar words and forms are independently evolved. For example, a savage owning a horse, to which he gives a name, forms a nominative case. Considering himself as owner of a horse, he forms a genitive case. Wishing to give something to eat to his horse, he forms a dative case. Announcing himself as owner of a horse, he says, "I have a horse"; thus he forms an accusative case. A verb may be evolved in a similar manner.

Language has its stages of development, its progress, maturity, decline, and extinction. Bunsen remarks that—"We shall take it for granted as a general principle, flowing from a very simple and therefore universal law, that the substantial or particle language is the most ancient possible, and that the relative position and succession of the other languages will have to be made dependent upon its degree of development. The less developed language will have branched off from the original stock at an earlier period than that which presents a higher degree of development. This forms the ascending line of development. When the language has arrived at its culminating point as to its forms, the descending line will begin, which is a gradual decay of those forms. The languages of the emigrating tribes, if we possess early documents, will show us the state of development of which they are as it were the deposit, and which decide the place they are to occupy in the general scale."

Each branch of language represents the stage of development language has reached. The Chinese or monosyllabic, the Turanian or agglutinative, the Aryan or inflectional, represent the stages of development of the Indo-European branch in the ascending scale.

In the opinion of Bunsen, the Chamitic, the Chaldee, the Hebrew, are the representatives of the stages of the development of the Semitic branch of language.

According to Müller, the Tungusic, the Mongolian, and the Turkic are the stages of development in the ascending scale of the Turanian languages.

An important indication of the stage of development a nation has reached is the form of its language, or its modes of expressing words and ideas. The radical form of language as among the Chinese, and the agglutinative as among the Turanians, are proofs of early stages of development. The picture writing of Mexico is an evidence of the Mexican nation being in an early stage of development.

That the varieties of language are the result of the independent de-

velopment of speech in man, we have the confirmatory opinion of Agassiz: his words are—"As for languages, their common structure, and even the analogy in the sounds of different languages, far from indicating a derivation one from another, seem to us rather the necessary result of that similarity in the organs of speech which causes them naturally to produce the same sound. Who would now deny that it is as natural for men to speak as it is for a dog to bark, for an ass to bray, for a lion to roar, for a wolf to howl, when we see that no nations are so barbarous, so deprived of all human character, as to be unable to express in language their desires, their fears, their hopes?"

That there is an instinct or instinctive principle common to the human mind which teaches man to work out languages independently, we may quote a passage from Dr. Wilson, which is to the purpose. "By inflections as truly regulated by the science of grammatical laws as the language in which Plato wrote and Pindar sung, the wild unlettered Indian modifies each root-word or complex word sentence so as to express number, time, quality, or passions, as if guided by an intellectual instinct operating upon the reasoning faculty common to man."

Development of Religion. In religion, Fetichism is the lowest and earliest stage of its development. Fetichism is still found among the negroes, where supernatural powers are attributed to inanimate objects. In a further stage, man, experiencing the influence and mastery of the elements and the physical powers of nature over his actions, and feeling his weakness and incapability to resist their agencies, was led to propitiate and worship them. Then follows polytheism, when mankind, endowing these powers and influences with thoughts, feelings, and shape like his own, and attributing to them a will to do good and evil, was led to worship them as superior beings, and by sacrifices to them to obtain their good will and to avert their anger. Hero worship was also a development of this stage. In a later stage monotheism was evolved, attributing all might and creative power to one superior anthropomorphic being, such as the Brahma of India, the Osiris of Egypt, the Jehovah of the Jews, the Zeus of the Greeks. Its development proceeded onward, until it culminated in the sublime idea evolved by the Grecian mind of the Deity being the infinite intelligence (*νοῦς*) pervading and ruling all things.

In the earliest stage of the development of man, adoration of the sun was an almost universal worship. Its representative, fire, also shared a similar extent of worship. Man, receiving his greatest blessings from the sun, showed his gratitude by the universality of the worship of that luminary. The proudest title assumed by the Pharaohs of Egypt and the Incas of Peru was "offspring of the sun."

Fire is the great civiliser. - When man learnt to produce fire, he made a great step in his development; from its usefulness and from the benefits derived from it, man in gratitude worshipped it. For the same reason, gratitude for the benefits derived from them, rivers and fountains have been worshipped. The Indian worships the Ganges, the Egyptian worshipped the Nile. Fountains and wells are objects of veneration in many countries. These and other modes of worship are grounded in the instincts of mankind, and are evolved in accordance with the stages of man's intellectual development.

In the earlier ages of nations no adequate idea of God is developed but such as would be formed by a child. In the writings of Homer, and the earliest writings of ancient nations, we find no adequate conception of the divine nature but what we see in the case of children, diversified here and there by some happy surmise or solitary flash of truth. A purer conception of the Deity was formed in a later stage of development. Anaxagoras was the first among the Greeks who recognised the existence of a supreme intelligence directing and governing all things.

The mythology of various nations is nothing but the embodiment or giving human form and shape to the various physical agencies of nature. Such ideas seem to have arisen within the minds of, and have been suggested to, the people of various nations in their primitive state, this of course more or less modified by circumstances, such as the land they live in, the climate, the temperament.

The mythical origin of mythology would seem to be of later origin than the elementary. The mythical is but the poetical embellishment of the elementary. The mythical is the youth, the elementary, the childhood of the religious development of a nation.

The law of adaptation of every thing to its position in the world, is not only evident in the adaptation of the camel to the desert, the whale and the walrus to the northern ocean, but we may also adduce, as a wonderful instance of adaptation in nature, the eyeless fish (*Amblyopsis pellucida*) in the mammoth cave of Kentucky. Its eyes are covered by an opaque skin, or are entirely absent. The natural conclusion is, that, from the dark and gloomy habitat of this singular fish, the power of vision being unnecessary, nature, which adapts every living creature to the mode of life assigned to it, has withheld a faculty which would serve no purpose in the economy of its being. The appearance of eyes is preserved in obedience to the law of uniformity in nature, as paps are in man.

STAGES OF DEVELOPMENT.

Man as Individual.	Man as Race.	Man. Mind.	Language.	Weapons. Tools.	Religion.
Childhood	Turpe pecus	Theological	Radical	Flints of the	Fetichism
Youth	Hunter	Metaphysical	Agglutinative	driftgravel	Polytheism
Manhood	Pastoral			Stone	Idea of Deity
Old age	Agricultural State	Positive	Inflectional	Bronze Iron	as superior anthromorphic being Idea of Deity as supreme mind

 THE IMPORTANCE OF METHODICAL CLASSIFICATION
 IN AMERICAN RESEARCHES.*

By A. de BELLECOMBE,

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Translated by WILLIAM H. GARRETT, F.A.S.L.

ASSEMBLED for the instruction of a purely American society, we must commence by rendering unto Cæsar the things which are Cæsar's. The idea of originating this Society does not belong to us; we only continue the undertaking with the concurrence of its learned promoters.

About five years ago, one of our most distinguished young scholars, M. Léon de Rosny, now professor at the Imperial Library, and M. l'Abbé Brasseur de Bourbourg, a missionary and traveller, well known for his important works upon Mexico, struck with the neglect of Europe towards America, conceived the desire of accomplishing for the New World what had long been effected for Asia and other eastern countries, by bringing into one centre all works treating upon America. At that time there was not an American society in Europe; even England, which had so often led the way in science, and discoveries of all kinds, had not conceived the idea of establishing it. Messrs. de Rosny and Brasseur de Bourbourg, with the assistance of many members of the Institute and others, feeling the time most favourable for the institution of such a society, set themselves earnestly to the task, and from the masses of statistical and topographical information, scattered or buried in unappreciated volumes, compiled their admirable works.

* This address was delivered to the Comité d'Archéologie Américaine de France by M. de Bellecombe, July 23rd, 1863. (Tr.)

One section searched amid the philosophic and religious traditions of America, to find, if possible, traces of a common origin with European people; another section entered into a comparison of the indigenous American languages with those of the three ancient continents; while a third explored the history of the country before the Conquest. One examined the national literature, another was devoted to the fine arts of Mexico and Peru, whose little known and poorly appreciated remains are still visible to travellers.

Such, in part at least, was the function of *La Revue Américaine*, established by M. de Rosny, a publication which has hitherto met with the most encouraging success, and has reached its eighth volume. Among its contents will be found papers of the greatest interest and research on the several subjects just mentioned.*

From 1858 to 1862 important articles appeared in the Review upon the American nations before the Conquest, throwing new light upon questions which, though still somewhat obscure, are certain one day to be elucidated.

Among these papers may be mentioned "Studies on the Constitution of the New World," by M. Charles de Labarthe; "Essays upon the Science of American Language," by M. l'Abbé Brasseur de Bourbourg; and "Central America and its Monuments," by the venerable Jomard, whose recent loss the learned world deploras. There are also the very curious papers of M. Aubin, on "The Didactic Painting and Figurative Writing of the Ancient Mexicans;" "America before its Discovery," by the Abbé Domenech; "Mexican Palæography," by M. Ferdinand Denis; "The Grammatical Elements of the Othomi Language;" "The Relations of the Ancient Americans with the Peoples of Europe, Asia, and Africa," by M. José Perez, and many other works, the enumeration of which would occupy too much time.

In consequence of the efforts of these learned men, the directors of the Musée Impérial du Louvre earnestly took in hand the subjects of American architecture and sculpture, and ancient America began to occupy an important place in our public galleries.

An American society is still a desideratum in the learned world. The present seems a most favourable time for its establishment, when we call to mind that the New World is brought nearer to us by the extension of the telegraph, and by the adoption of our system of military tactics in the conduct of that fratricidal war now unhappily dividing the Northern United States from the Southern provinces. There is also the important question pending between France and Brazil, as to the possession of the immense province situated between the Rio Grande and the Oyapoe, a country which

* The first series appeared under the title of "Revue Orientale et Américaine".

has been the scene of the struggles of our gallant soldiers* for the last two years, and the principal cities of which, Puebla and Mexico, have but recently yielded to our arms. On these and other grounds we are convinced that an American society is an institution not only useful, but highly necessary.

And now, suppose we succeed in founding such a society, what assurance have we of its duration? Our answer is that its permanence is beyond question, provided we heartily unite, and resolutely concentrate our powers, experience, and labours upon those distant lands, which are assuredly not more inaccessible to scientific investigation than they were to the destroying swords of the Spaniards.

Our desire to-day is to lay open this strange and mysterious America, with its legends historical and fabulous, its undeciphered monuments, its original manners and usages.

Having premised so much, we must now refer, as briefly as possible, to those subjects which will first occupy our attention.

Among all nations the primary inquiry should be as to their religion; after that follows the study of their history. Religion, though it throws no light upon the origin of the indigenous inhabitants of America, gives certain connecting links between these peoples and the inhabitants of Asia, Europe, and Africa. For instance, the Peruvians and Mexicans have their general and partial deluge. The four brothers Ayar Tapa among the Peruvians, Cortoz and Quitequetzel among the Mexicans, are the Satiavetra of the Indians, the Xizouthros of the Chaldeans, the Peroun of the Chinese, the Ogyges of the Greeks, and the Noah of the Bible!

The Kiouasa of Virginia is the Jupiter of the pagan Olympus. The Toia of Florida is the Christian Satan; the Zemes of the Antilles are the Darvans of Persia. Attabeira of Haïti is the Phrygian Cybele; the Mexican Theotl, Flacatekolototl, and Miclantemcli, form the Indian Trinity, represented by Brahma, Vishnu, and Siva; Vitzlipochtli, the Grecian Mars or the Gaulish Taran; Pachakamak is Apollo; Joalticiti is the Lucinian Juno; Xintenchtl is Vulcan. Polytheism prevails everywhere. There are gods of the air, of fire, of wind, of the heavens, and of the earth; gods of war, of peace, of evil, of good, and of justice; gods of the sun, of the moon and of the stars; of houses, of medicine, and of agriculture, of hunting, of fishing, and of travelling; in short, gods of everything, near or afar, which is supposed to influence the moral and physical state of man, all relating to a Great Spirit or Manitu, not less great, noble, or sublime than the Jehovah of the Hebrews.

The Peruvians and the other indigenous inhabitants of America, to whom the idea of the immortality of the soul became by some means

* The French army. (Tr.)

communicated, had, besides their rites and ceremonies, their human sacrifices.

I shall not dwell on the singular relations which existed, or are said to have existed between the primitive Americans and the navigators and travellers of other parts of the globe, because, with a spirit of partiality easily understood, these have been in all probability greatly exaggerated. There are curious resemblances between the races, the characters, the religions, and the languages of America and those of India, China, and Phœnicia. But the great question of the origin of the American races still remains for solution. In our opinion it would be rash in the extreme to take certain physical and moral resemblances in races or analogies and affinities in languages or religions, or certain philosophic tendencies, and on these to base the theory that Asia is the cradle of the Mexican people. Until the contrary has been clearly proved, we must continue to believe that the Americans are indigenous, and that the great southern migrations—the three great races, the Aztecs, Toltecs, and Chichimecs in Mexico, the Aymarás, under the command of Manco-Capac, in Peru—have all sprung from the same root, and are without doubt indigenous to America.

The course of all these primitive migrations being from north to south, it may be fairly inferred that the Americans of the south came originally from the north. It is in this part of the New World we must search for the original seats of the great indigenous races which inhabit it. It must be confessed, however, that the traditions of the north are little known, and that researches in that quarter are extremely difficult; but it is into the *unknown* that our labours lead us.

We shall next consider the judicial and administrative customs anterior to Columbus. And here we find a vast field opens before us; and Manco Inca among the Peruvians, Quetzalcoatl among the Mexicans, are legislators and statesmen who cannot fail to excite our curiosity. The incomplete information we possess of Mexican legislation furnishes us, however, with some idea of the divisions and classes of the people. The nobles possessed honours, authority, and legislative powers, as well as military and judicial authority. There was a proud and haughty clergy, a labouring population, and a class of abject slaves. We find among the Mosquitos of Guatemala monarchy, with its aristocracy and hereditary peerage, its sovereign council of state; its laws and penalties for sacrilege—mild against the nobles, severe against the common people. And here we cannot help admiring the Peruvian custom which humanely equalised domestic labours and duties between the man and the woman, the husband and the wife.

As regards history, who were the people whom Columbus, Amerigo Vespucci, Cortez, Almagro, and Pizarro found in the New World?

In Brazil, the Tapayas or Tabaiaras claim attention for their resemblance to the Mongols in the colour of their skin and the form of their features, and the Tupis or Tupinambas for a Caucasian physiognomy. In Columbia, the Caribs or Caraïbs are cannibal hordes who inhabit the vast plains of the Caraccas, of Cumana, of Apure, and the Orinoco; they subsist by fishing and hunting, and on such wild fruits as they can gather. There are the Moscas or Muyscas of the plateau of Bogotá; in Guiana the Galibis; in Florida the Apalaches, who derive their name from the mountains of their country; the Natchez, on the banks of the Missouri and the Ohio; the Hurons, the Algonquins, the Iroquois, and the Altekamocs, in Canada; the Osages, the Delawares or Abenaco, in Louisiana; the unconquerable Araucaños, in Chile, whose last chief scarcely a year ago was one of our adventurous countrymen; the Charruas, the Guaranis, the Abipones, and the other tribes of Paraguay and of Buenos Ayres; the Aucas and the Puelches of Patagonia; the Fuegians of Tierra del Fuego; the Malouins and the other islanders; the Changuenes of Costa Rica, the Mosquitos, the Zambos, and the Poyais of Guatemala; the Quichuas, the Atacamans, the Yuaracaris, the Apolistas of Peru; the Tepanecs, the Olmecs, the Aztecs, the Toltecs, the Chichimecs, and the Xicalancs of Mexico. These are the principal peoples which were vanquished by the invading and conquering Europeans. What do we know of their history? Nothing more than some few characteristic facts, some unconnected episodes, some details more or less fabulous, to be found scattered in the histories of Ixtlixochitl, of Tezozomoc, of Balboa, of Zurita, or of Montesinos.

Thus, for instance, we read of the foundation of the Peruvian city of Cuzco, by Manco-Capac I, who flourished about 2,900 years before Christ; of the establishment by him of the first Peruvian government; and further, of the great wars of Sinchiroca, one of his successors, against the princes of Antigmalas.

Under the reign of Ayar-tarco-Cupo (about 4,000 years before Christ), we hear of the appearance of giants, and of the subsequent wars of Titu Yupangui, surnamed the happy or Pachacuti, against the Chimos. Then follows the downfall of the first religion under Cao-Manco, and its re-establishment by his successor Marasco, also surnamed Pachacuti (about 1,166 B.C.), the end of the first Peruvian dynasty consisting of thirty-two kings, 880 years before Christ; and about the same epoch the establishment of the second dynasty. We now come to the valuable astronomical discoveries of the learned kings Ayay-Manco, Capac-Rami-Amanta, and Toca-Corca-Apu-

capac; the first of whom reformed the Calendar, and introduced the intercalary days; and the second invented the scale of the solar hours; while the last discovered the equinoxes, divided the year into four seasons, and founded, it is said, the University of Cuzco. The appearance of many frightful comets in the reign of Huamantaco-Amanta presaged the dreadful wars and revolutions which distinguished the reign of his successor Titu-Yupangui Pachacuti VI, a prince contemporary with the Christian era.

With regard to the Mexicans, we possess a long list of their sovereigns and kings who reigned during the three following great epochs. First, the appearance of the Chichimecs in Mexico, under the command of their chief Chichimecatl, long before the Christian era. 2nd. The invasion of the Toltecs in the seventh century of the Christian era. 3rd. The overthrow of the Toltecs by the Aztecs in the twelfth century. These are the three great historical epochs, before the conquest of Mexico, but there are long periods to be filled up, ere we can reconstruct the national history of that country.

Mexican history becomes of real importance about the beginning of the fourteenth century. The Aztecs, driven out by Tula, took refuge in Anahuac, and restored Tezcuco, which, under the influence of its king, became the resort of all the poets, artists, and men of learning of the period.

Remarkable monuments adorned this populous and flourishing city, which subsequent Mexican historians delighted to call the Athens of Anahuac. The Acolhues united to their conquerors, the Chichimecs, and founded a city not less celebrated than that just referred to. It was known at first under the name of Tenochtitlan, and was founded on many low islands connected by solid dykes, and adorned by floating gardens, attached to the four quarters into which it was divided.

Disastrous wars broke out between the Chichimecs and the neighbouring tribes; the kings Acamiputzli, Huitzililhuitl, and Itscoatl increased their territories and enslaved the Tlepanecs, after a memorable siege, which recalls that of Troy.

The reigns of Montezuma I and of Nezahualcoyotl are the most illustrious in the annals of Mexico and Tezcuco. Brave and warlike, Montezuma was elected king by the chiefs and princes, and rendered his reign remarkable by constant and successful wars against the revolted inhabitants of Chalcos, Oaxaca, and the Tepanecs. He prevented the inundation of Lake Tezcuco, and enacted many just and benevolent laws. He took the priests under his special protection, and made himself loved and respected by all. Nezahualcoyotl, his friend, not less worthy or remarkable, driven at first from his throne by his infuriated enemies, pursued from cave to

cave, from mountain to mountain, was at length restored by Itzcoatl, who, touched by his misfortunes and his courage, showed himself as great and generous in prosperity as he had been noble and resigned in adversity. Nezahualcoyotl executed some very remarkable works, encouraged commerce and agriculture, and published a penal code calculated to reach and punish all misdemeanours. He repressed tyrants and oppressors, and placed the poor under the safeguard of enlightened and impartial justice. Nezahualcoyotl is the David of Anahuac, and the history of his persecutions, his sufferings, and his providential restoration would form an American *Odyssey*. Axajacatl, his cousin, and his brothers Tixoc and Ahuitzotl, worthily preserved the sceptre of Montezuma I, and transmitted it formidable and respected to Montezuma II, whose reign, however, was fated to be extinguished by the redoubted and avaricious conquerors from Europe.

The sixteenth century opens with Ahuitzotl and Montezuma, who changed the destinies of the Chichimecs and of their vassals or tributaries. These sovereigns brought discovered America into an unforeseen relation with the people of the west, entailing war and oppression on themselves, and on their children abject slavery.

From history we proceed to consider the indigenous languages.

In Brazil, the three principal languages spoken are the Guarani, Tupi, and Brazilian. They are defective in the sounds *f*, *l*, *r*, *s*, and *v*, as these are found in the Portuguese, and are the three chief dialects of which we have grammars and dictionaries.

The Aztec or Mexican is less sonorous than the Incas, as distinguished by the length of its words, the varieties of its meanings, and the absence of superlatives. Among the Toltecs there are few monosyllables, but there are words of not less than sixteen syllables, in which we do not find the consonants *b*, *d*, *r*, *g*, and *s*.

There are many other languages among the Mexicans, of which fourteen have grammars and dictionaries. These are the Othomi, Taraso, Zapotec, Mystec, Maya (of Yucatan), Totonac, Popoluc, Matlazingue, Huastec, Mixe Catchiquel, Taramare, Tepchuane, and Core.

The Peruvian language is in two divisions, that of the nobles or Incas, a species of masonic language spoken only by persons of the highest rank; and the popular or common tongue used by the lower classes, but known also to the nobles and aristocracy.

These indigenous tongues have not been replaced by those of the European conquerors. In Guatemala, says the Abbé Brasseur de Bourbourg, in his *History of the Civilised Nations of Mexico*,* the indigenous language or Maya is used by the Spaniards in preference even to their native tongue. In Mexico the Spanish language has

* Histoire des Nations Civilisées du Mexique.

not preserved its Castilian purity, for we find words entirely Aztec mixed up with it. We may remark that Latin outlived the eruption of the barbarians, and was preserved for centuries in Gaul, Spain, and Africa, notwithstanding the prevalence of the Frank, Visigoth, Ostrogoth, and Vandal languages.

We may infer from the various dialects of Guatemala, says the Dominican Francisco Ximenes, in his *Arte de las tres lenguas catchiquel, quiche y tzutuhil*, that all are derived from one, which has been corrupted in various ways in different provinces, but the roots of the verbs and the substantives are found for the most part to be the same. This mother tongue is the Maya, according to the learned Dominican and the Abbé Brasseur de Bourbourg, both most competent judges on such a question. Canon Ordoñez inclines to the Tzendal, but this may arise from a natural partiality, this being the native language of the canon.

The classification of the indigenous languages of America would be a great service rendered to philology, and would lead us to the study of indigenous literature, sciences, and the fine arts. We must remember that America has a literature of its own, which still remains to be investigated and studied. The Aztecs, says Clavigero, were good poets and distinguished orators. The poets, held in great esteem at Tezcuco and at Tenochtitlan, chose warlike and religious subjects; while the priests, whose minds were more cultivated than the majority of these poets, celebrated the firmament and the heavenly bodies, the feats of kings and of heroes, and the duties and attributes of man. Oratory was much taught among the people, and the young men were early accustomed to take part in discussions on the affairs of the nation. The Aztecs had even a theatre, but their dramatic literature was weak and coarse, and was degraded by foul and brutal exhibitions.

M. l'Abbé Brasseur de Bourbourg mentions, in terms of the highest commendation, a historical MS., written in the Nahuatl language in 1528, by one of the bravest and most faithful officers of the unfortunate Quahtemotzin.*

The epoch of the conquest, followed by the preachings of the missionaries, brought about a new era of revival in the national literature. Several natives taught by the priests, and following the example of Quahtemotzin's officer, began to write their ancient chronicles in the Nahuatl language. In 1736, the Chevalier Boturini Benaduci, says M. Aubin in his article† on "La peinture didactique et la langue idéographique des Aztèques," had made a very remarkable and valua-

* This MS. is now in the possession of M. Aubin.

† In the *Revue Orientale et Américaine*, vol. iii, p. 226.

ble collection of these manuscripts. Unfortunately, on his way back to Italy, he was captured at sea by the English, and plundered of everything. Thus, the fruits of all his labour and research were lost to this intrepid traveller, nor has more than the eighth part of these MSS. been found, and that but recently.

Many native and European *savants*, the Mexican historian Veytia, the American astronomer Gama, Alexandre de Humboldt, Ternaux-Compans, and others, have endeavoured to repair that immense loss. At last, M. Aubin, after long and patient researches, has succeeded in bringing together a rich and important collection; and, from the indications furnished by the Chevalier Boturini's catalogue, has been able in a great measure to reproduce the precious originals.

We may judge of the importance of this new indigenous literature by the mere names of some of these manuscripts, now in the possession of the enlightened and industrious ethnographer whom we have just named. Among these MSS. are the following:—Essays on Mexican history in the Nahuatl language, from the year 1064 to 1521, by Domingo Chimalpain.—The historical annals of the Mexican nation in Nahuatl, dated 1528, which is probably the MS. previously mentioned by M. l'Abbé Bresseur de Bourbourg.—Several original histories in Nahuatl of the kingdoms of Culhuacan, Mexico, etc., from the most remote period to 1591, by Domingo Chimalpain.—And finally, the history of the same kingdoms of Culhuacan and Mexico, by a native author using the *nom de plume* of Fernando de Alba.

There exist also numerous works in Mexican by foreign missionaries, among which we shall notice the translation of the Epistles and of the Gospels in Nahuatl by Arnaud de Bassac; *The Colloquies of Christian Peace*, by Father Juan de Gaona; *The Art of the Mexican Language*, by Jean Foucher, a Frenchman; together with the learned and numerous works of Andrès de Olmos in Mexican, Huaztec, Tolonac, and other languages.

The indigenous chronicles cited by M. Aubin are generally concise, though they exhibit traces of oral traditions and of historical songs often repeated word for word in the same work.

The Peruvians cultivated, also, poetry and the drama, which appear among them to have reached a higher degree of perfection than among the Mexicans. Comedies and tragedies were performed in the presence of the Incas and their courtiers, and were usually heroic, mystic, or warlike. Love was always predominant in Peruvian poetry, and fragments of that poetry are quoted by Father Blas Valera, in his memoirs, as well as by Garcilasso de la Vega. But Peruvian literature, less fortunate than Mexican, is still shrouded under a dark veil.



Science among the nations of America took the precedence of literature, possibly on account of its greater utility. We have already seen that astronomy especially was the constant study of the Incas, the Caciques, and the priests of Peru, of Mexico, and of Guatemala. Montezuma I and Nezahualtli were remarkably skilful and enlightened engineers, who immortalised their names by the construction of the famous dykes destined to repress the inundations of Lake Tezcuco. These princes, though bad tacticians and strategists, were by no means ignorant of the art of attacking and defending cities; in fact, traces of Mexican fortifications are still visible, which show considerable knowledge of these subjects.

Agriculture, very ancient among the Aztecs, was wanting in those almost indispensable adjuncts oxen and ploughs. Men performed every labour of the field with their own arms, and their barns were rudely constructed with trunks of trees placed over each other, and then firmly bound together. They had, however, singular skill in the construction of those floating gardens, or chinampas, which had a vegetation so luxuriant as to call forth the admiration of the conquerors themselves. Agriculture among the Peruvians was very differently organised. It is true that the use of the plough was equally unknown to them; but they dug up canals for the irrigation and fertilisation of the lands; they constructed roads and ways of communication,* bridges, and embankments; and reared numerous flocks of lamas and alpacas. They also exhibited considerable skill in the construction of their houses, distinguishing themselves especially by the erection of numerous aqueducts, preserved and used by the Spaniards for a long period after the conquest.

Arithmetic and medicine formed a part of the scientific knowledge of the Peruvian, but as to the latter, his remedies were very simple and very limited, and administered without method or discernment. Finally, the Aztecs and the Quichuas had their painters, sculptors, goldsmiths or jewellers, their architects, actors, dancers, and musicians. In all the great towns of Anahuac, vases of gold and silver were manufactured before the conquest, and Cortez, in a letter to the Emperor Charles the Fifth, praises the skill of the goldsmiths of Tenochtitlan. Among the Mexican monuments found by the conquerors, the most remarkable were the two great pyramids called "houses of the sun and of the moon," situated in the Plain of the Dead (Micoatl);† the pyramids of Papantla and of Cholula (the latter

* Among others, the high road from Cusco to Quito.

† A gentleman who visited Mexico in the year 1851, informs me of an interesting discovery made by him in connection with these pyramids. Observing midway between them a large square block of granite lying on its edge, and partly imbedded in the sand, he, with the aid of several servants, succeeded in remov

one hundred and seventy feet high); the monument of Xochicalco, known by the name of the House of Flowers; and many palaces, temples, and altars destroyed in Mexico and other chief towns.

Sculpture and hieroglyphic painting were also in great esteem among the natives of Mexico. The sculptures generally represented the images of gods and other fabulous creatures, of kings and men of note, and even of animals of the most fantastic appearance. Respecting the hieroglyphic pictures, I could not do better than refer to the excellent work of M. Aubin, published in the first series of the *Revue Américaine*.* It is at once a special and almost complete document on this subject.

Notwithstanding that Mexican architecture and sculpture seem now to be regarded with some degree of disfavour, I have heard M. l'Abbé Brasseur de Bourbourg himself say that the Anahuac contains monuments of the ante-Spanish period, remarkable both for art and for execution.

That Peruvian architecture is much finer, is proved by the vestiges of the temple of Pachacamac, of the palace of the Inca, and of the fortress of Cusco, as well as by the imposing ruins of Atun Cannor, mentioned by La Condamine. Several statues may also be mentioned, which have been preserved in spite of the deformity of the legs and arms. There are also many vases, discovered in tombs, which, in the opinion of M. d'Orbigny, exhibit a knowledge of drawing, truth, and finish, in the figures represented.

Dancing was a favourite amusement with the natives of Peru, each province having its particular and characteristic dance. It must be admitted that their music was wanting in variety, and had little to recommend it. They knew nothing of any instrument except a flute with five pipes, which was indifferently used for songs of love, mourning, or triumph. Songs of triumph were generally confined to their solemn and periodical festivals. On these occasions choirs of men and women added their voices to the flute, and celebrated the high deeds of arms of their relatives or fellow-citizens. It may be added, that dancing and music were equally known to the other nations of Southern America.

Such are the principal studies and researches you will have to

ing a sufficient quantity of the soil to admit of its being turned over to a slight extent. After some scraping, my friend found a distinct image of the sun cut on what appeared to have been originally the top of the block. There is no doubt that this piece of granite, weighing some tons, formed at one period the apex of the pyramid or "house" of the sun. (W. H. G.)

* Vide *Revue Orientale et Américaine*, vol. iii, p. 224; vol. iv, pp. 33 and 270; vol. v, p. 361. The continuation of this important work will be published in the new series.

make in connection with America anterior to its discovery. There are others which, although posterior to it, are not less interesting and important.

The history of the conquest is extensive and satisfactory; but that of the two centuries which followed it is quite unknown. Under the Spanish, Portuguese, and French domination, there is an immense blank, which it is important to fill up as soon as possible. The history of the moral, physical, and intellectual state of the vanquished under the yoke of these conquerors, still remains to be composed and written. The great question of slavery, which occupies, and must continue to occupy, the minds of men, will doubtless find important elucidation in the filling up of that huge gap just indicated. It is of vital importance to follow the native peoples in their continual and consecutive relations with those nations which have subdued them.

There still remain many capital questions to be treated of in detail. We will call particular attention to the original and striking manners of ancient and of contemporary America.

Forward, then, courageous explorers; forward, bold missionaries of the Rocky Mountains; forward, travellers, daring pioneers and colonisers of the prairies of North America; forward, thinkers and philosophers, *savants*, writers, artists, and poets;—onward all of you to delve in that immense mine, which must be worked up into its innermost recesses, into its most imperceptible furrows, into its most impenetrable crevices!

Christopher Columbus and his worthy imitators discovered the material and physical America—the America of flesh and bone, of earth and marble. It remains for us to discover another America—a moral and intellectual America; America of soul and of heart, of mind and of genius.

ANTHROPOTOMY.*

It has been our duty to watch this work through the three successive editions which have been published of an undertaking which has been justly characterised by Professor Owen† as “a deservedly esteemed

* *Anatomy; Descriptive and Surgical.* By Henry Gray, F.R.S., F.R.C.S., Lecturer on Anatomy at St. George's Hospital Medical School. The drawings by H. V. Carter, M.D. The dissections jointly by the Author and by Dr. Carter. Third Edition. By T. Holmes, M.D.Cantab., Assistant-Surgeon and Lecturer on Anatomy at St. George's Hospital. 8vo. London: Longmans. 1864. Pp. 788.

† On the Cerebral Characters of Man and the Ape, *Annals and Magazine of Natural History*, 1861, vol. vii.

compendium of descriptive anthropotomy". Its celebrity as the most convenient general text-book, suitable for constant use, has been long an accepted fact; and we shall not in this place dilate on the advantages which a modern anatomical tyro possesses by the study of so handy a manual. But the relations which teaching on this, as on other anatomical topics, bear to modern anthropology, demand a few words on our part; criticising the state of the science in England, ornamented by such names as Humphry, Holden, Ellis, and Holmes Coote, each of whom, as well as many others, have contributed to the advancement of integral branches of English anthropology. The editor of the present work states that his excuse for not inserting a chapter on the rudiments of scientific, as distinguished from descriptive anatomy, must be owing to the fact that the examining bodies do not exact a knowledge of this branch of science as a necessary part of medical education. We scarcely coincide with him in this being a justifiable defence, but are so pleased to have the third edition of this elegant text-book placed before us in a convenient form, that we are not inclined to criticise too severely that which we must, however, consider an important omission. Every anthropologist, whose duty it must be to compare the structure of the different races of men with the characters of the ordinary European anatomical subject, should possess this work: even the professed human anatomist will find it easy of reference, when the consultation of the many other higher and more profound works on the subject would be impracticable or inconvenient. The two first editions have, however, been so popular, that it becomes an easy task to call the attention of our readers to a few of the excellencies of the third. We shall merely indicate a few of the bearings of the present work on modern anthropological discussion. Without entering into the details of a controversy which has elsewhere been carried on respecting the true "typical" or "normal" number of cusps in the lower molars of various races of mankind, we fear that the present work will scarcely be satisfactory to either party in the controversy. The statement (p. 619) that the crown, in the *dens sapientiæ* is "furnished with three tubercles", is one which, although in one sense justifiable, yet if placed *simpliciter* before an unwary student, may lead to considerable misapprehension.

Contrasting such a plate as that which appears on p. 69 of this work with those ordinarily promulgated in anatomical text-books, and giving due credit to the beauty of the engraving and accuracy of detail which are here manifest, we must suggest that a vertical bisection of the skull should be drawn in any future edition of the work, on the same plan as those of the Papuan, gorilla, and oran-útan, which

illustrate Owen's paper in the *Zoological Transactions*. The English anatomical student is scarcely yet as familiar with the mode of investigation by vertical bisection and internal measurement as the Dutch students were fifty-four years ago, in the days of Crull. The use of such works as Gray's *Anatomy* will in time, however, produce the desired effect.

Several omissions may be signalised, in some of which "Gray" does not reflect the tone of modern anthropotomical study so much as "Holden". Thus, on p. 137, the reader who carefully peruses the otherwise excellent account of the *fibula*, is not duly made aware of the signification of the "styloid process". It is all very well to tell us that "it gives attachment to the short external lateral ligament". Such a definition would have been satisfactory in the days of *South on the Bones*, or of some other far less useful compendium; but the student in 1864 imperatively demands other and more complete information. The fact of the serial homology of this process with the "olecranon" of the *ulna*, and of the important part which it plays in such animals as the *Phascolumys*, in which it is developed as a separate osseous element, are at least worth teaching to the modern anthropotomist, if we wish to avoid the miserable repetitions of unintelligible mediæval Latin terms which distinguished the majority of the old osteological writers. Every student of man, who considers any part of his physical structure, will put the following question: What relation does this part bear to the homologous part, if there is one, in the lower mammals? and ultimately the anatomical treatises which neglect to afford the desiderated information will be relegated to the top shelves, beside Vesalius and the alchymists.

The 64th page of this edition gives us a most interesting and correct diagram, which originally appeared in the second edition, of the forms of the lower jaw in the young, at puberty, in the adult, and in the aged individual. In this series the method by which the angle of the mandible is developed is exhibited, showing the open angle of the adolescent and of the aged subject to be alike obtuse, forming a striking contrast with the acute right angle at which the ascending joins the horizontal ramus in the adult. Comparison of such drawings as these with a large series of lower jaws, will lead the observer to some remarkable conclusions, the most striking of which is, the *general* resemblance which prevails between the lower jaws of many Negroes and Australians, and the homologous part in young Europeans. Before, however, this can be laid down as a generalisation, an enormous series of specimens must be diligently collected together, and the many striking exceptions to the rule pointed out; and we believe that some interesting researches on the subject will be laid before the Anthropological Society during the next session.

In the Halford *versus* Thomson controversy at Melbourne, Gray's *Anatomy* has been triumphantly cited by the victor in the strife, as giving a most lucid and intelligible account of the lower insertion of the *tibialis anticus*. It is surprising that any doubt could have existed as to these facts. Turning, however, to the subject of the dispute which arose in the Zoological Section of the British Association,* it is noticeable to remark that the words used by Dr. Gray with respect to the origin, course, and insertion of the *flexor longus pollicis*, are such as convey no idea of farther divarication of its distal portion than as follows :

"This tendon passes through a groove on the posterior surface of the tibia, external to that of the *tibialis posticus* and *flexor longus digitorum*; it then passes through another groove on the posterior extremity of the astragalus, and along a third groove, beneath the tubercle of the *os calcis*, into the sole of the foot, where it runs forwards between the two heads of the *flexor brevis pollicis*, and is inserted into the base of the last phalanx of the great toe. The grooves in the astragalus and *os calcis* which contain the tendon of the muscle, are converted by tendinous fibres into distinct canals, lined by synovial membrane; and as the tendon crosses the sole of the foot, it is connected to the common flexor by a tendinous slip." (P. 314.)

This statement may be contrasted with that in the *Edinburgh Review* (April 1863).

"In addition to this structure, the grasping power of the foot of the gorilla and orang is strengthened in a very peculiar manner. Every anatomist knows that the muscle termed *flexor longus pollicis pedis* originates from the lower portion of the outer bone of the leg or *fibula*, and that its solitary tendon passes along the sole of the foot, and is eventually inserted into the base of the last joint of the great toe. The whole force of the muscle is here concentrated; and the dancer who pirouettes on tiptoe exhibits a striking example of the power and force of this muscle in man. When we turn, however, to the foot of the orang, a totally different structure presents itself. The homologous muscle there is terminated in three tendons, each of which is inserted in one of the three middle toes, forming a beautiful grasping organ, wherewith the orang ascends the highest trees in Borneo. . . .

"When we turn to the gorilla, the homologous muscle divides into three slips, the first and smallest is attached to the third joint of the great toe, the second slip is attached to the third joint of the third toe, and the third slip is attached to the third joint of the fourth toe. It will be obviously seen that the second and third slips in the gorilla have no direct representative in man. They are essentially climbing, and not standing, muscles." (P. 551.)

The above popular exposition has been criticised as if it necessarily contradicted the facts, made known to us by Church and Turner, re-

* Anthropological Review, vol. i, p. 457.

specting the frequent diversion of branches of the tendon of the long flexor to the second and third toes. Critics will do well to refer to the elegant and lucid description of Gray, which comprises the sum of the known facts before us.

The woodcuts in this work are especially beautiful; and we would select for approval those which relate to the nervous centres, which are far superior to the illustrations of the same sort in any English work familiar to us; although a comprehensive series of diagrams, after the plan of the excellent ones devised by Mr. W. H. Flower, might advantageously have been introduced.

Perhaps, however, in spite of the drawback to which we have above alluded, the best part of the work is that relating to osteology; and, while turning over the pages, we were forcibly reminded of a very curious consideration dependent on the state of anatomical teaching in England. It may not be generally known that a very large proportion of the specimens on which anatomical students "study the bones", and which they fondly imagine to be those of their compatriots in Europe, or which perhaps may be labelled in some anatomical museums as "English", are really the relics of departed Africans. These specimens are now imported duty free, as "objects of natural history", through France, in large quantities. We are unable to trace their history further; and we prefer not to offer any conjecture as to the origin of a practice which ultimately may seriously bewilder the minds of those students who, anxious to draw monogenistic conclusions, are unable to see any real specific difference between the skeletons on their own tables, and those unmistakable and recognised Negroes who are to be found in the public museums.

The last number of the Proceedings of the Royal Society contains the abstract of a highly important paper by John Wood, Esq., F.R.C.S., Demonstrator of Anatomy in King's College, London, in which the results of fifteen years' observations on more than six hundred subjects are embodied.

"The author classifies these muscular variations as follows, viz. :—

"*Variations with redundancy.* 1st. Those which have an origin in a development totally independent of any other muscles or tendons.

"2nd. Those which consist of extensions or offsets from normal muscles or tendons, and of muscular fibres replacing tendons, and tendinous fibres intersecting muscles.

"3rd. Those which are formed by simple areolar separation or segregation of muscles.

"These are given in the order of their rarity, and of their comparative value in reference to the muscular anatomy of the lower animals.

"*Variations with deficiency.* 1st. Those produced by total suppression of the germs of muscles.

"2nd. Those resulting from amalgamation with neighbouring muscles.

"3rd. Those from atrophy or degeneration subsequent to their formation.

"All the illustrations belong to the former class, which supply the most fitting subjects for them.

"The frequency of varieties of all kinds in the human subject is very great. Few subjects are to be found entirely free from them. Muscular variations are rather more common in the male sex. In them, also, variations with redundancy calculated to increase muscular power, such as are classed in the second division of that section, are more common, but may be also associated in the same individual with anomalies from defect or diminution. The same individual is frequently found subject to more than one irregularity, a muscular irregularity of a marked kind being generally associated with several others. Probably the source is hereditary, as is undoubtedly the case with those which result in deformity. Muscular variations are more common in the arm, back, leg, and head, and least common, as a rule, in the abdomen, the groin excepted. They are generally more or less symmetrical, though often much more evident on one side than the other. Distinct developments are usually found on both sides. Variations by redundancy more frequent or more developed on the right side; those from deficiency on the left.

"*Variations by simple reduplication.* The following muscles have been observed double, or in two distinct layers:—Pectoralis major and minor; gluteus maximus; soleus; pyramidalis abdominis; pyriformis; subclavius.

"*Variations by deficiency.* The following have been seen *totally* deficient:—Psoas parvus; palmaris longus; superior and inferior gemellus; extensor minimi digiti; pyramidalis abdominis; pyriformis; peronæus tertius; extensor primi internodii pollicis; trapezius; plantaris and palmaris brevis (rarely).

"The following have been seen *partly* deficient:—Trapezius; omohyoid; sterno-hyoid; serratus magnus; internal oblique and transversalis abdominis; soleus."

Some of the other observed varieties are very singular. More than thirty-two examples are given, but we must only select a few, referring to the abstract of Mr. Wood's excellent paper (Proc. Royal Society, No. 65, p. 299) for further particulars.

"*Levator claviculæ.*—Clavio- or acromio-trachelian, observed in two subjects, on both sides, arising with the *levator anguli scapulae* from the third and fourth cervical transverse processes, and inserted into the *outer third of the clavicle* under the trapezius. Found in all the ape tribe."

"Broad slips from *pectoralis major* and *latissimus dorsi*, passing across axillary vessels and nerves, and attached, low down the arm, to the aponeurosis inserted into the inner condyle of humerus and olecranon process. These slips are highly developed in some of the anthropoid apes; the former especially in the gibbon. The same

subject, a muscular male, shewed also a high and large origin of the *pronator radii teres* in common with the *brachialis anticus*."

"*Palmaris longus*, with inverted belly and double origin, the additional one (tendinous) from the oblique line of the radius above the *flexor sublimis*. Given off from it also is the *flexor brevis minimi digiti*. A precisely similar arrangement of this very uncertain muscle not before recorded. A somewhat similar arrangement found in the *Cebus* and *Magot*."

"Striking abnormality seen in two male subjects on both sides. A long tendon, with bulky, muscular belly above, arising from the outer condyloid ridge of humerus with the *extensor carpi radialis longior*, and inserted in one case into the base of the first metacarpal bone and origin of the *abductor pollicis*, and in the other passing entirely into the latter muscle. Not before recorded.

"*Extensor primi internodii pollicis et indicis*.—Arising by a distinct belly above the indicator, going along with that muscle, and giving off two tendons, one to be implanted outside the indicator tendon, and the other to supply the place of the *extensor primi internodii pollicis*. Not before recorded in the human subject. Found in the dog."

"In a hand from the subject before given in 9 and 17, all the dorsal interossei were arranged in two portions easily separable. In the first interosseous space the *abductor indicis* was very distinctly divided into a posterior part, arising in the usual manner, and inserted into the base of the first phalanx; and an anterior, arising from the first metacarpal, and inserted partly (by a small slip) into the second metacarpal, but chiefly (by a very distinct tendon) into the dorsal expansion of the common extensor tendon of the index. Not before recorded in the human subject. A similar arrangement found in the gorilla and other simiæ."

"Separation of the anterior fibres of the *gluteus minimus* into a distinct muscle homologous with the *scansorius* of Traill, or *invertor femoris* of Owen, found in the orang and others of the ape tribe."

"*Peroneus quinti digiti*.—In most instances a tendinous, but in one a fleshy offset from the *peroneus brevis*, below the outer ankle-bone to the expansion of the common extensor tendon of the little toe. Very frequent in the human subject, usual in the apes."

"*Tibialis anticus* tendon divided into three parts, going respectively to the inner cuneiform, base of metatarsal, and first phalangeal bone of the great toe. The last-mentioned offset not before recorded. Similar arrangement in the quadrumana."

"*Abductor ossis metatarsi quinti*.—A distinct muscle found by the author in more than one-half of the subjects in which he has looked for it, concealed by the outer part of the plantar fascia and *abductor minimi digiti* muscle, arising from the outer tubercle of the os calcis by a round fleshy belly, and inserted into the base of the fifth metatarsal by a distinct round tendon. Not before observed in the human subject. Found in the gorilla and chimpanzee by Huxley and Flower.

"*Opponens minimi digiti*.—Very commonly found, though not de-

scribed in anatomical text-books. Arises tendinous from the ligament of the fifth metatarsal and cuboid, and inserted in a bipennate way into the whole length of the fifth metatarsal bone. Found well developed in all the apes."

The consideration of these and many other interesting abnormalities should be postponed until Mr. Wood's paper shall appear at length in the Transactions of the Royal Society.

A CHRONICLE OF ENGLAND.*

ONE of the most beautiful, as well as the most elegant histories of England is before us, illustrated in a manner reflecting the highest credit on the artist, the chromo-lithographer, and the printer, and equalling the magnificent works of La Croix and Seré, Pugin, or the costly productions of the foreign historiographers, whilst it replaces entirely the Strutt of our fathers, or the costume books of the present day. The style of dress adopted by nations is so legitimately comprised within ethnographical study, and is even so intimately connected with local peculiarities, that the work of Mr. Doyle is undoubtedly within the limits of our criticism. In the British isles, for example, without referring to such broad race distinctions as prevail between the Celtic and Teutonic groups of costume, there exist such local forms of dress as the hat of the Welsh peasant woman, the loose silk kerchief of the factory girl, the flat bonnet and short jacket which the Cheviot peasant defiantly wears to distinguish himself from the Scotsman on the other side of the hill, the smock-frock of the majority of agricultural labourers, the diminutive and abbreviated representative of it which is confined to a small district in south-eastern Sussex, the Guernsey jacket, the "wide-awake" hat (truly the successor of the *petasos* of Mercury), or many other articles of clothing which might be suggested.

All these form essential characters of the costume of England, as represented by its poorer classes, at the present day, and from this point of view may be advantageously contrasted with the dresses of the past population, as depicted in the beautiful chromo-lithographs before us. The whole subject is so intimately connected with art, commerce, and even with political partizanship, that it is difficult to consider it from a purely ethnographical basis.

For a most lucid idea of the costume of some of the aboriginal

* A Chronicle of England, B.C. 55—A.D. 1485; written and illustrated by Jas. E. Doyle. London: Longmans. 4to. 1864.

nations of Europe, we must refer to this work. We are so accustomed to form our conceptions of the "garb of old Gael" from mere outline sketches, destitute of the advantages of colour, that such a plate, for instance, which represents Caractacus in Rome attired in the scarlet and pink *braccæ* or "trews" gives us a most lucid idea of the dress of this mythical representative of the Siluri. The change which has taken place in the colour of the costume of males in Europe during the last few hundred years is difficult to be accounted for on artistic grounds, though susceptible of easy explanation from the utilitarian point of view. The vivid colours which bedecked the courtier or the cavalier, the superabundance of ornament and decoration which characterised the fashions of the Tudor or the Caroline kings, have long since passed away, and the prevailing sombre tint of man's clothing in the nineteenth century, whilst it is far more convenient and economical, is far less picturesque.

The perusal of this work by anthropologists will originate many suggestive ideas as to the dress of the historical characters of England, and we doubt not that the second volume, which will treat of a subsequent period of English history, will be equally interesting.

ANTHROPOLOGICAL NOTES EXTRACTED FROM THE NEW YORK STATE DOCUMENTS.

By GEORGE E. ROBERTS, F.G.S., Hon. Sec. A.S.L.

It may easily be supposed that the persons officially connected with the state of New York during the earliest years of its colonisation did not pass over in complete silence the natural characteristics of the aboriginal people with whom they had dealings. And although the scientific leanings of these governors and their staffs of officials were certainly not specially directed in the interests of anthropological science, yet I have been rewarded somewhat for my trouble in wading through 7,000 quarto pages of "Public Records" by the discovery of more than one note having a significant bearing upon the races of Indians which, at the commencement of the white invasion, were lords of the North American continent. The notes I have met with I propose to give as simple extracts, adding a line or two of explanation where needed, feeling sure that to enshrine them in the *Anthropological Review* will be of interest to its readers, and possibly of use to the science.

I may first remark that these archives chiefly consist of the reports of the Dutch, English, and French governors of the various provinces to their respective governments; these have been collected, grouped, and published in ten (?) quarto volumes, under an act of the American legislature passed in 1839. I have only been able to examine eight of these volumes; but as the one (or two) to which I am unable to refer contains documents subsequent to 1770, I do not think that notes of anthropological value would be met with in them.

During the earlier years of the Dutch occupation of the state, from the first settlement on Manhattan Island in 1626 to about the year 1650, the study of the character of the red man was undertaken mainly to assist the padroons (colonists) in "taking and possessing" the land, and swindling the aboriginal man of all his rights thereto; the Incorporated West India Company agreeing to allot to each padroon "twelve black men and women out of the prizes in which negroes shall be found, for the advancement of the colonies of New Netherland." (MS. undated, File *West India*, 1630-35, Archives at the Hague.) Very naturally the Indians objected to being cheated, and a series of cruel conflicts took place, in one of which an act of barbarity was perpetrated by the colonists which even exceeds the tragedy of the caves of Deira. I note it, as it exemplifies the wonderful stoicism and contempt of pain possessed by the red man. A body of Indians, five hundred in number according to one account, seven hundred according to another, being hard pressed by the Dutch soldiers, retreated to their huts, and these being set on fire with a view of dislodging them, preferred to remain therein and be burnt rather than come out and be killed by their enemies. "What was most wonderful," says the States Document, describing this barbarous act, "is, that among this vast collection of men, women, and children, not one was heard to cry or to scream." No wonder that it passed for a common saying among the tribes, "even our devils will have nothing to do with the Dutch!"

The earliest description of the natives which I find occurs in a MS. preserved in the Royal Library at the Hague, written about 1641. "The Indians are of ordinary stature, strong, and broad-shouldered, olive colour, light and nimble of foot, subtle in disposition, of few words, which they previously well consider, hypocritical, treacherous, vindictive, brave, and pertinacious in self-defence, in time of need resolute to die. They have hardly any notion of God, no divine worship, no law, no justice; the strongest does what he pleases, and the young men are masters." I need scarcely remark that some parts of the above description have been proved incorrect by more friendly relationships; their ideas of justice we may admit as considerable,

without regarding the red man as that epitome of human virtue which Mr. Fenimore Cooper once would have us believe.

The States General of the United Provinces, in an Act dated 1661, make mention of the red man in a way which characteristically combines the acute trader with the propagandist—"great profit to be derived from traffique with the natives," reads this document, "who are naturally a mild people, very capable (and by the grace of God) to be drawne out of their blind ignorance to the saving light by Jesus Christ." But the governors of the British provinces held during the seventeenth century lived in far too brittle tenements to justify them in casting stones at the rule of their neighbours the Dutch or the French. Wars with the Indians were the rule rather than the exception during the history of their governance, and various were the reports and conjectures as to the causes of them. A very curious and lengthy report, by Edward Randolph, to the Council of Trade (A.D. 1676) gives some few of the opinions held. "Some impute it (the war) to an imprudent zeal in the magistrates of Boston to christianise those heathens before they were civilised;" and then the report proceeds to mention the puritanical decision of the government of Massachusetts, that the "barbarous heathen had commission of God to rise against them," by reason of the "great and provoking evils" of "men wearing long hair, and periwigs made of woman's hair; for women wearing borders of hair, and for cutting and laying out their hair, and disguising themselves by following strange fashions in their apparel; for profaneness in the people not frequenting the meetings, and others going away before the blessing is pronounced." (For this report, *in extenso*, see Hutchinson's Coll. Orig. Papers, Boston, 1769, p. 477.)

A curious journal is that of Mr. Wentworth Greenhalgh, who "made observations upon the Indians of western New York during a journey begun May 23th, 1677, and ended July 14th following," visiting the natives in their "stockaded towns," and taking divers notes of what he saw. What corn they have, and how many fighting men, appear to have been pet subjects with our old traveller, though he now and then notes social customs, *e. g.*—"Canagorah: here y^e Indians (Senecques, Seneca tribe) were very desirous to see us ride our horses, w^{ch} we did; they made feasts and dancing, and invited us y^t when all y^e maides were together both wee and our Indyans might choose such as lyked us to ly with." At another village of the Seneca Indians, Tiotehatton, an important one, by reason of the number and size of the "houses" (lodges), Mr. Greenhalgh saw fifty prisoners brought in from the south-west, the result of an engagement with a neighbouring tribe, and "this day," he writes, "were

burnt of them two women and a man, and a child killed with a stone; all night we heard a great noyse, as if y^e houses had all fallen, butt itt was only y^e inhabitants driving away y^e ghosts of y^e murdered." And next day, going to Canagoroh (another Seneca camp), "wee overtook other prisoners, and when y^e soldiers saw us they stopped each his prisoner and made him sing, and cutt off their fingers, and slasht their bodys wth a knife, and when they had sung each man confessed how many men in his tyme hee had killed; that day at Canagorah there were most cruelly burned four men, four women, and one boy, the cruelty lasting about seven hours, and afterwards taking the hearts of such as were dead to feast upon."

(To be continued.)

ORGANIC PHILOSOPHY.*

A VERY diligent perusal of the above work has failed to imbue our mind so thoroughly with its precise object as to enable us to review it critically. The scheme of the volume is so vast, and so little defined in its objects and principles; and the methods of thought which the author follows are so little laid down, that it will be very difficult to criticise him from the standpoint of inductive science. Nor can we see the bearing on "man's true place in nature" of many of the "epicosmological" subjects on which Dr. Doherty treats. Discussions on the "geospheric" realm, on "geodynamic factors", on "cryptogamic unity", or the "isomeric forms of common minerals", no doubt have their value in a treatise on "Organic Philosophy"; we scarcely, however, regret that the objects of our review preclude the consideration of these topics with Dr. Doherty.

Although our author protests against the materialism of Comte, and against most theological systems, excepting his own peculiar faith, which occasionally verges on the incomprehensible, the application of the transcendental method he adopts to modern zoology and anthropology leads to some very curious results. We can scarcely, however, use the term "transcendental" to adequately designate Dr. Doherty's conclusions; his "*vernunft*" is wholly distinct from that of Schelling or of Oken.

Let us follow him throughout the mammalian series, in the hopes of being guided by the light of "epicosmology" to man's true place

* Organic Philosophy; or Man's true Place in Nature. Vol. i: Epicosmology. By Hugh Doherty, M.D. London: Trübner and Co., Paternoster Row.

in nature. We are met with a remarkable classification, which we must abridge from the 166th and 167th pages of his work:—

- | | | | | | | | |
|-----|----------------------------|--|---|---|------------------------|--------------------------|--------------------|
| } | VII. | Simial order (comprising bats and monkeys!) | | | | | |
| | .7. | Lemural order. | | | | | |
| | VI. | Canine order. | | | | | |
| | .6. | Feline order. | | | | | |
| | V. | Ursine order. | | | | | |
| } | .5. | Marsupial order. | | | | | |
| | IV. | Anthropine order | <table border="0" style="font-size: 2em;"> <tr> <td rowspan="4" style="vertical-align: middle;">}</td> <td>Mediumistic (!) races.</td> </tr> <tr> <td>Temperate climate races.</td> </tr> <tr> <td>Subtropical races.</td> </tr> <tr> <td>Tropical races.</td> </tr> </table> | } | Mediumistic (!) races. | Temperate climate races. | Subtropical races. |
| } | Mediumistic (!) races. | | | | | | |
| | Temperate climate races. | | | | | | |
| | Subtropical races. | | | | | | |
| | Tropical races. | | | | | | |
| } | III. | Equine order. | | | | | |
| | .2. | Hornless order of Ruminants | } In which the musk and cheveotain are placed in distinct families! | | | | |
| II. | Horned order of Ruminants. | | | | | | |
| } | .1. | Rodent order. | | | | | |
| | I. | Pachydermal order (including cetacea and sirenia!) | | | | | |

Dr. Doherty, after penning the above, kindly remarks, "Professional naturalists may possibly not admit our views of method and arrangement. We do not admit theirs." We are glad to perceive that Dr. Doherty has no intention to employ the weapons of persecution against the ill-fated "professional naturalists"—poor working men who are content to labour in the search of facts, and to leave "epicosmology" to be expounded by the "reasoner". But we venture, as anthropologists, to offer one feeble petition to our author not to classify mankind between the kangaroo and the horse. The relations of man to the ape may be denied successfully by Dr. Doherty; but we fear that his too close proximity to the opossum and the Shetland pony would be equally as offensive to man's moral nature. Still less are the European races to be conciliated by the pretty epithet "mediumistic" applied to them; although we can assure our readers that it bears no reference whatever to M. de Quatrefages' papers *Sur l'influence des Milieux*, nor to any previous literature we have read.

Turning to Dr. Doherty's anatomy, we are gravely told that "the mouth, pharynx, and œsophagus inosculate with the stomach; the duodenum links the stomach with the small intestines; the anus and the rectum inosculate with the large bowel; and the chief digestive gland ducts inosculate with the mouth and the duodenum." The marvellous *agapemone* which man's viscera seems thus to be is slightly past our precise comprehension. No bowels of mercy are however shewn by him to the unfortunate "taxionomist" (*sic*), because he states, "Nor does it matter, as a point of natural distinction in each case, whether analogies or correspondency of any kind be evident or not."

It is undoubtedly evident by the above that the author is governed by other principles than those which actuate the majority of anthropologists. We extract our author's definition of his anthropine alliance.

"This contains but one order, that of man; and this order contains but one family. There are several varieties of the animal or physical man, and that is all we have to consider in arranging the different alliances of the mammalian class. Man as an animal is one thing, man as a human being is another. There are but few races of the bimanal series that have yet been somewhat developed as rational and social beings. As a vertebrate animal, man is distinguished by a very slight diversity of form compared with that of the anthropoid ape, the dog, the bear, or the pig; but as a moral being he is quite distinct, whenever he attains to the dignity of that estate. It is not, however, as a human being we have now to deal with the bimanal type, but as an order of peculiar structure in the mammalian class. We have had elsewhere to deal with man as the head of the creation.

"In organic parallels of structure man claims the highest place in the development of brain and nerves. The natural divisions of the nervous system, therefore, should be those of the human races in a purely physical point of view. The nervous system may be variously subdivided, according to the regional distribution or the functional uses of the different parts. In form and function nerves resemble telegraphic wires, communicating some kind of radiatory influence from the body to the mind, and from the mind to every part of the body; and hence they have been classed as sensor and motor nerves. This gives us only two distinctions.

"Conductor nerves, sensor and motor, are composed of a soft, white substance terminating in the cerebrospinal centres, and in the peripheral or ganglionic extremities, amidst a gelatinous vesicular grey substance which seems to be the articular or connecting medium between the physical substance of the body and the supersensuous forces of the soul. The distinction of nervous matter, then, into white and grey substances, gives us another twofold distinction. It seems to be as difficult to find complexity of form and structure in the nervous system as in the races of mankind. In either case the whole system or alliance would appear to consist of one order only or one series; and yet the nerves communicate with every part of the body, influencing it in a peculiar manner, according to the difference of function in each tissue and organ. The races of mankind are also very much diversified in minor points of form and feature, though very faintly marked in varieties of organic structure. Differences of colour and complexion are numerous but insignificant, and other diversities of race are hardly more important."

The new feature of Dr. Doherty's work may, however, be chiefly indicated as the introduction of the novel, elegant, and classical epithet "realmological" as applied to classification; and the copious use of such terms as "altero-pluvial," and similar words. Our author's classical knowledge is thus indicated.

"It would be difficult, however, to form perfectly appropriate names for any one family or series, exceptions being numerous in every group of common forms and features; and even where anomalous forms are fewer in proportion, the names would be a difficulty. Greek or Latin words alone, simple or compound, would be unfamiliar [to whom?]. Greek and Latin hybrid compounds would be more or less objectionable."

Apparently, however, he has no objection to the frequent employment of hybrid compounds which are neither Greek nor Latin, but also include a judicious mixture of the "vulgar tongue."

If man may plead with Dr. Doherty against his intercalation between horse and kangaroo, the poor pigs have still less reason to be pleased. We are gravely told, *ex cathedra*, "elephants are quite distinct from tapirs, and these again from trunkless swine, such as the pig, the hippopotamus, and the rhinoceros." Having failed to appreciate the sense in which the rhinoceros can be said to be a "trunkless swine," we cannot here participate in the indulgence which, on his 145th page, he accords to scientific men. He deems the quadripartite arrangement of lemuridæ "legitimate and natural; and here, again, we agree with men of eminence in this particular branch of science." A desire not to participate in the marvellous and unaccustomed sensations of those "men of eminence" who may accord in Dr. Doherty's opinions induces us to congratulate him most cordially on the new and appropriate version of the nursery rhyme he has not thought it beneath him to pen on his 100th page:—

"Industrial work I love to shirk,
 "Art-work is just as bad,
 "The moral law doth puzzle me,
 "And science drives me mad."

It is very lamentable to see the paths of natural scientific study thus departed from. It is grievous to be amongst the pioneers of a science which as yet is visited with the crop of self-called "reasoners," each proceeding along his own method of deductive argument, and the labours of each resulting in a blurred mind-picture of the true objects of science. The true scientific success of a nation will never be advanced by such misuse of those faculties for which man is responsible; and, even indirectly, will never be assisted by the puny endeavours of the transcendentalist.

C. C. B.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY
OF PARIS.*

IN the concluding number of the fourth volume of the Paris society's *Transactions*, we have an extremely interesting analysis, by Dr. D. Lubach of Haarlem, of his work upon the inhabitants of the Netherlands, or at least upon that part of it which relates to their anthropology. Dr. Lubach considers that, before the arrival of the Germanic races, the primitive inhabitants of the Netherlands belonged to the race by which Germany itself was originally peopled. He says that the primitive stone monuments known here under the name of *Hünbedden* are precisely similar to the *Hünebetten* and *Riesengräber* of the north-west of Germany, and to the *Jettegrafvar* and *Steenhamner* of Scandinavia; and that the arms and other stone objects found in all these are similar. But whereas, with these objects, in Germany have been found skulls belonging to this primitive population, and entirely differing in form from the German type, in the Netherlands it appears that the objects of art alone have been preserved; whilst, unfortunately for anthropological science, any human remains that may have been discovered have been cast aside as worthless, and irrecoverably lost.

Notwithstanding this want of data, Dr. Lubach affirms that the aboriginal inhabitants of the Netherlands are brachycephalic, short or of middle height, and probably with black hair and eyes, resembling more or less the primitive people of Scandinavia, and forming an intermediate race between these and the Gauls. To this original race succeeded immediately the Germanic races. In the time of the Romans, a chain of Germanic peoples extended along the shores of the North Sea. Of all these peoples, except the Menapii of Zealand and Flanders, the Frisons were the only ones who dwelt in the Netherlands. If we consider the Menapii as belonging to the same group as the Frisons, then the chain of Cimbro-Menapian tribes was interrupted, between the Rhine and the Saal, by two Germanic peoples, which had come, during the historic period, from the heart of Germany. These were the *Batavii* and *Caninefates*, tribes which had originated in Hesse. Then the *Chamavii*, the *Salii*, the *Tubantes*, the *Toxandri* went to complete the population at the time of the Roman domination. The Franks and *Salii* made their appearance probably about the middle of the fourth century, and the Saxon towards the end. In the time of the emperor Julian, the Batavians,

* *Bulletins de la Société d'Anthropologie de Paris*, vol. iv, 4eme Fascicule, Sept. to Dec., 1863; vol. v, 1er Fascicule, Jan. to March, 1864.

whose name only remains as the name of their island, formed a portion of the Frank confederacy. From Batavia and the north of Belgium the Salian Franks gradually extended their dominion towards the south. At last, their king, Hlodwig (Clovis), having become chief of all the Frank tribes, conquered a great part of the Gauls, and established the Merovingian dynasty.

The Frisons took a considerable part in the invasion of Great Britain by the Saxons towards the end of the fifth century. Several English ethnologists believe that the county of Kent was principally peopled by the Frisons. During the struggle between the Frank and Saxon kings, which commenced in the sixth century and lasted more than three hundred years, the Frisons formed a portion of the Saxon league. After their conversion, by the English missionaries, to Christianity, however, being subjected to persecution by their pagan kings or chiefs, they became dissatisfied with their government; and in 775 they agreed to be incorporated in the Frank empire. The important ethnological division of the Netherlands into Frisons, Saxons, and Franks dates from this time. After tracing at considerable length the various modifications, re-divisions, and changes of locality of these peoples, and describing their peculiar characteristics, Dr. Luebach proceeds to describe the characters of the skulls of the different races. The Frison skull presents, according to his description, a strongly-marked dolichocephalic form, a high forehead, the occiput very prominent by the development of the tuber occipitalis externus, as is also seen in the majority of Scandinavian skulls; vertex cranii depressed and slightly arched; facial angle rather large; nasal bones ordinarily large and prominent; lower jaw generally high; chin much produced, but rather retrocedent. The characters of the undoubtedly non-Frisic skulls which he had seen are the following: antero-posterior diameter shorter; transverse diameter, or the contrary, longer than in the Frisons; zygomatic arch larger and more arcuated;inion slightly or not at all prominent; the curved line between the root of the nasal bones and the foramen magnum, which he terms the cranial arch, more highly vaulted than in the Frisian skulls. All the head has a more globular, and often a more squared, form. The facial angle of these skulls does not differ from those of the Frisians; but the face is shorter and broader, which is partly at least due to the less height of the lower jaw and the greater prominence of the zygomatic bones.

The next paper, upon the Mincopies, or inhabitants of the Andaman Islands, by M. Broca, is to a certain extent a *résumé* of Professor Owen's paper, read before the British Association in 1861, and with which our readers are doubtless already familiar. M. Broca adds, however, some most valuable critical observations.

It appears that the Société d'Anthropologie de Paris resolved, some time ago, to publish a coloured plate shewing the principal types of colour of the human hair, skin, and eyes, arranged in a systematic gradation of shades and accompanied by numbers referring to and explaining the different tints. Upon the completion of the third portion of this work, viz., that shewing the different tints of the eye, M. Broca read a very interesting paper, shewing how the information he has supplied has been arrived at.

The first difficulty which M. Broca had to contend with, was the rendering, by a single tint, the variety of shades to be found in different portions of the iris. The shade required was the *medium* shade, or mean quantity of colouring matter to be found distributed in the various shades of the iris. This was only to be obtained by placing the eye at such a distance that all the partial tints became confounded or united in a single colour. The delicacy required in this operation may be readily imagined. The most embarrassing point, says M. Broca, was the choice of the types of which the table should be composed. There is a certain number of colours which are very frequently met with; others are more rare, but must still necessarily be represented; there are even rare shades which are most difficult to characterise by description, and which it is consequently more important to place before the eyes of travellers as points of comparison. M. Broca commenced by reproducing, after nature, the most common colours, and found that they could be arranged in a small number of natural groups, each of which included all the fundamentally similar colours, or darker or lighter tints of the same colours. The colours were arranged upon the principle of M. Chevreul (who shewed that every colour leads from black to white by imperceptible gradations), each commencing with the deepest and leading down to the lightest shade. The first table composed consisted of three series, each consisting of four or five shades. In order to elaborate this, M. Broca availed himself of the assistance of Dr. Siebel and of M. Boissonneau *filz*, the first of whom supplied him with a number of paintings in water-colours of various coloured eyes, which enabled him to make what would appear to be a complete table of the different colours of eyes to be found amongst the population of Paris. The information obtained from M. Boissonneau was, if not more valuable, at all events much more varied. That gentleman has carried the art of manufacturing artificial eyes to the greatest possible perfection, and has consequently obtained for himself a *clientelle* in all parts of the world. As each artificial eye has to be made either from minute inspection or from an accurate painting of the natural one with which it is to correspond, and as M. Boissonneau always causes duplicate specimens of

all that he makes to be preserved, it may be inferred that his collection was of the utmost use to M. Broca in assisting him in the completion of his series, containing, as we are informed it does, eyes of Chinese, Negroes, Hindoos, Peruvians, Arabs, Egyptians, and inhabitants of all parts of Europe, all of which were freely placed at M. Broca's disposal.

(To be continued.)

THE FOSSIL MAN OF ABBEVILLE AGAIN.

WE have received a copy of *L'Abbevillois*, of the 19th July, which calls attention to the following facts, which are likely again to revive the much debated question relating to the Moulin-Quignon and Mesnières remains.

The neglected condition of a quarry, in which work was interrupted from the end of 1863 until May 1864, permitted M. Boucher de Perthes to pursue his researches without the intervention of any person. The workmen did not participate in these new discoveries; everything was seen in place, and taken from the bed by his own hand.

For a long while it had been remarked that osseous remains had been ordinarily enclosed in sandy agglomerations, which thereby often escaped observation by the geologists and by the excavators themselves. They noticed that the bones were incapable of recognition, and termed them *cailloux pourris*. The anatomists to whom they were shewn admitted that they were actually organic remains, but found they were too much broken or deteriorated to ascertain their exact nature.

Things were in this position since the discovery of the jaw. This confirmed M. de Perthes in his opinion that these neglected remains had more importance than was considered, and that there also were some human remains amongst them. With the perseverance by which he is known, he continued to explore the bed of Moulin-Quignon, making more than forty excavations from June 1863 to the present time.

Numerous fragments of human and animal bones discovered by him at two, three, and four metres from the surface, in undisturbed soil, and where there existed neither *éboulement*, nor fissure, nor even a sandpipe, were the recompense of this long labour. But, as it was not sufficient that these remains should be discovered by himself alone, it was necessary, in order to obviate contradiction,

that others should discover them with him. The 24th of last April he asked M. Jules Dubois, doctor, of the Hôtel Dieu at Abbeville, to assist at one of these diggings. M. Dubois hastened to accept this invitation.

Many fragments of rolled bone too small for definition, were then disinterred at two metres from the surface, in the yellow-brown bed. At sixty centimetres lower, M. Dubois saw in place a bone eight centimetres in length, which, disembarrassed from the matrix, was recognised by him as a human *os sacrum*.

The excavation was then directed to the other end of the quarry, where a bed of yellowish-grey sand, called *sable d'gre*, is shewn dividing the brown bed, a bed so hard, that here the hand is no longer sufficient, and the pickaxe must be employed. A human tooth, partly embedded in its sandy matrix, was by them seen in place and extracted from the bed by M. de Perthes, with all the silex which was fixed to it.

On the 1st May another excavation was made by M. de Perthes and M. Dubois. The ferruginous bed on the right hand afforded them, at a depth of 2 metres 25 centimetres of depth, three very damaged fragments of skull, but probably human. The grey bed on the left hand gave them some other bones, not yet determined, and a fragment of human tooth.

On the 12th May, M. Hersent Duval, owner of the quarry, and well known to geologists for the entirely disinterested courtesy which he affords to explorers on his land, being on the spot, desired to assist in the excavation, and he himself also was able to see in place at 2 metres 30 centimetres of depth, and to extract with his hand, a fragment of human skull.

On the 17th, M. Martin, *curé* of St. Gilles, formerly professor of rhetoric and of geology at the seminary of St. Riquier, and of whom no person here will deny the great knowledge, and M. l'Abbé Dergny, member of the Société d'Émulation, united with M. de Perthes to carry on an excavation. It was crowned with entire success. After being assured of the normal state of the soil, and of its being undisturbed, and having examined various fragments which were detached from the bed before their arrival, they saw in place and dug out, without the intervention of workmen, a bone which, disembarrassed from the matrix, was discovered to be a human skull, of which the strange depression of the superior part struck them exceedingly. The edge of this skull, worn by rubbing, demonstrated its antiquity, and these gentlemen did not doubt that it was coeval with the origin of the bed.

Monday, July 9th, a commission, composed of MM. Sauvage, adjunct to the mayor of Abbeville, L. Trancart, proprietor and mayor of

Laviers, Auguste de Caën, *avocat*, Marcotte, librarian and curator of the museum, Jules Dubois, already named, all members of the Society of Emulation, made an excavation, of which the results were equally conclusive. Many fragments of human bone were seen *in situ* and obtained by them from the deposit.

A more formal verification was accordingly contemplated. On the 16th July, the same commission again met, adding to it M. Buteux, formerly member of the General Council of the Somme, who is about to be decorated with the legion of honour for his valuable geological labours, M. de Mercey, a well known geologist, who came expressly from Paris, M. le Baron de Varicourt, chamberlain of the king of Bavaria, who came from Amiens, M. Girod, professor of physics and of geology at the college of Abbeville, M. de Villepoix, member of the Société d'Emulation, M. Alexandre Catel, M. Oswald Dimpre, and many other persons who united spontaneously with the commission, and of whom we regret that the names are unknown to us.

By this reunion of men, all friends of science and of truth, an excavation was made, and carried down to the chalk; many human bones, one of which was found actually on the chalk, were seen in place and collected by the commission. All these bones, amongst which the remains of animals are found, will be the object of a special study which Dr. Dubois has undertaken at the wish of the commission.

M. Boucher de Perthes, in the pursuit of his anthropological discoveries at Moulin-Quignon, has made one which geologists will not the less appreciate; these are marine shells exceedingly rolled, and for the most part reduced to the state of small white pebbles, very much resembling those of the flints, with which they might be confounded. He discovered them in the brown and grey beds, at 1 metre 50 centimetres to 3 metres from the surface, and mixed with the bones. He thinks that in the careful study of the other beds of the diluvium, and especially those where chipped flints have been discovered, human remains should also be found, otherwise so difficult to be distinguished from the rough flints of which they have taken the colour and nearly the form by the portions of sand, gravel, and small pebbles which attach to their anfractuosités, and of which they form a part.

P.S. We learn that amongst the bones collected by M. de Perthes are found two fragments of an upper jaw, and one almost entire lower jaw, also human, and which, it is said, resembles in form much that of the 28th March, 1863; it was 4 metres 30 centimetres of depth, and 22 metres from the spot where this last was discovered.

[We abstain at present from offering any comment on the above.
EDITOR.]

Miscellanea Anthropologica.

Prize Anthropological Memoir. The Paris Anthropological Society's triennial prize of five hundred francs, founded by Ernest Godard, will be awarded in May 1865. The prize will be adjudged for the best original memoir on a subject connected with anthropology. Manuscripts sent in for competition may be written either in French, English, or Latin, and printed memoirs in either of these languages, or German, Italian, Portuguese, or Spanish. The essays must be sent in before January 5th next year, addressed to the society's secretary, No. 3 Rue de l'Abbaye, Paris.

The Neanderthal Skull. [Extract from a letter received by Mr. C. Carter Blake from Dr. Pruner Bey.] "Regarding the Neanderthal man, it is indeed possible that the rachitism discovered by M. Meyer may have had its influence on the development of the frontal sinuses. The interior cast is remarkable for the right ascension of the frontal lobes of the brain, so that the expansion of the above-mentioned cavities has not at least influenced the human characters of man. There is besides this to be observed on the upper surface of the same lobes what you might call an "affaissement" of the gyri, which you attribute to the age of the individual, because you see the same on the cast of the illustrious Dr. Gall's skull, in my possession. For all the rest, chiefly as regards proportions, this interior cast corresponds nearest, as you observed, to that of a modern Irishman. Only in the last, which belonged to a younger individual, the gyri are more turgescent and the vertex is a little more elevated. Since I had the honour to write you my last, Providence has favoured me with the acquisition of a specimen which completes the proofs of the Celtic origin of the Neanderthal man. It is the frontal bone of a very ancient Celt, obtained from a tumulus in France, and belongs to a very young individual. Still, the frontal sinuses lying open, shew on the exterior and in the interior such a development, that this specimen, with its depressed forehead, may form a link, with others in my possession, to shew the progressive and regressive state of this particularity in ancient Celtic skulls. That this specimen, too, belongs to a highly dolichocephalous person, is evident on the first inspection.

"Yours, most respectfully and truly,

"PRUNER BEY."

9th July, 1864.

Recent Discoveries of Kjökkenmöddings.—The following letters have recently appeared in the pages of a contemporary:—

"Halifax, Nova Scotia, June 21.

"During the last winter session of the Nova Scotian Institute of Natural Science, the Rev. J. Ambrose, rector of the parish of St. Margaret's Bay, a district lying on the Atlantic seaboard of this colony, brought to the notice of the Institute the existence of extensive beds of refuse

shells and bones, mixed with fragments of rude pottery, and perfect and imperfect flint arrow and spear heads. Gifted with an inquiring mind, the gentleman in question naturally considered that their occurrence was not a matter of chance; and, following up the subject, he ascertained that similar beds had been known to exist on the shores of Denmark and the adjacent isles, and that they had received the name of *kjökkenmöddings*, or kitchen-middings, from being heaps of refuse shells, bones, etc., thrown aside by the primitive races of men who, in days of remote antiquity, visited annually, or dwelt continuously, in such positions. On perusing an article published in the *Report* of the Smithsonian Institute for 1860, which gave an interesting account of the kitchen-middings of Europe as surveyed by the Danish archæologists, a perfect resemblance to those of the Nova Scotian coast was at once perceived, in so far at least as the few specimens then obtained from these heaps proved.

“To endeavour to make a thorough search, and prove the nature of these deposits, the Council of the Institute of Natural Science decided upon having a field meeting on the spot where the kitchen-middings lay; and accordingly, on the 11th of June last, a large party proceeded by land from Halifax, the capital of the province, to St. Margaret's Bay, which is distant, in a S.S.W. direction, about twenty-two miles. This bay is exceedingly spacious, runs inland some eight or ten miles, and is in breadth, perhaps, five or six miles. A few islands stand at the entrance as well as at its head, and long low promontories, clothed with spruce, birch, and maple, stretch into the water at the N.E. corner, forming snug coves and sheltered strands. It is on the shore of one of these minor bays, having a sandy beach where canoes could be hauled up easily and safely, that the principal *kjökkenmödding*, found by Mr. Ambrose, lay, on a rising knoll some 20 feet above the level of the bay at high-water mark. It forms part of a grass field belonging to a farm-house hard by; and according to the statement of the farmer, and the appearance it presents, has been submitted to little, if any, disturbance at the hand of man. The deposit appears to have extended about fifty yards or more in length, by a well defined breadth of eight yards. Its surface is irregularly depressed and dotted over, on its western extremity, with granitic boulders of no great size. The soil which covers the mass is similar to that of the field in which it occurs, though, perhaps, a little darker in colour. It grows common meadow-grass and ordinary field plants, and its depth does not exceed two or three inches when the shell deposit appears, presenting a layer of compact shells, perfect and imperfect, in which lie bones of animals and birds, flint and quartz arrow and spear heads, large and small teeth, and broken pieces of very roughly-made pottery, bearing evident traces of attempt at ornament. This pottery was very dark in colour, and contained in its substance grains of granitic sand and mica in quantity. From the pieces of rim obtained, judging from their curvature, the earthen vessels could scarcely have exceeded the dimensions of a quart bowl. These bowls or cups must have been in common use, as the fragments occur in some plenty. No traces of implements denoting any connexion with the

later iron age occurred; and the only objects on which the art of man had been practised beyond the pottery and flint weapon heads, were bones sharpened into awls, one of which was obtained in a very perfect state.

"In the midst of, but more abundantly at the bottom of the refuse deposit, occurred rounded stones, from the size of a man's clenched hand upwards, bearing evident traces of having undergone the action of fire. These stones are precisely similar to those found on the beach beneath.

"At the bottom of the refuse heap, which occurred at a distance of eighteen inches from the surface, a layer of black soil came, two inches thick; then a layer of white-brown sand of the same thickness; then came a reddish-coloured earth, getting lighter as the spade went down, until the original foundation of hardened drift proclaimed no further investigation necessary in that direction. Taking a general view of the surface, the observer naturally supposed that the rounded granite boulders which lie scattered on the heap had afforded seats for a primitive people, who rudely cooked their food at this encampment on the edge of the wild forest; nor was the supposition incorrect; for, on digging around these boulders, greater masses of shells, and more evident traces of fire, were apparent than in other parts of the heap. The charcoal, in some instances, had lost but little of its former consistency, while, in others, it powdered into dust on being handled. This probably arose from the nature of the wood, some kinds affording a hard charcoal, and others soft.

The fauna of this Nova Scotian *kjökkenmödding*, so far as could be ascertained, was as follows. Of mammals, the moose (*Cervus alces*), the bear (*Ursus Americanus*), the beaver (*Castor Canadensis*), and the porcupine (*Hystrix dorsata*), were noticed; the beaver and porcupine by their teeth, which, from their brightness and compactness, might just have been taken from the jaw. A beaver's tooth had the root part rubbed, and smoothed to a head, giving, with its chisel-like point, the appearance of an instrument for cutting. Some of these teeth were jagged on their edges, as if by artificial means. The bones of the animals had been broken, and, with the exception of a few very small ones, none were obtained whole. Of birds, there were the bones of different species, some very large, and evidently belonging to a bird much larger than the great northern diver (*Colymbus glacialis*), which is one of the largest wild birds in the colony at the present day. The bird bones were also more or less broken, and one in particular had been opened by means of a cutting instrument down the side. Of fishes, the vertebræ of two or three species, the largest measuring about an inch in diameter; while two or three specimens of the opercular spines of the Norway haddock (*Sebastes Norvegicus*) were procured among the *débris* in a perfect state, which led to the supposition that they were used for some purpose, such as pricking holes. Of mollusks, the most common were the quahog (*Venus mercenaria*), clam (*Mya arenaria*), scallop (*Pecten Islandicus*), *Crepidula fornicata*, and *Mytilus edulis*. Of the two former species nearly the whole mass of shell consisted. The mussel shells had become so friable that the slightest touch was sufficient to break them.

“Time did not permit, however, a closer examination to be made on this first visit to the mounds; but some members of the Institute, aware of the interest attaching to the subject, have decided upon camping out during the ensuing summer in the vicinity of other deposits known to exist in various places, and hope, by thoroughly excavating the several mounds, to bring to light specimens which will doubtless help to prove the age in which they were constructed, and the similarity which existed between the manners and customs of the race who formed them and the constructors of those placed in like positions on the shores of Denmark and Northern Europe.

“J. M. JONES, President of the Institute of Natural Science.”

196A, Piccadilly, July 11, 1864.

“The general description of Mr. Jones in your last number of the *Shell-Mounds* in the Halifax district corresponds with one on a much larger scale that I have identified at Smyrna. This is known to residents and the old travellers as the fossil oyster-beds, but later travellers and geologists have ascertained that the oyster-shells are of late period.

“They form a bed on the side of Mount Pagus, below the Acropolis and above the theatre, constituting a stratum extending for above half a mile. Just above the theatre the deposit is cut through by a road leading to a quarry, and is there, I should say from memory, about sixteen feet deep. The deposit, like that near Halifax, is covered with soil and *débris*, and is also composed of a layer of *compact shells, perfect and imperfect, in which lie bones of animals and birds and broken pieces of pottery*. I found what appeared to me flint implements, but I have not yet had time to make a satisfactory examination. The pottery is not like that at Halifax, but is red, and like the common pottery of the country. I have invited the attention of the members of the Academy of Anatolia to this deposit, as belonging to a city of the Iberian or pre-Iberian epoch. Various hypotheses have been put forward to account for the oyster-shells and pottery, but there has been an unwillingness to refer them to a remote date, the general opinion being in accordance with the fable that ancient Smyrna was not on the present site, and that the inhabitants dispersed in villages on the plain of Boornabat were concentrated at Smyrna by Alexander the Great, whose followers began the Acropolis. To my mind, and I have been confirmed by several archæologists, the corner of the Acropolis next the city shews decided traces of so-called Pelasgian work. Thus, according to my view, the Acropolis was the Iberian or pre-Hellenic city, and the deposit on the hill the site of a still more ancient city. My impressions have been confirmed by comparison with the new collections in the British Museum.

“HYDE CLARKE.”

[We understand that the Anthropological Society of London are making inquiries at Smyrna, with a view to elicit further information on this most interesting subject. EDITOR.]

Description of the Cavern of Bruniquel, and of its Organic Contents. Part I. Human Remains. By Professor RICHARD OWEN, F.R.S., &c. (*Abstract of paper read before Royal Society of London, June 1864.*)

In this communication the author gives an account of the Cavern of Bruniquel, Department of the Tarn and Garonne, France, in the state which it presented when visited by him in January 1864, and a description of the human remains discovered therein by the proprietor, the Vicomte de Lastic St. Jal, in 1863, and subsequently by the author in January 1864. The circumstances under which these discoveries were made are minutely detailed, and the contemporaneity of the human remains with those of the extinct and other animals with which they are associated, together with the flint and bone implements, is shown by the evidences of the plastic condition of the calcified mud of the breccia at the time of interment, by the chemical constitution of the human bones, corresponding with that of the other animal remains, and by the similarity of their position and relations in the surrounding breccia. Among the principal remains of the men of the flint-period described are the following:—1st, the hinder portion of the cranium, with several other parts of the same skeleton, which were so situated in their matrix as to indicate that the body had been interred in a crouching posture, and that, after decomposition and dissolution of the soft parts, the skeleton had yielded to the superincumbent weight; 2nd, an almost entire calvarium, which is described and compared with different types of the human skull, shown to be superior in form and capacity to the Australian type, and more closely to correspond with the Celtic type, though proportionally shorter than the modern Celtic, and the form exhibited by the Celtic cranium from Engis, Switzerland; 3rd, jaws and teeth of individuals of different ages. After noticing other smaller portions of human cranium, the author proceeds to describe minutely the lower jaw and teeth of an adult, and upper and lower jaws of immature individuals, showing the characters of certain deciduous teeth. The proportions of the molars are not those of the Australian, but of other races, and especially those of ancient and modern Europeans. As in most primitive or early races in which mastication was little helped by arts of cookery or by various and refined kinds of food, the crowns of the molars, especially of *m* 1, are worn down beyond the enamel, flat and smooth to the stumps, exposing there a central tract of osteodentine without any sign of decay. The paper is illustrated by a view and plans of the cavern, and by figures of the principal human remains, and of two implements of bone on which the Vicomte de Lastic had discovered, on removal of the breccia, outline figures of the head of a reindeer, and the head of a horse in profile. The description of the various remains of the animals killed for food, and of the flint- and bone-implements applied to that and other purposes, will be the subject of a future communication.

Proportion of Female to Male Steps. By Dr. FECHNER. The proportion was found by Dr. Fechner to be = 100,00 : 115.76. To determine this proportion, Dr. Fechner observed from his window how many steps the by-passers, male and female, took to go over a certain distance (some twenty odd steps); 1258 females made on the whole 31,142.54 steps; males 1796, 38,409.05 steps. The observations were made on week- and Sundays at different times of the day

and variable weather, all which influences the steps. Excluded were children, cripples, or persons carrying bundles. The house in which the observations were made is situated in one of the suburbs of Leipzig, where working people and peasants pass in and out, and also citizens. According to Quetelet, an adult man is on the average 1.684 meter high, a woman 1.579 meter; hence a woman is about one-sixteenth less in length than man; it follows that the length of the step differs more than length of body, for the step of the woman is, according to what is stated between one-seventh and one-eighth less than that of man. This may be explained by the fact that, the extremities are, in proportion to length, less in woman than in man.

Names of Negroes. Kiessler writes from the African coast. "The naming of children among the Negroes is peculiar, depending on the day the children are born, whether it be the first or second, and whether it be from the same mother. A boy born on Monday receives the name of Kodjo, a girl Adjuwa; a Tuesday boy Kobena, girl Abenaba; Wednesday boy Kwaku, girl Effna; Thursday boy Kwauw, girl Aba; Friday boy Koffi, girl Effna; Saturday boy Kwamena, girl Amba; Sunday boy Kwassi, girl Akuffna. The first and second child have, among the Elminese, no other particular name, but the third boy is called Maisang, the third girl Mansang; fourth son Anan, fourth girl Emanan; the fifth, sixth, and seventh have no particular names, but the eighth, whether boy or girl, is called Aodju; the ninth Acon; the tenth son Baddu, tenth daughter Baddua; the eleventh child Dukung, and the thirteenth Duansa. Twins are called Atta; the first-born Atta-Panim, the second Attakakra (Kakra means little). Triplets are called Ahinanhang. A Negro may thus have three names or only one. *Ausland*, 1852, p. 1007.

The primary stocks seem to have been originally formed both for and by the localities they inhabit.—In one primary stock, the Caucasian, the cerebrum, or large brain, predominates; hence the developed forehead, the expressive features, and the noble carriage. Eyes variously coloured, teeth perpendicular, nose large, mouth small, chest broad. The skin, not being much oxidised, is whitish.

Negro.—The cerebellum is predominating; hence the receding forehead, oblique teeth, etc. The skin is perfectly oxidised, therefore black and velvety. Both religious and political life is there in its infancy.

Mongol: the intermediate stock.—As the middle brain predominates, the head appears large, angular, the forehead low, cheekbones prominent, nose flat, lips thick. The skin varies, approaching either the Hindoos or the black. The American, Mongol, and Malay races of Blumenbach form this intermediate stock. (*Lindemann, Anthropology.*)

Origin and Mental Agents.—The greater the mental development of a stock, the larger the sinciput and the frontal bone, the jaw recedes, the teeth are perpendicular, the facial angle larger, and the cranial capacity, in proportion to the face, larger, the latter becoming more

oval. Facial angle in the Caucasian 80-90°, Mongol 75-80°, Negro 70-75°. Link and Ith assume that the negro sprang from the ape, and that negroes formed the original human stock, as nature progresses from the imperfect to the perfect. This idea must be rejected, as the most savage nations stand far above the ape. Oken, Treviranus, Burdach, Goldfuss, and others, have justly observed, that we must not merely ascend from the animal up to man, but descend from man to animals. (*H. Lindemann, Anthropology.*)

Diversities of Mankind.—The diversity of the original stocks seems to have been conditioned by the various climates. All men, no matter whether they descend from one or several pairs, form but one species, which, however, is subdivided in primary stocks, influenced by climate, civilisation, habits, and morals. Fundamentally, all men are like each other in one respect, as they all manifest the same mental phenomena; they all more or less have religious notions, and may by intermixture produce fertile children. (*Extracts from Vortelungen über Anthropologie.—Lectures on Anthropology, by Dr. H. Lindemann, Prof. at Munich. Erlangen, 1848.*)

The Folds in the Hand as indicating Race (Instructions by Serres to Deville the traveller; also in Comptes Rendus).—The more we study the human organism, the more do we discover facts apparently insignificant, which are yet of value in determining races. The folds in the hand, so much celebrated in chiromancy, are of this kind. I have elsewhere indicated the relation between these folds, and the articulations of the fingers; but there is one fold which is not constant in all races, it is that which from the base of the ball reaches the summit of the fold, formed by the articulations of the first phalanges of the last three fingers. I have called this fold the Caucasian line, as it exists in all varieties of this race. It is but little perceptible in the Mongol race, and is completely absent in the Ethiopian, and seems equally absent in the types seemingly derived from that race. This, at least, results from a very curious observation made by M. D'Abbadie in some thousands of hands seen by him among the Abyssinians, the Caucasian fold is generally wanting. If the South Americans descend from the Polynesians, the absence or presence of this line would furnish an important indication. Among the North Americans which we have seen in Paris, as well among the Chinese, the Caucasian line is feebly indicated. (*Centralblatt: Miscellaneous Notices.*)

Psychical Difference between Man and Brute.—It is personality and free will by which man is specifically distinguished from the brute. However clever, cunning, or docile an animal may be, we never look at it as a person; for neither theoretically nor practically does the animal, in all its sensations, arrive at a consciousness of its own nature. It is just because man is enabled to do so, bearing within himself from his birth this germ, that the whole mental life of man is, through all the stages of its development, so radically different from the mental life of the brute. The distinction between man and brute becomes more striking when we exhibit the contrast

between the instinctive performances of animals, which have remained constant for ages, and the historical development of the human mind in the infinite variety of the productions of science and art, and the progressive change of the modes of life. But the principle of this psychological organism, which comprises all these mental phenomena, is the free, self-conscious will contemplating its own nature. The human individual becomes a person by self-consciousness. It is the separation of the individual from itself, without which no specific mental process is possible. The individual which is an *Ego* is a person. The animal has no other value but as an exemplar of its species. Man acquires a substantive value by his capacity of becoming conscious of his nature. The concrete result of this self-consciousness is—knowing and willing. Self-consciousness, knowing, and willing, are inseparable mental processes; they condition each other, and are only realised by their uninterrupted connexion. Without self-consciousness there can be no knowledge and free will; knowing and willing are, on the other hand, the necessary results of self-consciousness. Man only, and not the brute, possesses the desire of knowledge. Self-consciousness becomes in the end self-knowledge. The mode of life of animals is still the same as described by Aristoteles. A history of animals does not exist, excepting that which refers to extinct animals. It is by new creations that a progress is effected in the animal world. A limited instinctive action cannot progress. Human liberty and the possibility of mental progress are inseparably connected. Even in the subordinate aspect of human life, the universality of human nature, and his independence of instinct, become apparent. Eating and drinking, clothing and habitation, seem natural wants. But man does not remain fixed by what is absolutely requisite. His desires, impulses, and inclinations are infinitely extended. Even in his luxuries, man exhibits his independence of instinct. The mode and manner in which he satisfies the natural wants, the vastness of his social intercourse, contribute to render natural life more humane and more spiritual. Thus, even eating and drinking are not without influence on mental development. There is no doubt that the law of historical development limits the liberty of the individual, in rendering him, to a considerable extent, dependent on the state of civilisation of his time and his people; but this liberty is only limited, not destroyed. The progress is always initiated by the individual who produces something new by his own energy, and which acquires an objective value; it becomes a contribution to the mental life of the species. It is in this productive participation in history that the liberty of man is exhibited as contradistinguished from the instinct of brutes. Man thus shows his individual substantiality, his peculiar mental endowment, not merely in accidental positions, but in the regular course of general development. (SCHALLER, *Body and Soul*.)

Extracts from Organon der Erkenntniss der Natur und des Geistes (Organon of the Knowledge of Nature and the Mind), by CARL GUSTAV CARUS (Leipzig, 1856; Brockhaus), *Origin of Language* (greatly abridged). When we inquire why abstraction is absent or

nearly impossible to an animal, the cause appears to be that animals do not possess the means by which any real abstract notion can be conceived and permanently retained. This means is no other but language. . . In proportion as the nervous system is more developed, and animals live a cerebral life, manifested by the possibility of dreaming (observed frequently in cage-birds and dogs), the animals become more sensible of their own feelings, and express them in tones and gestures which may be termed the language of sensation, which, however, always remains perfectly subjective. Such a language is also possessed by man. Thus the infant, yet unconscious of itself, expresses by sounds and motions, its indistinct feelings, but in proportion as *mental language* becomes developed, this physical language is displaced. The animal acquires, however, in particular instances the capacity to understand something of the mental language of man so as to obey and even mechanically to imitate articulate sounds. This, however, is far removed from the notion of a real or mental language which can never arise without the capacity of self-consciousness, and the latter is only developed in proportion as language is developed.

At first the mind searches for sounds for purely objective conceptions, and thus the nouns (substantiva) are formed; then the qualities (adjectiva) must be expressed; and, finally, the relations in which these notions stand to each other by time-words (verba). In the formation of the first, if the object manifests itself by noise, the sounds are imitated, such as the reverberations accompanying lightning. On the whole, the number of such words is not large, and they necessarily resemble each other in most languages. In all other cases the inventive spirit of man proceeds according to thousands of different analogies, so that every people chooses different words for the same object; hence the infinite variety of languages.

The expressions equivalent for pure abstract notions appear last in any people. In order to understand how imperfect and fragmentary we must assume the beginning of a language to have been, we must examine the language of the savage or the development of speech in the child. The signs for the nearest and more important objects are first formed; mother, father, man, sun, moon, water, fire, etc. It is with such fragments that the savage and the child commences. Then are added the qualities, hot, cold, light, dark, soft, hard, green, heavy, light, etc. These are attached to the nouns: mother good, tree green, etc. Then come the sounds for actions, and it is remarkable how frequently (the languages of the native American tribes give evidence of this), connected actions are expressed in one simple word.

The designation for abstract notions come latest. It is only after the mind has acquired a great power over the designation of the higher abstract notions that it makes language itself an object, and begins not only to analyse and to determine the original sounds, but to give a form to language, *i. e.*, to lay the foundation for its grammar.*

* Every word is born as a whole in the mouth of man. It is only at a late

Man thus develops language out of himself, but it is language which reciprocally paves the way for the progress of the mind. Language may, in this sense, be said to produce thought. It is not without signification that in Greek *logos* has such a comprehensive meaning, and designates, besides word or discourse, also intellect, reason, and even a divine being—"In the beginning was the Word" (St. John).

All, in fact, what we term knowledge or science, is mainly conditioned by language. By language everything that is floating in the world is as it were sublimated and then fixed in words.

On Twins, &c. By Professor LEVY. According to statistical data there are—

	Twinbirths.			Triplets.
England, one in 63	-	-	-	4311
Germany „ 84	-	-	-	7182 .
France „ 92	-	-	-	11105
Denmark „ 78	-	-	-	4506

Besides climate, there are organic conditions which favour multiple conceptions. Thus the author saw in a Parisian Institute a woman who, in ten deliveries, had produced nineteen children. He observed the same disposition in women belonging to the same family. The physiological cause is the impregnation of several ova either simultaneously or at short intervals. The question has been discussed whether, in super-conceptions, the ova come from one ovarium or from both ovaria. The author thinks that either may be the case, for he found in each ovarium a corpus luteum, or two of them in the same ovarium. That twins may proceed from the same ovarium is proved by women having produced twins though one ovarium was perfectly degenerated. Modern researches have also shewn that the second egg may be contained within a common Graafian follicle; even the same ovum may contain two germs. As a rule, each twin is enclosed by its own membranes, and the eggs, where they come into contact, are separated from each other by a septum. . . . In five cases the author found that each fœtus had its own amnion, but both were enclosed within the same chorion. In all cases where there was a common chorion the twins were of the same sex.

period that the understanding analyses the word into individual sounds—letters. It is one of the greatest errors in believing that, in investigating the origin of language, we must begin with individual letters.

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NOTES ON WAITZ'S ANTHROPOLOGY.

By CAPTAIN R. F. BURTON, V.P.A.S.L.

I HASTEN to express the satisfaction derived from the perusal of the Anthropological Society's valuable publication, the first volume of Professor Waitz's *Anthropology of Primitive Peoples*, in the excellent translation of Mr. J. Fred. Collingwood. My object in taking up my pen is not to criticise an author who quotes in one tome nearly 1000 authorities, but simply as a traveller to point out and rectify within the range of my personal experience where the learned Professor's citations are no longer of their original value. I anticipate a further necessity of revision in the future volumes, especially that in treating on Africa, and having observed that the confraternity of which I am a humble member, is expressly invited so to do in Pref. p. xv, I make no more apology, but plunge in *medias res*.

(P. 37.) Dr. Waitz does not entirely assent to D'Orbigny's assertion touching the shortening and thickening of the body trunk in High Peru. I have observed this peculiarity amongst the Mountain Affghans, and I appeal to all who have visited Tibet and Upper Mongolia if such is not notably the case, especially when comparing the natives of the plateaux with the Hindús of the plains—also in pre-historic times a Mongol race. Broca (p. 226) when classifying peoples according to physical character, rightly placed the Hindú among the Mongols. D'Omalius d'Halloy made the Hindú a mixture of white Aryan and black Aborigin (p. 232), but for the latter we must read Mongol.

(P. 40.) I may remark that the demureness of the Arab boy arises from his being so much in the society of his elders. Before determining that a Negro child runs earlier than that of a European, it is always necessary carefully to learn the age. I have mistaken Negro boys of nine for five years old.

As regards the assertion "that fecundity must be very great among the Negroes of Africa, may be inferred from the enormous losses which she has suffered (*without any perceptible diminution of its population*) by the agency of the slave trade," I have observed that the diminution wherever the slave trade was active, is still palpable. I may quote the western part of Guinea and the whole of the Slave or Benin Coast. Where now there are units there were hundreds in the days of Bosman and Barbot. Yet it is, I believe, acknowledged as a law, that after any great destruction of human life by famine, pestilence or war, the birth rate increases, and some writers have argued from this a providential and direct interference. The Negress, however, is rarely—unless exceptionally and out of Africa—the mother of many children; she is also seldom barren, and as she is never an old maid, the villages swarm with young ones.

The deficient fecundity of the Americans arises from uncertainty of food and the severe bodily drudgery of the women. I have observed the contrast of the nomade and the settled Indians, although the latter are apt to die of civilised diseases—catarrh, bronchitis, consumption, etc.

(P. 46.) With regard to American colour, I have often found the exposed skin to be of a deep copper, and the covered portions a clear olive, and have conjectured that the trivial term, "Red men" comes from the first impression made by the face. On the other hand (p. 47), I know many Europeans who have lived for a long time in Guinea, and who, with a fair amount of insolation, have not become copper-coloured: but Monrad has exaggerated the peculiarities of Guinea. I do not find the Negroes of the Gold Coast more gluttonous than their neighbours; indeed, they are mostly fish eaters. And if "Europeans who visit this region preserve their good appetite," which is not the case (p. 60), it is a pity to waste the blessing where we can get so little wherewith to gratify it.

(P. 42.) The rule given by Dr. Livingstone touching the Negro tint—of which D'Orbigny advocates the opposite—is that it is darkest in regions of damp heat. But descent greatly, if not wholly, modifies this; *e.g.* in Bonny Town, West Africa, once a great centre of slavery, there are many men light coloured as mulattoes. Yet the climate is what the Delta of the Niger alone can shew. I quote one of many, and shall return to the subject in commenting upon p. 172.

(P. 43.) I have never seen a Rohilla resembling an Icelander; they are magnificent animals, like the Spanish Contrabandista, some of them models of Jew-like beauty. Niguët certainly describes an Albino. The Affghans, east of the Indus, are mixed with Indian blood; those bordering on Iran with Persian, hence they "exhibit all shades of

colour." (P. 47.) I do not believe in a pure black Jew; in Aden, surrounded by a swarthy population, the very old Hebrew colony is light haired and fair skinned, as in Syria. (P. 48.) The Arabs of Yemen are often black; they have mixed for centuries with Africans, preferring black women as cooler in summer, and yellow women in winter, and are at present quasi-mulattoes. The straight Grecian-like noses in Yemen, came, I believe, from the Abyssinians, their old governors. There is a curious case of hereditary transmission (p. 85,) in El Yemen. The Shaykhs of the great Fazli tribe have invariably six fingers. So in Persia, if a Sayyid child—a descendant of the Prophet—be born without the upper eyelids being pink, it is not believed to be legitimate. This does not rest upon the old woman's fancy in England, that the face of the infant a few moments after its birth must express who is its father—which it does not.

(P. 51.) The Brinjari (not Bengari) is a low caste, the Rajput is the highest military caste in India, children of the Sun and children of the Moon. I regret to see Dr. Waitz quoting the "Erdkunde." Ritter's observation (p. 332) that the Oriental, and especially the Arab, is deficient in the perception of the beauties of nature, which distinguishes the European, is simply absurd. The *Golden Poem of Lebid*, an Arabic *Deserted Village*, is the most effective piece of the kind ever written, and it borrows all its interest from nature. Unhappily, Prof. Waitz (*loc. cit.*) somewhat endorses the opinion of the Erdkunde, by remarking that, among the "peoples of the South the sense for the really beautiful, for calm contemplation of the beauties of nature, is very defective." Let him read H. H. Wilson's Hindû Drama.

(P. 56.) The influence of climate upon character, so far from being exaggerated, has, I think, been greatly fined down. The Coast Negro is degraded by climate not isolated by the sea. (P. 341.) The African of the interior is a better man, because living in a purer atmosphere. Who can travel even through Northern Europe and not remark the excessive action of the organs of nutrition, the fondness for animal food, and the love of strong liquors. In the South, again, men are temperate, somewhat indolent, and all their predilections are for women and gambling. Something of this kind is conceded in p. 339.

(P. 66.) It is only necessary to see the Barabara and to recognise the intermixture between the Semite and the Hamite. The author of *Negroland of the Arabs* can believe anything, even that El Islam can alter the Negro's features; the only thing he cannot believe—like the learned Vossius, in that point only—is the existence of African intertropical snow-mountains.

Dr. Waitz finds fault with Köler for ascribing to individuals of a Negro tribe the same diversity of features as amongst Europeans, because they are not a mixed tribe. But Köler speaks of Bonny, than which there is no tribe, not even the English, more mixed. Moreover, the theory is carried too far by Humboldt and his followers. In Africa, as in other parts of the world, there are people with tribal and others with individual physiognomy. Some confusion comes from the difficulty of an uninstructed eye in perceiving these differences, which to an *habitué* are most salient. The physiognomy of the Fernandian Islanders is *not* the same in all (p. 213). I will back my crew of seven Kru-men—a pure breed as any known—for diversity of stature, form, colour, and countenance, against any gig's white crew on the Coast of Africa. In p. 212, the Kru-men are spoken of as if not belonging to the Negro race, whereas they do; their "particularly well-shaped chins" retreat with the weakest of expression.

I would draw the attention of anthropologists to the brown accident of Negro (quoted from Lander, p. 86); I have seen these men amongst very dark tribes, as the Batanga, and even amongst the Kru-men; the features showing that there is no trace of European blood. To the unscientific observer it appears semi-Albinism.

I am puzzled to make out on what grounds (p. 93) Dr. Latham and Prof. Waitz (p. 208) limit the Niger region to between the Niger and Senegal and to a portion of Senaar, Kordofan, and Darfur—all the latter countries shewing a considerable Semitic innervation. About the mouth of the Niger, the Ibos and Ijos, for instance, are pure Negroes; already, on the Upper Niger, they begin to be modified; as is truly remarked by M. Müller (p. 221), "a rigid division of mankind is impossible." It is hardly possible to lay down the Negro habitat proper. Perhaps the nearest limits would be 10° N. and 10° S. The South African family reaches from the equator to Hottentotia, but near the line they are Negroes, near the Cape, Negroids. On the eastern coast, the whole of that zone of 20° is occupied by African Mongols, who shew clear traces of Arab, Somal, and Galla blood, and who have in parts traditions of being sprung from Persian ancestry.

With respect to the shortness and flatness of the Negro occiput, this is found amongst several Negro tribes. I may especially notice the Kru-men, in whom the transition from the occiput to the back is normally flatter than in most Europeans, even the Germanic races. When travelling in the United States, 1860, I could almost always diagnose Germanity by the excessive flatness of the occiput, and the vespertilian projection of the ears when viewed *d tergo*; shewing what the phrenologist would call a deficiency of philoprogenitiveness. The

small and globular forehead, with uneven and knotty surface (quoted p. 94 from Blumenbach), is not constant, and I have observed it to be more common amongst women than in men. Again, the voice of the Negroes (p. 95), is in some tribes notably dulcet and musical; in my visit to Haran I have remarked the contrast between the beauties of that organ and the coarseness of the external development. It is, methinks, the black colour which chiefly sets off the African's teeth (p. 95); amongst tobacco and ashes chewing tribes, they soon become rusty fangs. The tuftiness of the hair (p. 96) is sporadic; often in the same tribe you see the "pepper-grain" growth and the broad cast, as on our own scalps. The enormous wigs of hair amongst the Denakil and Somal, the women of the Gold Coast, and the lakes of Dahome, seem to preserve about the same parallel of latitude. In the two former the blood is pure, in the two latter the largest wigs are found amongst the mulattoes. The "Fans," an unmixed tribe, have hair hanging to the shoulders; so in Ugogo, and in other parts of Central Africa. I am not aware that the Negro's shin is more tender than the European's (p. 97), but his head is harder, which induces me to prefer the former for assault—in all races the shin is a sore point. Many Negroes will stand with crossed legs, so as to rest firmly upon the extreme inner edge of both feet, which I defy any one present to do, although it is practised by the goatherds of Teneriffe, who are distant cousins of the Moroccan Shilha. The size of the genitals is typical of the Negro (p. 98), especially when contrasted with the Arab; it is the same with their horses. But the Negro parts when turgescient do not fulfil their promise. The Negro aroma (p. 100) can be distinguished, I believe, amongst all the pure tribes, and even those, like the Comoro Islanders, slightly mixed. The Arabs of South Africa consider it a shibboleth, and it is at once possible to distinguish between a Somal who has it not, and a Meawahili or a Zanzibar man who has it. Of course, amongst a cleanly and hard-working people, like the Kru-men, it is less sensible, but it is there. Exertion of body brings it out, and mental emotion, as amongst ferrets; during coition it is painfully developed. In Persia there is a peculiar name for the Jew smell, *bui shimit*. The incurving of the Negro's vertebral column (p. 105), is, I think, general, nor can it be attributed, as some have thought, to carrying burdens on the head.

The fatty cushions, or *steatopyga*, upon the glutei muscles, belong to almost all Negro tribes, but in women they are most remarkable, especially after the first child. In men they appear as rounded projections of the nates. The Somal are said to choose their wives by ranging them in line, and by picking her out who projects furthest

à tergo. Possibly it is a compensation for the long narrow African pelvis, and nothing can be more hateful to a Negro than a thin rumped woman; it is like a siccidity or thinness in Spanish eyes.

With regard to the proportion of male to female births, I have attempted to prove in the City of the Saints, that in the polygynic community the female influence preponderating, there is a great excess of female births, that in polyandry (as Mr. Dunlop of the Bengal Civil Service has shown, by the E. Indian Hill Stations), boys are greatly in excess of girls, and that in monogamy the proportions, without being fixed, are nearly evenly balanced.

If Capt. Landolph (p. 113) during long travels on the African coast, saw only one deformed Negro, he did not call on the king of Dahomey, who has a male and a female troop of hunchbacks.

There is no "enormous power of abstinence (p. 116) displayed in living for a week on water and salt." I have lived for seven days on water without any great loss of strength or energy; in fact, till all the adipose tissues are absorbed, hunger has little effect on some constitutions. And almost all sound men, methinks, might be benefited by an occasional long fast—total abstinence.

In the "Lake Regions" I have alluded to clay eating; these Africans prefer earth of dry or bed termite-hills. I am told that in some of the rivers of the Bight of Biafra, the mud from the bottom is fished up and chewed.

Fernando Po (p. 130) must be omitted from the list of tropical places where the European can neither live nor be acclimatised. The Spanish authorities have established a hospital and a sanitary station at Sta. Cecilia, about three miles and a half distant from Sta. Isabel, the lower town, and the result is admirable. The men go about all day in the thinnest of caps, and none but the mildest fevers are known. When—ah, when!—shall we follow their example?

It is not everywhere that the Negro enjoys better health in the rains (p. 133); at Fernando Po he dies of rheumatism, quinsy, etc., and it is fast becoming the opinion, that the rains, like the "dries," are not the deadly seasons in Africa, the worst periods being about the equinoxes, when changes of weather set in. I have no fear of travelling, even in West Africa, during the rains, and I spent the greater part of 1862 in so doing, by boat and on foot. Annabom is not rightly mentioned amongst the rainy places; the little volcano is exceptionally dry, and, I should say, salubrious.

(P. 134.) Not having visited the Fezzan, I cannot speak with authority. But if an Arab said to me, "I trust you don't feel cold (*bárid*)," he would be using an euphemistical term for "aguish," "feverish."

(P. 135.) The absence of R is by no means constant in Negro or

in South African languages; very few of them, however, have an R and an L equally well articulated, "and the presence of one generally argues the absence of the other." "Lallation," as it is called, is a rule in Africa rather than an exception.

(P. 137.) I am by no means of opinion that the civilised man is inferior to the savage in the perfection of the senses. Tracking is often quoted as an instance, and the local memory of savages is remembered. But the simple reason is, that the savage applies all his attention; the civilised, having other things to attend to, does not. Every sense can be sharpened by practice; but practice is rare in city communities. The English soldier can hardly see in the dark, because he is not accustomed to night work. Moreover, we overwork our senses,—as of sight,—by reading, and by using instruments. The power of smell is great in the Bedouin, because he lives in the purest air; it would be blunted by a few years in Cairo.

(P. 142.) I can make nothing of the strange assertion, that children born in Bonny Town remain blind ten days after birth. Many traders have seen babes very shortly after entering this world, and find their optics as wide awake as those of their parents, which is saying not a little. It is a popular error to suppose that "a great portion of the popular music in the United States comes from the Negroes; "Negro Melodies" are mostly composed by white men in New York.

(P. 145.) It is strange to assert that the Negroes have at all times been little liable to small-pox, a disease which may be traced back to Abyssinia about forty years before the birth of Mohammed. It desolates Central and Eastern Intertropical Africa, as I have mentioned in the "Lake Regions," and it has become endemic in many parts of Western Maritime Africa, especially on the Slave Coast, from the Volta River to Lagos. At this moment it is raging at the latter place, and Fernando Po has had a severe attack. Many Galla tribes destroy, like the Chili Indians, suspected patients; and I have reason to believe that in parts of Africa, small-pox, like syphilis in Persia, is propagated without contact.

(P. 151.) The "cruelty and barbarity of the Dutch boors on the Cape" is rapidly passing into a formula. But we have hitherto had only the accounts of their enemies, especially the missionaries, and I suspect that the proneness to exaggeration has been palmed upon the public. It is an unfair remark (p. 314) to suppose that the Boers, like the Bojesmans, could not distinguish between good and bad actions. Colonists, in their position, are often reduced to the *razzia* as their only safety. It is not a Corsican *vendetta*, but a preventive against it. It will perhaps appear that, despite its philanthropy, the English Government has wasted more lives of the enemy, and certainly more blood of its own servants, than the Boers ever did.

(P. 152.) It is scandalous to assert that the Arabs of Algiers are restrained from intoxication by love of money. They are Moslems, and nowhere in El Islam appear the disgraceful excesses of Christendom. The Arabs of the East African Coast will not sell ardent spirits to the natives. The Christian traders on the West African coast have made the traffic a curse far heavier than the slave export.

With respect to the extinction of so-called aboriginal races on the approach of so-called civilisation, I may state that the normal *modus agendi* is the improvident alienation by the former of the large tracts of land necessary for savage and barbarous existence.

(P. 155.) It is to be wished that the learned author had given his authority for the statement that "in South Arabia many marriages are unproductive." Polygamy is nowhere "prevalent among the mass of the population," being necessarily limited to the comparatively wealthy. I have before remarked that, in the polygamic community the ratio of female births is much increased, which greatly mitigates the social danger suggested in p. 299, and that such is not the case with the other two systems. Polygamy, therefore, which obviating the evils of romantic love, induces that unaffected and less passionate relation between the sexes, which in every way favours procreation, is best fitted for a thinly populated land; monogamy for one sufficiently stocked, and polyandry for an overcrowded region. And so reading prostitution for polyandry we find the system act, even in modern Europe. The author might have stated that, in p. 298, as regards the common assertion that where polygamy exists, conjugal fidelity is very lax, the reverse may be predicated with an equal amount of truth. I agree with the learned Professor (p. 299) in doubting the quantity of domestic dissension caused by polygamy.

It is worth while investigating whether in Europe, as amongst the Chippeways, sterility should not be looked upon (as a rule) as the consequence of incontinency. The various arts and contrivances, not to speak of operations and violent medicines, by which both sexes endeavour to avert the consequences of their indulgence, are well calculated to destroy the power of fecundity.

(P. 161.) The remark that, "where men eat each other the gods are generally bloodthirsty, and receive their share," is a fair comment upon the old poet's *Timor fecit deos*.

(P. 165.) I would transfer to all our Negro colonies the rule once prevalent amongst the whites in Australia—namely, that the natives cannot be valid witnesses in a court of law. After three years of service on the West Coast of Africa, I have met only two Negroes to whose oaths I would attach the slightest importance.

(P. 168.) The "Relapse-law" of Girou and others, like certain

theories touching the non-existence and disappearance of the hymen in the *Ilibata virgo*, are charitable, and calculated to mitigate domestic dissensions. But can more be said in favour of these doctrines?

(P. 169.) It is true "that the Negro produces with a white woman a more Negro-like child than the white man with the Negress." So the true mule, whose sire is an ass, is notably more asinine than the rarer breed of reversed parents. I cannot agree on this point with the learned Dr. Pruner Bey. But as Dr. Waitz justly remarks, "the characters of mongrels are not constant." In Hindostan, the French produce with Hindú women children remarkable for grace and prettiness, where nothing can be less prepossessing than the English "half caste." In p. 349 the author endorses the usual theory that the mental capacity of mongrels is generally greater than that of the lower of the two races from which they sprang.

(P. 172.) Respecting the statement of M. d'Abbadie, that "among the Negroes of Abyssinia red and black individuals are seen in the same tribe," Dr. Waitz remarks that "they are probably mongrels, and the type is inconstant." As a rule, the contrary is distinctly the case. In almost all African tribes the jetty black complexion is a rarity and much admired, as a "dark man" was in England a century or two ago. The black brown is the general complexion, admitting of course many shades, and it corresponds with the bilious temperament in Europe. The red and yellow tints, which are so common as hardly to be called exceptional, are the xanthous and sanguine varieties of the Caucasian.

(P. 175.) It is well known that variety of colour and conformation, possibly the result of varied diet, distinguish domesticated and mixed animals of the lower order from their wild congeners, and I should not hesitate to extend this rule to the inferior races of mankind. In the head quarters of the Aryan race, Persia, and in the trans-Mesopotamian regions, from the classical ages, a remarkable similarity of face and form has co-existed with the highest psychical development.

(P. 178.) It would require many a page to state reasons, but I may generally register my distinct adhesion to the assertions of Messrs. Nott and Gliddon, that "a few drops of European blood produce a decided modification in the moral and physical character of the Negro." It is greatly to be desired (pp. 179-187) that the learned author would define what he means by "mulatto," "man of colour," and so forth.

(P. 181.) As regards Peru, the ill-advised liberality of that republic, which refuses to recognise the inferiority of the African to the European, has borne fruit as deadly as St. Domingo, where we see all the horrors of abolitionism duly carried out. Life and pro-

perty are safe in Chile; in Peru it is the reverse. We have permitted the Peruvians to murder with impunity a British minister at his own table, and the captain of an English man of war. And such is our charity, that we are now loud in abusing Spain, whose idea of Christian tolerance has not reached this exalted standard.

(P. 184.) With respect to the consequence of consanguineous marriages, a subject which has been much discussed by anthropologists, I may adduce a national instance of close alliance without any deterioration of blood. Amongst the Bedouin Arabs every man marries his cousin, and "daughter of my uncle" is a synonym for wife. If the girl prefer a stranger, the result will be a blood feud. Does any one pretend that the Arab race, which has preserved this custom from immemorial time, shows any degeneracy?

(P. 194.) I find no similarity between the old Egyptian and the Guancho skull; the latter, though oval and Caucasian, is larger; the bones are thicker, and the occiput is more highly developed. Moreover, the Guancho race had light yellow hair, still to be seen in its mummies. Engel (p. 225) was right to include in the same type or form of skull, a Guancho and a Bedouin; but in the latter there is, I think, less osseous matter. With respect to the remark (p. 204) that the black populations of the South Sea cannot be immigrants from Africa, because the Africans do not possess ships or perform sea voyages, it may be observed that the Guancho of Teneriffe are proved by language to be a distinctly Berber (Shilha) race. Berthelot, an incorrect observer, exaggerates when he asserts that the present inhabitants of the Canary Islands are physically and morally the ancient heathenry; yet, in face, figure, and disposition, there are distinct traces of mixture. I am astonished to see (pp. 253, 299, and 326) the learned professor apply the word "Guancho" to the inhabitants of the whole Archipelago, when all correct writers, who know its derivation, limit it to Teneriffe. The existence of polyandry in Caucasian Archipelago (p. 326) has been questioned by modern authorities.

(P. 211.) If M. Werne's description of the Southern Nilotic Dinkas be correct, that "the greater part of Europeans would resemble them if they were painted black," I should conclude the Dinkas to be a distinctly Negroid people. Superficial observers often make the same remark even amongst Negroes, but never I believe with strict propriety; the general differentiation around them is so great, that an exceptional likeness strikes them unduly. The same may be said of the "regular Grecian features" at Ashantee, and the Moorish aspect of the royal family at Dahome. But in the last two kingdoms there has been a great mixture of northern blood, especially from the Kong mountains. The mother of the present ruler of Abomey is a

Makhi woman, and the *History* of Mr. Dalzel shows another instance in the last century.

The Mandengas (or as Dr. Waitz writes the word here and p. 299, after an older and incorrect fashion, "Mandingos,") are called "Susu" in the Gambia River. I may hazard the conjecture that "Mandenga" is applied to a variety of tribes speaking very different dialects, and it is certain that some of them are pagans, whereas the majority are at present Muslim.

(P. 213.) The word "Edeeyah" or "Adiah" applied to the Fernandian Negro is a pure mistake introduced by Allen and Thomson, *Narrative of the Expedition of the River Niger*, and has been copied by subsequent writers, down to Mr. Winwood Reade's *Savage Africa*. Those islanders, who are divided into a multitude of clans, have no national name. The word Edeeyah probably arose from the salutation which they learned from the early Spanish colony, "Adios," "Arios," "Adias," "Aria." Their hair is by no means silky, and they are palpably descended from the "Bubya" tribe of the Camaroons Mountain, whose minimum distance is nineteen miles.

(P. 215.) I marvel to hear it asserted that "the Californians greatly resemble the Negroes of Guinea," having never seen the least likeness. The Utah and Californian tribes are merely poor specimens of the so-called Red race, which suggests, if anything, the Mongolian. How polysynthesis, the one great peculiarity of its thousand dialects, not to remark the vast variety of its cranial forms, which extends from Hudson's Bay to Patagonia, can be reconciled to the tongues of High Asia, must be left to future philologists, who may be able to reconcile the polysynthetic with the agglutinated.

(P. 224.) The remark that the Jews have everywhere lived as an excluded caste must be taken *cum grano*. In Abyssinia they were rather rulers than slaves, and the Falasha in parts still preserve a dignified independence.

(P. 246.) The great South African language should by no means be called "Kongo" (Congo); the Congoese dialects being perhaps the least typical.

(P. 256.) With respect to the baptism with water amongst the ancient pagans of Mexico, we may quote a similar coincidence still prevailing in the country of the Mpongwe or Gabons (West Africa). They place the new-born babe upon the ground, sprinkle it with water, and give it the best of advice, especially counselling the girls to tell "plenty lie".

With respect to part 2 of this valuable volume, devoted to "Psychological Investigation", I shall be more concise, chiefly because the subject is of exceeding diffuseness.

(P. 271.) "In Kordofan," we are told, "the birds are less shy if the sportsman appears in a dress different from that worn in the country." This is very exceptional. M. du Chaillu found it advisable to blacken his face when shooting in West Africa, and whilst hawking in Sindh I was obliged to wear a Baloch dress in order to keep the falcon upon my fist.

(P. 275.) One of the author's best remarks is, "Property on the soil, which a stranger must not enter without permission of the proprietor, seems to be sometimes more fixed among savage nations than we are inclined to believe." In a late volume upon the subject of Abeokuta, I have given a notable instance of this fact, in opposition to those who, by ignoring the right, would lay the foundation of endless future troubles.

(P. 277.) When the author asserts that "the religious element (which he simplifies to the conviction that certain invisible mysterious powers influence the phenomena of nature, including man and his fate), is nowhere entirely wanting"—a sentiment which some would transfer to the *sensus numinis*—he might give the reason. It is, methinks, this, that in the present age of the world, man, no longer actually primitive, has become sufficiently gregarious and numerous, to throw off the utter savagery which must have characterised the earlier stages of his psychical development. Analogically, we observe that the wildest tribes now existing, have for all religious ideas a few superstitious customs.

(P. 279.) The idea of "a departed soul returning to the earth" is far beyond the metaphysics of savage people. I have attempted, in the *Lake Regions of Central Africa*, to explain the Negro's ghost belief; an incarnate dread of death, a faith in presentity not in futurity, without the remotest connection with Shamanism, metempsychosis, immortality, or resurrection. This is stated with partial correctness in p. 372. I doubt, however, that a belief in spectres led to animal worship. It is purely an European idea which makes the savage (p. 368) "look at nature as a world of spirits." Both the idea and the word "spirit" are unknown to him beyond his organisation,—he merely attributes to "matter" powers which we transfer to "spirit".

(P. 297.) I can by no means agree with the assertion that "there is a natural moral feeling even amongst the rudest nations." It would be easy but tedious to prove that "conscience" is a thing of chronology and geography; and that there is no sin, no crime, however atrocious, which, in some part or at some time of the world, has not been held, or is not held, a virtue. Only two instances: petty larceny amongst the Spartans, cowardly murder among the Somal.

It might have been the case in 1731, it is not so now, that a girl at Whydah is more courted if she has had many lovers before mar-

riage. The virginal *primitia* there have, as elsewhere, the general factitious value.

It is also a scandal to assert that, "Chastity among Negroes only means that pregnant and menstruating women should abstain from illicit intercourse." During those periods they are unclean even to their husbands. The African's idea almost corresponds with ours, except that it is somewhat more instinctive and less complicated with considerations of "duty". It is perfectly true that the wife only, not the husband, can commit adultery. The *Trade and Travels in the Gulph of Guinea*, by Mr. Smith, is amusing from its simplicity, but its facts are to be distrusted.

(P. 301.) It is unfair to state that "The Fellah women (which also happens in other Mohammedan countries) have no hesitation in exposing every part of the body except the face." If a woman be seen in an unseemly state she will first cover her face; the act is instinctive with her and rational: you can remember her features, not her limbs. But Moslem women do not expose their persons more willingly than Christian women.

(P. 302.) It is true that flood-legends abound throughout the world, but local floods have also been common. Not only amongst "uncultured peoples," but even with tribes as far advanced as the Mpongwe of the Gaboon River, no two individuals will give the same account of their belief and of their "insipid traditions." A "cosmogony", in the strict sense of the word, is not so common amongst wild tribes as a kind of primitive history of the first supposed pair; this is recognised in p. 374. Certain legends originate from common descent; the adventures of the Hebrews about the head of the Red Sea, were doubtless taught to the present races by the early Christians.

(P. 305.) As regards the disputed question "whether the ideal of beauty is the same among all peoples," I have practically found that a woman who would be called pretty in Europe, would also be admired in Asia, Africa, and America. There are, of course, peculiarities which are appreciated by one race and disliked by others; but of the *tout ensemble* I can have no doubt. As the Negroes (pagans) have no devil, and nothing representing him, they cannot imagine him to be white. Travellers in A.D. 1730 need hardly be quoted upon such points in these days.

(P. 311.) If the influence of the Portuguese on the West Coast has ever obstructed the progress of the Liberian Republic, among the Negroes it has long ceased to do so.

(P. 315.) As regards the "morality of slaveholders in the United States," I believe it to be in every way equal to that of the non slaveholding community. Late events have somewhat opened the public eyes in Europe. Tardy justice to the Southern States is done in p. 333,

but the remark that "the descent of these Southrons is essentially the same as of the inhabitants of the Northern States," should be modified. The author does not do due honour to the Catholic Church, which stoutly, and from the first, stood up against the abuses of the slave export, and if the Congo missionaries preferred that Negroes should be sold to (not kidnapped by) Catholics rather than Protestants, they believed that the former would teach the true faith, and they knew that the latter would ill-use their victims more. As regards its being infamous in Java to seduce a man's mistress, not his wife, the same tenet has been and is held by many "men of honour" in Europe. The husband is defended by law, the "keeper" is not.

(P. 320.) Despite the arguments of J. G. Müller, there is every reason to doubt that human sacrifice in the olden times could be traced to cannibalism as its source. At present, in Ashantee and Dahomey, where man-immolation is the essence of the national religion, anthropophagy is unknown. Similarly mistaken is M. Müller's idea (p. 335) that the primitive man beholds in the animal a manifestation of the general power of nature. The savage reveres the beast, which like the bison feeds him, or like the tiger rends him.

(P. 337.) The learned author should have illustrated so paradoxical an assertion as "A nomadic pastoral life cannot be considered an advance compared with a fishing or hunting life." In the case which he quotes, the "Kaffirs", many tribes are beginning agriculture, of which as mere fishers or hunters they would never think. It is startling to meet with such a prediction as this (p. 340) in a philosophic work, "The interior of Asia seems destined for ever to remain the home of nomadic life."

(P. 343.) To what tribes does Dr. Waitz allude when he says, "The peoples of the Deccan, notwithstanding the favours of nature and their intercourse with the Hindoos, are but little civilised"? The population is Hindú and Moslem, the few and scattered savage tribes, like the Todas, are isolated and utterly unimportant.

(P. 354.) The learned author well shows how slavery, the great civilising agent of primitive races, gives to the few people that leisure which is requisite to secure for them a comfortable existence. I cannot, however, agree with him in his deduction, "This latter circumstance (leisure or comfort?) is, in some respects, rather an impediment than a help to civilisation; for however true it is that leisure is requisite for intellectual development, still in that leisure itself there is for the primitive man no impulse to serious mental activity." The contrary is the rule, and hence letters, beginning with the savage oratory, arose amongst the nations. Even in peoples so stationary as the Negro, so destitute of "individual great teachers of humanity,"—who we are assured in p. 363 emerge from every

people,—the free are, as a class, far superior to the serviles, and it is popularly remarked that African kings are a century in advance of their subjects.

(P. 358.) Proyard, 1776, is an obsolete author to quote upon the subject of Loango, where all the conditions of the country are now changed. About 1856 copper mines were discovered in the interior, and their produce forms the principal wealth of the coast. Neither there, nor on the lower Congo, can domestic cattle be bred, and the game has been well nigh killed out.

(P. 358.) The beneficial effects of despotism, as a primary necessary element in the development of society, are fairly stated. Few travellers will agree with Humboldt, that all races are equally destined for liberty. (P. 352.) "The remarkable fact that there is no instance of a free constitution in the torrid zone among peoples which possess any civilisation", presents a notable exception in the Village Republics of the Deccan. In the legal language of Java, unlawful wounding is called "wounding the king," or "regicide": the same is the case in Dahome.

(P. 365.) Too much attention cannot be given to this assertion. "THE INTERCOURSE WITH A FOREIGN COUNTRY MAY BECOME A CURSE, IF THE NATIVES ARE PROVIDED WITH BRANDY, FIRE-ARMS, AND SIMILAR ARTICLES, WHICH LEAD TO THEIR DESTRUCTION." The English trade with the oil rivers of the Biafran Bight, to mention no other places, is, I believe, a greater curse to the country, a more effectually demoralising agent, and a greater disgrace to a civilised people than any evil that ever prevailed amongst the aborigines. The Christian merchants of Zanzibar have inflicted the same miseries upon the East African coast: the Moslem Arabs would have held themselves disgraced by such a traffic. We could understand this paralysis of the moral sense if the trade were carried on by "the refuse of European society with primitive nations." Unhappily, it is under the direction of men who read their Bibles and who go to church. Against such fatal influences, the now flourishing palm oil trade, which we are told (p. 367) will effect much to "raise the Negro," is utterly powerless. For odious depravity and degradation, I will match the people of Old Calabar against the world.

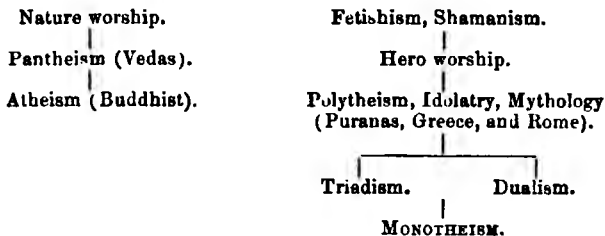
(P. 366.) Rajah Brooke's complete success at Sarawak,* concerning which, in a footnote, the author suspends judgment, proves how dependent is peaceable and friendly intercourse between European colonists and savage nations upon the personal character of the first governor.

(P. 370.) After long experience in fasting, I doubt whether it can,

* We are informed that a communication on this subject will shortly be laid before the Anthropological Society of London.—ED.

without medicines or other influences, induce the ecstatic condition into which the North American priest throws himself.

(Pp. 368, 379.) According to the learned author, the Genesis of religion stands thus: 1. A raw unsystematic polytheism; 2. Hero-worship; 3. Idol worship; 4. Theistical religion. I would propose the following genealogical tree, beginning with the three primitive, and ending with the three theistical faiths:—



With the concluding remarks of the learned author, upon the subject of civilisation and the destiny of humanity, I fully agree, and would express my gratitude to him for placing the subject so clearly and sharply before his readers.

It will not, I hope, be considered hypercritical to remark that the term *Naturevölker*, aptly translated “primitive peoples,” should not be rendered “peoples in a state of nature” (p. 292), nor give rise to such a term as the “natural man” (p. 288), instead of uncivilised man (p. 285). To man there is no state of nature, hence all states are natural to him; it is natural to him to live, in a palace as in a cave, to sit upon a sofa, as upon the ground. Nor can any crime—infanticide, cannibalism, or sodomy—be properly termed “unnatural”, because all have formed part, not only of human practice, but also to some extent of human religions.

Dr. Waitz has been severe upon the American school, represented by Agassiz, Morton, Nott, Gliddon, and others. Upon this point, however, our Society has, I believe, expressed its opinion.

But I cannot repress my astonishment at the manner in which the learned professor of Marburg treats the subject of El Islam. P. 376 contains more errors than perhaps any author of the last century has made. I deny that the religion has, more than any others, been an incubus on intellectual and moral progress: this is a characteristic accident of all faiths, and man must progress by warping them to his purposes, or by overthrowing them. I deny that its professors will always remain inferior to Christian peoples: the latter are superior intellectually, the Moslems in morality and manly dignity. It is curious to read in these days that the Moslem dictum of immortality promises sensual enjoyments to the faithful: these are the rewards of the ignorant and

benighted faithful; others will enter into a state described quite as vaguely as by any of the Gospels. The belief in predestination at once imparts submission to Fate, and quickens, not deadens, mental and corporeal efforts. It may be my Nasib or Kazá to escape such and such a danger, or to succeed in such and such an enterprise by such and such means as may suggest themselves, and I act accordingly. Yet (p. 325) it is owned that Abyssinian Christians are far beneath the Moslems in industry and honesty, showing that the race of man modifies faith at least as much as faith influences races. In p. 375 we find it admitted that El Islam, more intelligible to the Negro (and Negroid), and more compatible with his culture in Abyssinia, gains on Christianity. In page 388 we find Mr. M. Martin quoted to the effect that no Indian has ever become a true Christian. Even Voltaire,* by no means the most exact of men, never made such a blunder (repeated in p. 317) as to ascribe to the Moslems a doctrine that women possess no souls. Old Christian authorities, who looked at marriage only from a sexual point of view, have seriously doubted the fact; the Moslems never. It was a silly scandal spread centuries ago to rouse one half of humanity against El Islam, the first and greatest reformation of the corrupted faith called Christianity; and its effects have endured till this day. No Arab refuses to use a knife or a spoon; those who object to forks are of the same *trempe* as the many devout Christians who look upon science as a something unholy. It is new to assert that the Arabs in Africa are but little superior in intellectual culture to many heathen peoples: El Islam orders a school to be built by every one who erects a mosque; it will be well when England learns the lesson. The faith of the Koran is, of all theistical faiths, the most nobly tolerant, as all practically acquainted with it are aware. Such observers as Lady M. W. Montague never found that women in Muslim countries want liberty, or hold an undignified position: the idea seems burned into the European brain, but it is simply absurd, the effect of misrepresentation and a most superficial study. The Muslimah is certainly guarded from temptation; and when she falls into it she is deservedly punished. The Christian woman is exposed to every risk, and placed upon a comfortless eminence, that publicity may deter her from yielding. Which process is the more logical? It is, alas! not only Turks, Syrians, and Arabs who believe

* Voltaire, *Dictionnaire Philosophique*, sub voce Alcoran, "Il n'est pas vrai qu'il exolue du paradis les femmes." It is instructive to compare this article with the above mentioned page of Dr. Waitz; and I venture to hope that, in another edition, these errors will be corrected. In page 377, we are told that the Count d'Escayrac de Lauture is an eloquent eulogist of the Mohammedan religion; the reason being that that traveller has experience and no prejudices.

that they fulfil every duty by prayers and ceremony. Lastly, to quote the most extraordinary error of all, the idea of attributing to El Islam an "eudæmonistic colouring" is diametrically opposed to fact. Mohammed strove stoutly against asceticism, the bane of oriental systems, but he strove in vain: the characteristic of El Islam is a peculiar gloom.

With respect to the orthography of proper names, I find that both the author and the translator have preserved the forms used by the authorities from whom they borrow; and, indeed, to have done otherwise would have caused a great increase of labour without proportionate advantage. We find, therefore, such forms as Kaffirs (p. 45, for Kafirs or Caffres), Tudas (p. 45, for Todas), Yarriba (p. 60, for Yoruba), Barabra (p. 60, for Barabara), Tschego (p. 91, for Nchigo), Papaws (p. 100, for Popos), Cunka (p. 105, for Cankey or Kankei), St. Thomas and Annabon (p. 133, for San Thomè and Annobom), Camanches and Riccarees (p. 141, for Komanches and Arikaris), Yebus (p. 242, for Jebus or Ijebus), Sowaheili (p. 254, for Sowahili), Apollonia (p. 299, for Appolonia).

On the other hand, I think it to be regretted that the excellent translator should have preserved such palpable Germanisms as Jemen (p. 48, for Yemen), Maniok (p. 59, for Manioc), Schoschonies (p. 62, for Shoshonia), Adamaua (p. 209, for Adamawa), Vindjha (p. 252, for Vindya), Schamanism (p. 303, for Shamanism), and Cawries (p. 367, for Cowries). Amongst the errors and misprints must be reckoned Botokudes (p. 55) and Botocudes (p. 215) for Botucudos, the word being derived from *botuque*, Port. a bung; Dentrecaesteaux (p. 295, for D'Entrecaesteaux) and De Barras (p. 326, for De Barros). Finally, in p. 257, "twirling," should be substituted for whirling, and, in p. 335, bison for buffalo.

BAIN ON THE SENSES AND THE INTELLECT.*

ONE portion of Professor Bain's great work on the human mind has, after an interval of nine years, reached a second edition. We are in doubt whether we ought to congratulate him on the fact, or condole with him on the delay. But, all things considered, we believe we may congratulate him, and we do so most sincerely. It seems hard, at first sight, that the second edition of a sensation novel should spring

* The Senses and the Intellect. By Alexander Bain, M.A. Second Edition. London: Longman and Co.

up, like a mushroom, in a night, while the second edition of a philosophical work requires nine years for its development. But the author of the philosophical work may console himself with the reflection that his reputation will endure, when that of his rival is dead and buried. The elephant sees out many generations of mushrooms; and Professor Bain's reputation will survive that of many sensation novelists.

The fact that Professor Bain's work has reached a second edition tells not a little in favour of the pursuits of the present generation. The *Senses and the Intellect* is not unnecessarily technical, but it is not a *dilettante's* book. The man who works steadily through it performs a task of some severity—of such severity that, unless the work were congenial, he would not perform it at all. But let it not be supposed that in saying this we wish to detract either from Professor Bain's matter or from his style; we believe, on the contrary, that the work is made as attractive to the general public as such a systematic treatise on this subject can be made. The news that the first edition has been absorbed we think we must regard as very good news for the psychologist and the anthropologist.

The differences between the first and the second edition are, as Professor Bain says in his preface, not very material; we shall have a word or two to say upon them presently, but before doing so we will sketch out the general plan of the work.

After giving his definition and division of mind, Professor Bain begins with a chapter on the nervous system and its functions. The experiments of Flourens are cited to prove the different offices of different parts of the encephalon, and especially of the cerebellum. Although the objections of Brown-Séquard to the conclusions of Flourens are quoted, they do not appear to have shaken Professor Bain's confidence in the theory that the cerebellum harmonises the locomotive movements. Indeed, we should have liked this chapter better had the author spoken with greater diffidence of the present state of cerebral physiology. In the first volume of the *Anthropological Review* (p. 337), numerous apparently contradictory facts and experiments, as well as contradictory theories of different physiologists are brought into juxtaposition. It is impossible to read that article without coming to the conclusion that there is indeed some connexion between the encephalon and mental phenomena, but that it is at present impossible to state definitely what is the nature of that connexion. Professor Bain argues that the brain is the principal organ of mind; yet, in a footnote, he gives us the experiment performed by Pflüger, which we quote: "A beheaded frog, whose hind foot is touched with an acid, makes efforts with the other hind foot to wipe away the acid. If a drop is placed on the back on one side, the animal uses

the leg on that side to relieve itself of the sting; and, farther, if by cutting the nerve that leg is rendered powerless, the other leg is stimulated to remove the acid. These actions have the character of the voluntary actions; and yet they proceed from no higher a centre than the spinal cord." Professor Bain's remarks on the difficulty which arises here are not very satisfactory. "We have," he confesses, "no means of adequately explaining such a phenomenon. Possibly, in animals of a low order, the processes of will and intelligence are not so exclusively centralised in the brain as in the higher vertebrata." Possibly so; but the results of different experiments are so contradictory, that we think the only course an unprejudiced man can at present take is to suspend his judgment.

After instituting a comparison between nervous force and electricity, Professor Bain says, "The current character of the nerve force leads to a considerable departure from the ancient mode of viewing the position of the brain as the organ of mind. We have seen that the cerebrum is a mixed mass of grey and white matter—the matter of centres and the matter of conduction. Both are required in any act of the brain known to us. The smallest cerebral operation includes the transmission of an influence from one centre to another centre, from a centre to an extremity, or the reverse. Hence, we cannot separate the centres from their communicating branches; and, if so, we cannot separate the centres from the other organs of the body that originate or receive the nerve stimulation. The organ of mind is not the brain by itself; it is the brain, nerves, muscles, organs of sense, and viscera. When the brain is in action there is some transmission of nerve power, and the organ that receives or that originated the power is an essential part of the circle of mechanism.

"The notion that the brain is a sensorium, or inner chamber where impressions are accumulated, like pictures put away in a store, requires to be modified and corrected. . . . Whether, under a sensation of something actual, or under an emotion, or an idea, or a train of ideas, the general operation is still the same. It seems as if we might say, no currents no mind. The transmission of influence along the nerve fibres from place to place seems the very essence of cerebral action. This transmission, moreover, must not be confined within the limits of the brain; not only could no movements be kept up, and no sensation received by the brain alone, but it is uncertain how far even thought, reminiscence, or the emotions of the past and absent could be sustained without the more distant communications between the brain and the rest of the body—the organs of sense and of movement."

This theory is ingenious, and would be strictly in accordance with Hartley's theory of vibrations, of which Professor Bain's work constantly reminds us; but there is an objection to the theory, so far as

memory is concerned, which seems to us unanswerable. The warrior who has lost his limbs in battle can in memory fight his good fights over again, and suffer pangs in the tissues that lie beneath the sod. The current in this case certainly stops short of the apparent seat of the revived sensation; and if in this case, why not in all? But, though we cannot shut our eyes to this difficulty, we must not forget that the "current" theory is in perfect harmony with modern scientific views of Force. The objections to the sensorium theory are perhaps equally great, especially when we take into consideration Pflüger's experiments with the frog; and so, again, we have forced upon us the conclusion that, on this subject, we know nothing. At present, the only way of arriving at a state of certainty on these subjects seems to be the adoption of Dr. Ludwig Büchner's* method. He generally deals with a theory antagonistic to his own in this manner: "There is not sufficient evidence to establish this theory to my satisfaction; the absence of sufficient evidence to establish a theory is equivalent to the presence of sufficient evidence to disprove it; therefore, this theory is wrong, and mine is right." Fortlage, it seems, has had the misfortune to differ from Dr. Büchner, and has considered it an error to place the seat of the soul in the brain. "If Fortlage," says Dr. Büchner, "had taken the trouble of reading, merely superficially, any manual of physiology, he would have kept this remark to himself." Perhaps, if Dr. Büchner had weighed the evidence on all sides of the question, his work would have lost much of its dogmatism, and not a little of its brilliancy.

To return, however, from the cock-sure to the pains-taking school of psychology. Professor Bain next proceeds to consider the muscular system, and what he calls spontaneous activity. As this theory of spontaneous activity is made a prominent feature in his system, we must endeavour to explain what it is, and upon what basis the author conceives it to rest. The theory is that muscular movement is antecedent to stimulus and to sensation; that it is the result of a spontaneous flow of energy from nerve-centres; and this theory the author believes to be a necessary part of a satisfactory theory of volition. The proofs are thus recapitulated in Professor Bain's work on *The Emotions and the Will*:—

"The physiological fact of a central discharge of nervous energy where no stimulus from without is present as a cause; the activity of the involuntary muscles displayed in the maintenance of the respiration, the circulation of the blood, etc.; the circumstances of awakening from sleep, wherein movement as a general rule appears to precede sensation; the early movements of infancy, and the activity of

* Kraft und Stoff.

young animals in general; the activity of excitement; the occurrence of temperaments of great activity with comparatively low sensibility."

We do not think these arguments are sufficient to prove that the activity is antecedent to stimulation, though they certainly are sufficient to prove that the amount of activity called forth by any given stimulant differs with the condition of the centres upon which it acts. To prove absolute spontaneity, it would be necessary to bring in evidence a discharge of force from a centre to which no stimulus could in any way have been conveyed; and this condition it seems to us impossible to fulfil. The stimulus of pressure acts even upon the *fœtus in utero*; and, when once any single centre has been acted upon, it is impossible to be certain that it may not, in its turn, act upon other centres. Far as we may carry back our inquiry, we cannot eliminate the possibility of stimulation, and can therefore never demonstrate spontaneity. We will say a word upon each of the arguments, beginning with the last, to which there are two objections. In the first place, if admitted, the argument will only prove what we have already allowed, that the result of stimulation varies with the condition of the centre stimulated; in the second place, the question of stimulation is distinct from the question of sensation: the activity of the "active man" may be, and probably is, somewhat automatic in its character; he acts because he has acted, and because, as Mr. Herbert Spencer would say, his parents have acted; he has inherited, as physicians would say, the temperament, as Mr. Herbert Spencer would say, the experience, or to speak perhaps more accurately, the associations of his ancestors. In other words, the relation of his centres to the conducting nerves and the external world is such that he is an active man; but, in looking to the centres, we must not forget the relation.

Coming now to the argument from the activity of young animals, we cannot admit that the "freshness" of the centres is the sole cause; nor is it even necessary to assume that the freshness of the centres is the principal cause. It must be recollected that in youth the stimuli are new, and at all periods of life a new stimulus has a most powerful effect, whether it be a new emotion, a new study, a change of scene, or a change of air. That the nervous centres partake of the vitality which pervades the whole system in youth there can be no doubt; but that the slowness and inactivity of age result merely from exhaustion of the nervous centres, and not from loss of novelty in the stimuli, nor from the induration of the tissues in general, we can see no evidence whatever. Nor, again, are we by any means sure that when we awaken from sleep, movement even *appears* to precede sensation. Persons who are least in the habit of dreaming dream, when they

dream at all, just before waking. In other words, sensation is received before those movements which precede the act of getting out of bed. And even were this not the case, we could not be certain that such movements are strictly spontaneous. The mere necessity that we are under of lying long in one position may produce a state of limbs which may act as a stimulus. If we stand too long with the weight of the body on one leg, and then change to the other, the act is surely not independent of stimulation; nor do we believe that the act of stretching the limbs in bed is independent of a similar stimulation. To take now the argument from the involuntary muscles, not even Professor Bain himself professes to believe that the spontaneity of their movements is proved. Speaking of the first movements of the heart and lungs, he now says, in a note, "I do not wish to foreclose this question, or to deny that external stimulants may come into play to produce the effect." And, in another note, he very considerably modifies his first argument from the tonicity of muscle, which he now admits may result from a *constant* stimulation, though he regards a constant stimulation as equivalent to no stimulation at all. But if Professor Bain does not wish to foreclose the question, neither do we; the question seems to us as difficult as to ascertain the first origin of motion in the heavenly bodies, or the origin of matter itself. The problem seems to be this: given two bodies acting on one another; which first began to act on the other? An analogous question would be—given a circular line, where does it begin?

Whichever way this delicate question may be settled (if, indeed, it can be settled at all), we do not think Professor Bain's work will lose much of its value, for that value consists, all theory apart, mainly in the description and classification of mental phenomena; and both description and classification are admirable. It is impossible, in a few pages, to convey any idea of the elaborate care with which all the details are worked out, both in the work we are now considering, and in *The Emotions and the Will*. There is a constant reference to the anatomy of the organs of sense—a constant endeavour to ascertain how we arrive at our ideas of the external world. To give a meagre outline of a picture whose chief beauty is the richness of its details would be unfair. We must leave the description for our readers to study at their leisure. The classification is so simple, that we hope to succeed in explaining it. First in order come the feelings of muscular movement, as a class distinct from the five commonly recognised senses, and through these feelings, together with those of touch, says Professor Bain, we arrive at our ideas of space. The muscles of the eyes are, of course, not to be forgotten. Next to the muscular feelings come the "sensations of organic life," which Professor Bain also

classes apart from the five senses. These sensations are the organic muscular feelings, *e. g.*, injuries, cramps, etc.; the organic sensations of nerve; the organic feelings of the circulation and nutrition, *e. g.*, thirst, starvation, etc.; the feelings of respiration; the feelings of heat and cold; and the feelings of electrical states.

Then come the five senses, in the following order: taste, smell, touch, hearing, sight; and there is a reason for the order in which they are taken. Those which contribute least to the permanent forms and imagery employed in our intellectual processes are considered first; those which contribute most, last.

The appetites are next dealt with; under which head are classed sleep, exercise and repose, thirst and hunger, the appetite of the sexes, and "the accustomed routine of life," *i. e.*, the desire which recurs every day to do our daily labour, whatever it may be.

After the appetites, Professor Bain treats of the instincts. "*Instinct*," he says, "is defined by being opposed to acquisition, education, or experience. We might express it as the *untaught* ability to perform actions of all kinds, and more especially such as are necessary or useful to the animal." We quote this definition, because a good definition of instinct is a desideratum; and this is very good as far as it goes. We are, however, somewhat surprised to find no mention made here of Mr. Herbert Spencer's theory that there is such a thing as inherited experience. If that theory were adopted, instinct would have to be opposed, not necessarily to experience in general, but to the experience of the individual. Though there are objections to the use of the term "inherited experience," there seems no reason to doubt that Mr. Herbert Spencer is on the right track when he connects the actions of the present generation with the experience of the past. Professor Bain, who has evidently studied Mr. Herbert Spencer with care, would hardly have passed over this theory, had it not been apparently irreconcilable with his own theory of spontaneous activity. It is obvious that, assuming hereditary experience to be a fact, it would be necessary to travel back *ad infinitum* before we could arrive at spontaneity.

We come now to that portion of the work which deals with the intellect, perhaps the most satisfactory portion. Professor Bain now starts by enunciating more clearly than in his first edition the great fundamental "Law of Relativity." By this is meant that, as change of impression is an indispensable condition of being conscious, or of being mentally alive either to feeling or to thought, every mental experience is necessarily twofold. We can neither feel nor know heat except in the transition from cold. In every feeling there are two contrasting states; in every act of knowing two things are known to-

gether. In addition to this faculty of discrimination, the mind has the power of retaining and recovering past impressions, which power is exemplified under the head of the "Law of Contiguity." The remaining property of the intellect is consciousness of agreement; and this property is treated of under the head of the "Law of Similarity."

The Law of Contiguity, called by Sir William Hamilton the Law of Redintegration, is thus stated by Professor Bain. "Actions, Sensations, and States of Feeling, occurring together or in close succession, tend to grow together, or cohere, in such a way that, when any one of them is afterwards presented to the mind, the others are apt to be brought up in idea." This law is followed out in all its details, and in its application to all mental phenomena, with an elaboration and with a richness of illustration, of which we cannot here give any idea. We can only quote another sentence by way of example. "Contiguity joins together things that occur together, or that are by any circumstance presented to the mind at *the same time*, as when we associate heat with light, a falling body with a concussion."

The Law of Similarity is thus stated: "*Present* Actions, Sensations, Thoughts or Emotions, tend to revive their *LIKE* among previous Impressions or States."

"Some preliminary explanation of the kind of relation subsisting between the two principles of Contiguity and Similarity, is requisite in order to guard against mistakes, and especially to prevent misapprehension as to the separate existence of the two modes of action in the mental framework. When the cohesive link between any two contiguous actions or images is confirmed by a new occurrence or repetition, it is obvious that the present impression must revive the sum total of the past impressions, or reinstate the whole mental condition left on the occasion immediately preceding. Thus, if I am disciplining myself in the act of drawing a round figure with my hand, any one present effort must recall the state of the muscular and nervous action, or the precise bent acquired at the end of the previous effort, while that effort had to reinstate the condition at the end of the one preceding, and so on. It is only in this way that repetition can be of any avail in confirming a physical habit or in forming an intellectual aggregate. But this re-instatement of a former condition by a present act of the same kind is really and truly a case of the operation of the associating principle of similarity, or of like recalling like; and we here plainly see that without such recall the adhesion of contiguous things would be impossible."

In short, when dealing with Contiguity, we must consider it as the *variable* element, while Similarity is the *constant*; in dealing with Similarity we must regard it, in its turn, as the *variable* element, and Contiguity as the *constant*.

The Law of Contiguity has been well worked in different psychological treatises from the time of Aristotle downwards, and especially by Hartley. Mr. Lewis, it is true, denies Aristotle the merit of having discovered the Law *as a law*, and says we read our modern ideas *into* his writings. But it is certain that Aristotle did enunciate the Law almost as distinctly as Professor Bain. He saw the *tendency* of a state of consciousness co-existing with or succeeding another state of consciousness to cohere in future with the associated state of consciousness; and we have even now arrived at no more. Mr. Herbert Spencer has made an attempt to carry the law farther, and to ascertain why, when a state of consciousness has been at different times associated with several other different states of consciousness, it coheres with one of them rather than with another; but he does not pretend that he could predict, under any given circumstances, what state of consciousness or states of consciousness, would be revived in association with any other given state of consciousness. He compares this problem with the astronomical "problem of three bodies." But to Professor Bain alone belongs, if we are not mistaken, the honour of having carefully worked out the Law of Similarity. It has been glanced at before; it was insisted on by Sir William Hamilton; but, so far as we are aware, it has never been treated in detail until now. And the law is undoubtedly of very great importance in many ways, but especially inasmuch as it enables us to class under one head the mental operations commonly called Generalisation, Abstraction, Induction, and Deduction. Such terms are convenient enough at times, but the Science of Psychology is terribly subject to the disease of word-worship, and all kinds of improper uses have been made of words originally intended to serve no other purpose than that of a convenient division.

Another use made of these two Laws of Contiguity and Similarity, both in the present work and in Professor Bain's Essay on Character, is the classification of different types of mind. For instance, the Naturalist is strong in the element of Contiguity; the man who discovers the laws of Nature is strong in the element of Similarity; the former observes and remembers, the latter identifies, classifies, and generalises. Of course a man may be strong in both elements, and may both remember and classify, as Linnæus did.

There is yet another element in our mental constitution which Professor Bain treats of under the head of "Constructive Association." He says, "By means of Association, the mind has the power to form combinations, or aggregates different from any that have been presented to it in the course of experience." This power is of course conspicuous in the poet, painter, engineer, etc.; but we must take

leave to object that this law, if law it can be called, is somewhat opposed, if not in direct contradiction, to the Law of Contiguity. For instance, a poet imagines a centaur. Of course he never saw a centaur; but he has seen a man and he has seen a horse. In this case the Law of Contiguity seems to act from the head of the man downwards until his body joins the body of the horse; it seems also to act from the tail of the horse forwards until the body of the horse joins that of the man. But at the line of junction the law seems to be completely reversed. Nor will the Law of Similarity help us out of the difficulty. There certainly seems to be here a new element, distinct from the laws of association, properly so called. How to deal with it and reduce it to law seems to us a very difficult question. By the law of contiguity the mind has associations given it from what is commonly called the external world. By the constructive faculty it creates associations for itself. In the one case it depends upon experience both for the materials and for their arrangement; in the other case it depends upon experience for the materials, but apparently not for the arrangement.

It will be seen that throughout the whole work Professor Bain assumes, what has sometimes been denied, that the subjective method of examination may produce good fruits. By the subjective method we mean here what M. Auguste Comte and Mr. Buckle meant by the term, the method of examining our individual consciousness. Mr. Lewes, in his "Aristotle", has recently used the term in another sense—as a synonym for the method which dispenses with induction, for the method which reasons from premisses that have not been previously verified. That any scientific results can come from the subjective method in this latter sense of the term is obviously impossible; but that good results may come and have come from introspection, we firmly believe, as do Professor Bain and Mr. Herbert Spencer.

The objection of the Positivists that the instrument which performs the operation is identical with the thing examined, appears to us to be invalid. It starts by assuming two propositions, of which one is certainly false and the other has never been proved to be true. It assumes, first, that there is a permanent immutable *ego*, which no one has yet succeeded in demonstrating; and it assumes, secondly, that this *ego*, when contemplating itself, always contemplates itself as it exists at the moment, whereas in fact it will be found that in every act of so-called introspection, it is the past which is considered and not the present; and our own past states of consciousness are surely as legitimate objects of scientific consideration as any other past facts which we may happen to remember. It may certainly be argued

that memory is more treacherous than direct observation. But, if so, it may be answered that we can confirm our own past experience by experiments on other individuals. We may interpret, and we do interpret their words and actions by reference to our own past states of consciousness.

There is one very curious addition to Professor Bain's definition of mind, which we do not consider by any means an ornament to the second edition of his work. We are obliged to bring it in abruptly and *à propos de rien*, because it has really no connexion whatever with any part of his system.

"Mind," he says, in the first page, "is commonly opposed to Matter, but more correctly to the external world. These two opposites define each other. To know one is to know both. The external or object world is distinguished by the property called extension, which pertains both to resisting matter, and to unresisting, or empty space. The internal, or the subject world, is our experience of everything not extended; it is neither matter nor space. A tree, which possesses extension, is a part of the object world; a pleasure, a volition, a thought, are facts of the subject world, or of mind."

The object of this definition is "to comprehend in a few words, by some apt generalisation, the whole kindred of mental facts, and to exclude everything of foreign character." But we submit that the object is not attained by raking up this old distinction, which is almost, if not quite, meaningless. Any relation between any two bodies is as truly unextended as mind is. A line one inch long is to a line five inches long as one to five; a line five inches long is to a line twenty-five inches long as one to five also; but who can say that the relation between either pair of lines is of any given length—that it is extended. And so, according to the definition, any given object is a part of the external world; any of its relations to other objects is part of the internal, or subject, world. We must confess ourselves unable to see that the relation between any two objects is a part of the subject world if we assume that the objects themselves are not a part of that subject world. The perception of the relation is a part of the subject world certainly, but then so is the perception of the two objects themselves. It seems to us that the distinction is about as useful to the psychologist as the distinction between vegetable forms and non-vegetable relations would be to the botanist. "Vegetables," he might say, "inhale carbonic acid and exhale oxygen, but botany does neither the one nor the other; the relation between a vegetable and a vegetable is not itself a vegetable, and so at one *coup* we have separated vegetables and the science which treats of them." Sheer nonsense all this of course, but no more nonsense than the distinction

of the object-world and the subject-world by the terms extended and unextended.

We were for a long time puzzled to conjecture why Professor Bain, who says elsewhere, "no currents no mind," should disfigure the first page in his book with such a curious piece of patch-work as this. There are some passages which lead us to believe that Prof. Bain has a very strong sense of humour, and we suspect that this little vagary is intended as a quiet joke; if so, it is certainly an excellent joke. Professor Bain is probably as well acquainted as any one with the words Horace uses when ridiculing an unequal work of art,

"Purpureus, late qui splendat, unus et alter
Assuitur pannus."

which might be freely translated, "Professor Bain has tacked on a theological patch or so to cover a multitude of scientific sins," *i. e.* sins regarded from a certain theological point of view. The humour lies in the cool audacity of assuming that one page, to which attention is called in the preface, will cover the nakedness of 639 other pages. The proportion is really not that of a fig-leaf to the human form. But Professor Bain has perhaps met men as easily satisfied as the vice-principal of a college at Oxford, who, when informing a pupil that he was to be presented with books of a certain value to be chosen by the pupil himself, said, "Now choose whatever you like; no restriction whatever; but be sure you get good bindings; no half calf, you know, whole calf, mind, whole calf, whole calf."*

Whether it be worth while to conciliate the small fry of uneasy theologians at this price we very much doubt. It must be always borne in mind that the earnest believer has no fear of the truth, and is on the side of the man of science. He is persuaded that he has the true religion, and that truth can never hurt it; and he knows that if men of science take the wrong path for a time, they will ultimately find out their mistake and turn back again. Had men of such a stamp been in certain high quarters, we should not recently have witnessed the most ludicrous of all spectacles—Infallibility afraid of facts, and scenting Schism in the very name of Science.† A true believer no more thinks it necessary to bolster up his faith at every turn, than a true gentleman thinks it necessary to tell everybody he meets that he is a gentleman. If, then, religion has an enemy in these days, that enemy is not the conscientious man of science, but the fidgety theologian.

* Fact within our knowledge.

† The *Home and Foreign Review*, an ably conducted publication, which treated scientific subjects from a Roman Catholic point of view, recently received a hint to commit suicide, and committed it accordingly.

But to return to Professor Bain. We have to express our regret that we have found it necessary to differ from him on some points; and we regret it the more, because controversy takes up very much space, and assent very little. But, in the main, we consider the three works, *The Senses and the Intellect*, *The Emotions and the Will*, and *The Study of Character*, to be a most valuable contribution to the Science of Mind, perhaps the most valuable that has yet appeared. Differences of opinion there always must be in every science that has not become exact. But there is one point in which, above all others, we agree with him, and that is, in his estimate of the value of that *haute école* of mental gymnastics, Mental Science. Like all other sciences, it gratifies, perhaps we ought at present rather to say excites, our natural curiosity; it serves to explain differences in the intellectual character of different individuals; and, above all, it is only through it that we can arrive at a rational system of education.

THE GIPSIES IN EGYPT.*

By ALFRED VON KREMER.

EXCEPTING the Jews there is no people so scattered over the earth as the gipsies. Homeless and yet everywhere at home, they have preserved their physiognomy, manners, and language. Everywhere they support themselves as tinkers, musicians, fortune-tellers, and everywhere have they but loose notions concerning the rights of property. Whilst in Europe it is only in Hungary and Spain where the gipsies still exhibit all their peculiarities, inasmuch as elsewhere they present the varnish of civilisation; Egypt is the classical soil of the East, which shows them in their primitive form.

The Turks and the Persians denominate this remnant of a people *thingāneh*, a term expressing the greatest contempt. It is, however, remarkable, that in Arab-countries this designation is altogether unknown. There are a great number of gipsies in Syria, where they are known by the Arabic name, *Nuwar*, and are looked upon as an Arab tribe of the Beni-Nuwar. In Egypt they are called *Ghagar*. The name Nuwār is also understood in Egypt; but in Upper Egypt

* Translated from "Ägypten; Forschungen über Land und Volk während eines Zehnjährigen Aufenthalts, von Alfred von Kremer, Leipzig, 1863." Egypt; Exploration of the Country, and Studies of its Inhabitants, during a Ten Years' Residence.

only gipsies travelling about as goldsmiths are called Nuwār, pronounced *Nauer*.

As, excepting a short notice in Lane's work, nothing has been published concerning the gipsies in Egypt, the following account may be acceptable.

The Ghagar form in Egypt a numerous tribe, travelling through the country as tinkers, rope dancers, monkey showmen, and snake charmers (*Psyllos* of Herodotus.) The women tell fortunes, are dancers and prostitutes. Information has, however, reached me, from all parts, that besides trading in asses, horses, and camels, nearly the whole small trade in Egypt is in the hands of gipsy pedlars (*Bad'dāa'h*). They make their purchases in Cairo, where they are well known to the native merchants; they frequent the large fairs of Tanta held twice a year, and also the great fair held on the anniversary of the holy Shilk'ani (*Mauled-esh-Shilk'ani*) in the month of May. They earn so much money that rich Ghagars are by no means rare. Whilst one portion of the tribe are traders, another portion live in Cairo as snake catchers (*H'āwi**), and as snake-devouring dervishes (*Rifāijeh*); and many a traveller who has seen their disgusting performances in Cairo was not aware that the apparent Mohammeden dervish was a gipsy in disguise. It is this class which frequently come in contact with the European traveller and do good service to the naturalist, for they always have for sale snakes, with or without the poison fangs, jackals, wolves, lizards, etc. The dexterity with which these people discover and catch the snakes is really surprising. Armed simply with a palm stick the operator gives a few knocks on the walls and floors, plays a short tune on his reed pipe, and the snakes make their appearance, which is explained by the fact that there are in most of the old houses of Cairo many snakes, most of which are, however, quite harmless. The inhabitants are, nevertheless, in great fear of them, and no person dares to sleep in a room after the *Hawi* had declared it to be haunted by a snake.

Ghagar is the collective name designating all gipsies. According to their own account they consist of different tribes; but all of them describe themselves as genuine Arabs, and are very proud of their pure Arabic descent. They pretend to have emigrated from West Africa, but are unable to determine the period. The following circumstance speaks in favour of their assertion, namely, that they all belong to the religious sect of the *Malikites*, which is in the whole of North-West Africa the chief of the four orthodox sects of Islamism.

* Lane, generally so well informed, erroneously asserts that *hawi* means jugglers generally. The true meaning of the word is "snake catchers", from *h'ajjeh*, snake.

All of them lead a nomadic life, and provide themselves with licenses given by the police or by the Sheik of the Guild of Rifāi-dervishes.

The tribe called *Ghawazi* is in Egypt the most numerous. This tribe has in all the larger towns and villages female representatives, well versed in all arts of seduction, who become dangerous by their beauty. They call themselves *Beramikeh*, *i. e.*, Bermekides, and try to trace their origin back to the famous family of the Barmecides, which, after having filled the highest offices in the Chalifate was destroyed by Chalif Harun-al Rashid.

They are proud at the same time of their Bedouin origin, and lead, in fact, a Bedouin life, sleeping in tents and attending fairs. All Ghazieh girls are professional dancers, and all the old women fortune-tellers. They rarely marry before they have saved a small fortune, and frequently select a slave for a husband. The husband of a Ghazy is thus little more than her servant; he plays on the flute or strikes the drum whilst she dances; he even introduces to her new acquaintances. There are, however, instances of Ghazies marrying village sheiks, in which cases their conjugal fidelity is as strict as their former life was loose.

The Ghawazi speak the general gipsy dialect used by all the other tribes. The gipsies of Upper Egypt call themselves *Saaideh*, *i. e.*, people of Said (Upper Egypt). They travel through the country as horse- and ass-dealers, pedlars, and fortune-tellers. Their features are altogether Asiatic; colour, tawny; eyes, black and piercing; hair, black and straight. The women tattoo themselves in blue on the lips, hands, and the breast; they wear large brass earrings and necklets of blue and red beads. They prophesy by means of shells which they carry in a leather bag over the shoulder, and according to the grouping of the shells cast up by the hand they foretell the future. When the Nile begins to rise in the summer they are frequently met with in the streets of Cairo, where they are easily recognised by their leather knapsack and by their cries "nibejjon-ez-zein", *i. e.*, "we prophesy fine and good things", or also "nidmor-el-ghaib", *i. e.*, "we find out lost things". There is in Cairo a great number of such fortune-tellers who speculate on the credulity of the Cairo women. These fortune-telling gipsies live in a building called *Hōsh Bardak*, situated under the citadel and opposite the mosque of Sultan Hassan. Their competitors are the Maghrebin soothsayers and sorcerers from the interior of Africa, specially from Darfur. They may be seen sitting on the roadsides prophesying from cards or sand. Prophesying from sand, called *Ilm-er-raml*, is very old in the east, and must be known to the reader of the Arabian Nights.

The names of other tribes are *Haleb*, or also *Shahaini* and *Ta'ar*.

The women are generally fortune-tellers, the males belonging to the last tribe generally farriers or tinkers, are also named *Awadat* or *Mua'merratijjeh*. There are also many smiths among the Ghagar, who make the brass rings worn round the neck, in the ears, and in the nose. The numerous class who exhibit trained monkeys, chiefly on the Ezbekijjeh in Cairo, belong almost exclusively to the gipsy tribe, they are here called *Kurudati* (from *kird*, monkey). The athletes and gymnasts, called *Bahlawan*, who exhibit in the larger towns, at fairs and festivals, also belong to the gipsy tribe. They come to Cairo in large numbers at the festival *Id-ed-d'ay'ijjeh*.

All these subdivisions of the Egyptian gipsies speak the same thievish slang language, which they call *Sim*. Nothing certain is known concerning the origin of this word. According to the opinion of the natives *Sim* means something secret or mysterious. *Sim* is also called a spurious gilt wire imported from Austria. The *Bahlawan* tribe alone are said to speak another language. I was, however, unable to procure any evidence to that effect, nor does it seem to be well founded.

The following little vocabulary may perhaps give some idea of the language. I have collected it from several individuals, but my chief authority was Sheikh Mohammed Merwān in Cairo, who gave himself the pompous title: "Sheikh of all the snake-catchers of Egypt." I moreover consulted several gipsies from Upper Egypt, who seem to speak a somewhat different dialect.

Water, <i>mōye</i> , <i>himbe</i> , S.*	Hell, <i>ma-anwāra</i> , i.e. fire
Bread, <i>shenāb</i> , <i>bishle</i> , S.	Kindle the fire, <i>add-el-ma-anwāra</i>
Father, <i>a'rūb</i> ; my father, <i>arūbi</i> ; also	Date, <i>ma-ahli</i> , <i>mahalli</i> , S.
<i>āb</i> , my father, <i>abambra</i>	Gold, <i>el-ma-asfar</i> , <i>midhābesh</i> , S.
Mother, <i>kodde</i> ; my mother, <i>koddeti</i> ;	Silver, <i>bitug</i>
pl. <i>kodaid</i> . Signifies also woman,	Iron, <i>hadiddāsh</i>
wife.	Corn, <i>duhubi</i> , <i>duhuba</i> , S.
Brother, <i>sem'</i> or <i>chawidsh</i> ; my brother,	Hunter, <i>dabāi bi</i>
<i>sem'i</i> ; thy brother, <i>semak</i> or	Sorcerer, <i>tur'asi</i>
<i>chawidshak</i>	Stone, <i>hoggēr</i>
Sister, <i>sem'ah</i> or <i>ucht</i> ; my sister, <i>sem'</i>	Land, region, <i>anta</i> , pl. <i>anāti</i>
<i>atak</i> or <i>uctamrak</i> . <i>Sem'ah</i> means	Uncle, <i>a'rūb</i>
generally girl, and <i>sem</i> boy. <i>Sem'ah</i>	Aunt, <i>a'rābeh</i>
<i>behtleh</i> , a fine girl.	Milk, <i>raghwān</i> , <i>hirwān</i> , S.
Night, <i>ghalmāz</i>	Omen, <i>musannin</i> , <i>mubsalshe</i> , S.
Horse, <i>soh'lig</i> , <i>husdnāish</i> , S.	Cheese, <i>el-mehartēmeh</i> , <i>maharteme</i> , S.
Ass, <i>zuwell</i>	Sour milk, <i>atreshent</i> , <i>mishsh</i>
Camel, <i>hantif</i>	Durrah, Turkish corn, <i>handawil</i> , <i>mu-</i>
Buffalo, <i>en-naffāchah</i>	<i>gaddertjeh</i> , S.
Lamb, <i>mitzghal</i> , <i>mingaesh</i> , S., <i>churraf</i> , S.	Beans, <i>buhus</i>
Tree, <i>chudruman</i> , <i>shagarāh</i> , S.	Dog, <i>sanno</i>
Flesh, <i>adwāneh</i> , <i>mah'zusah</i> , S.	Wolf, <i>dibaish</i>
Fowl, <i>en-nebbāshesh</i>	Knife, <i>el chāsah</i>
Fat, <i>barāah</i>	Foot, <i>darrāgeh</i> , <i>er-raghaleh</i> , S., <i>mumesh</i>
Spirit, angel, devil, <i>ashām</i>	<i>shajāt</i> , S.

* The words furnished by the Sakideh are marked S.

Head, <i>kamāchah, dumachah, S.</i>	River, <i>mistābhar, S.</i>
Eye, <i>bas'sā'eh, huz' z'arah, S.</i>	Palm, <i>minchaleh, S.</i>
Thief, <i>damani</i>	Tent, <i>el mīchcāsheshe, S.</i>
Hand, <i>shammāleh</i> (signifies also five)	Wood, <i>machshabesh, S.</i>
North, <i>baharāish</i>	S:raw, <i>tibnāish, S.</i>
South, <i>kiblāish</i>	Christ, <i>el-annāwi</i>
East, <i>sharkāish</i>	Egg, <i>mugah'rada, S.</i>
West, <i>gharbāish</i>	Fire, <i>el-mugānwara, S.</i>
Coffee, <i>magāwāde, S.</i>	Light the fire, <i>walla'ish-el-mugānwara</i>
Garment, <i>sarme, S.</i>	Eating, <i>esh-shimleh</i>
Shoe, <i>merkubāish</i>	Sack, <i>migrabesh, S.</i>
Nose, <i>zenānāish, S.</i>	Arm, <i>el, kemmasheh, S.</i>
Ear, <i>widn; thine ear, widnam rak, S.,</i> or <i>muddānshe, S.</i>	My hand aches, <i>kem-mashtu waga'ani</i>
Cow, <i>mubgārshe, S.</i>	Hair, <i>sha'raish, S.</i>
Ox, <i>mutcāresh, S.</i>	Tobacco, <i>tiftaf, S.</i>
	Mountain, <i>migbālesh, S.</i>

ADJECTIVES.

Ugly, *shalof*. Beautiful, *behil*. A pretty girl, *se'mah behileh*.

NUMBERS.

1, <i>mach</i>	6, <i>sālet, S.</i>
2, <i>machein</i>	7, <i>sābi, S.</i>
3, <i>tulit, S.,</i> or <i>telat machāt</i>	8, <i>tāmin, S.</i>
4, <i>rābi, S.,</i> or <i>arba'ah machāt</i>	9, <i>tusa, S.</i>
5, <i>chāmīs</i>	10, <i>ushir, S.</i>

VERBS.

Go, <i>fell; I went, felleit</i>	He sleeps, <i>jīdmuch; I slept, dammacht</i>
Come, <i>e'atib</i>	He rides, <i>jita'wan</i>
Say, <i>agmu; I said, agēmtu</i>	He gives, <i>jikif; he gave, kaf</i>
Sit, <i>watib</i>	He steals, <i>jiknīsh; he stole, kanash</i>
Strike, <i>ih'big; he struck, habag; hai</i> <i>jih'g, he still strikes; he struck,</i> <i>habash, S.</i>	He cooks, <i>jitabbig; he cooked, tabbag</i>
We ate, <i>raceheina</i> or <i>shamalna</i>	He slaughters, <i>jitni; he slaughtered,</i> <i>tena</i>
We drank, <i>mawwagna; I drank, maw-</i> <i>wagt or hambatt, S.</i>	He saw, <i>haseb</i>
He cut, <i>shaffar</i>	He laughs, <i>biarra'</i>
He called, <i>nabbāt'</i>	Come, <i>igdi, S.; he came, gādat</i>
He died, <i>entena</i>	Sit, <i>ukriz</i>
He killed, <i>tena; he kills, jitni</i>	Rise, <i>atib</i>
	He married, <i>etkaddad</i>

The preceding vocabulary throws some light on the character of this language. There can be no doubt we have here to do with a thievish slang dialect, made use of by the gipsies in order not to be understood by strangers. The circumstance that amongst themselves they speak Arabic, and *Sim* only in the presence of strangers, is decisive on this point. Some terms are very expressive; for instance, *shammāleh*, the hand, from the Arab root, "*shamala*", to grasp; or *bas's'as'eh*, the eye, from the root "*bas's'a*", to spy (the word "eye" in Arabic is of feminine gender). All grammatical forms are, with exception of the suffixes, which seem not quite clear, perfectly Arabic. There occur, however, a number of words evidently of foreign origin, probably imported from the West, whence the gipsies pretend to have migrated to Egypt. Such words are: *zuwell*, the

ass; *ashum*, spirit; *bitug*, silver or money; *atreshent*, sour milk, the last word having a Coptic sound; *sanno*, dog; *handawil*, Turkish maize, a word made also use of by the Egyptian fellahs. Also *hantif*, the camel; *baruah*, fat; *buhus*, beans; *damani*, thief, all these are foreign words, though they sound like Arabic words.

Possibly, though I have no means of ascertaining this, these words may be derived from the Berber language. It is, however, surprising, that among the verbs there are some quoted in old Arabic dictionaries as genuine Arabic, though they have now become obsolete. The word *habag*, he struck, is already inserted in Feiruzabadi's large dictionary, *Kāmus*; *shaffara*, he cut, is manifestly allied to the old Arabic *shufrah*, the knife; *nabbata*, he cried, is not improbably connected with the old generic name *nabat* (plural *anbat*), by which the Arabs designate all other people speaking a different language, whom the Greeks called "barbarians". It is also remarkable that the word *watib*, to sit, which according to the Arabic lexicographers has the same signification in the old Arabic dialect of the Himjares, whilst *utib* and *etutib* correspond in signification to the modern Arabic *watab* to rise up.

I confine myself to note these philological facts without drawing from them any hazardous inferences, for which the material at hand is scarcely sufficient. The old original words seem to become obsolete, and are replaced, according to a conventional scheme, by an Arabic slang. Thus the Egyptian gipsies have probably forgotten the ancient names for colours, sun, moon, earth, fire, etc., and know only their Arab denominations

ON THE IDEAS OF SPECIES AND RACE APPLIED TO MAN AND HUMAN SOCIETY: ON ANTHROPOLOGY AND ETHNOLOGY.*

By M. COURNOT.

IN all ages, men have busied themselves with the question of knowing how far they ought to consider themselves as relations or strangers to each other. For a long time, the sentiment of the relationship and the consanguinity of all those who speak the same language, and observe the same ceremonies and customs, acted with great energy. On the other hand, the disgust and aversion for foreign

* *Traité de l'Enchaînement des Idées Fondamentales dans les Sciences et dans l'Histoire*, Paris, 1861, tom. ii, c. ii, p. 31.

populations, reputed barbarous, because they did not speak the same language,—impious, because they did not adore the same gods,—and coarse, because they had not the same manners,—inspired a sort of repugnance for every idea of relationship or consanguinity with them. Indigenous cosmogonies did not trouble themselves with the origin of foreigners, or did so only to explain, after their own fashion, the stamp of reprobation that they bore. If, in accordance with the myth, these foreigners were relations in a coarse and animal sense, at all events they had ceased to be of the family; they were relations disinherited and disavowed. Religious institutions,—in the ancient way in which they were developed and organised according to the ideas of purity and impurity,—only served to strengthen the idea of an original separation among peoples, and even among castes, who spoke the same language, but who found themselves, if not fused together, at least so put into juxtaposition and so combined as to form one and the same people.

Later, another class of religious institutions, whose principle is essentially different, and which we may call *proselytising religions*, produced a totally different effect. The same faith, and the expectation of a common destiny, tended to reunite those who had been separated from each other by the dissimilarity of their coarse superstitions, or the heterogeneousness of religious systems of deeper signification. This end, however, they could not obtain without insisting upon the idea of an original brotherhood between men, expressed in a manner to make it attractive and popular. Besides this, and independently of all religious influence, it is the property of a progressive civilisation to disentangle the bonds of that complete union which depends upon the conformity of language, manners, and institutions; and to extend in every way the prevalence of everything which is universal in human nature over that which is peculiar to separate times, places, classes, and nationalities. When once society has entered on this phase, men find themselves compelled more and more to put the idea of humanity above the idea of every particular nationality, and even above the idea of every religious confraternity. In modern language this is called philanthropy, and philanthropy is not a thing which ought to be ridiculed, notwithstanding the way it has been abused.

I have shown the reasons why we cannot raise, even with the utmost scientific impartiality, the famous question of the unity of the human species, or the principle of the diversity of the races of man, without awakening religious and philanthropic susceptibility. Not that so much importance exactly is attached to the scientific formula of the unity of the species, as because there is mentally

associated with it another idea, which can be easily comprehended even by those most destitute of scientific education; namely, the idea of the descent from a single pair. And yet, in the kind of facts with which natural science deals, there is no more reason to admit, in the case of the human species, the hypothesis of the descent from a single pair, than to admit it in the case of every other living species. Can all the oaks of the same species have issued from the same acorn? or all the bees from the same queen bee? Must we say so of all the innumerable species of plants and animals, and for each of the creations which distinguish the geological epochs? On the other hand, it is very bad policy for those (in the interest of a special, scientific, or philosophic solution) who make themselves the champions of science or philosophy, to demand from the guardians of tradition immediate concessions, when science and philosophy are still so little sure of their ways of action and their conclusions.

Some reconciliation has been arrived at on astronomical and geological questions, where philanthropy had no business, and which, besides, did not affect, in the same degree, religious tradition. The same reconciliation will, I have no doubt, take place also with regard to anthropology and ethnology; but it is in the nature of things that it should be later. Let us, then, discuss in our turn,—since we are obliged to, by our subject,—but discuss with all the liberty of thought these delicate questions. Let us separate what the author has himself separated so visibly, the natural and the supernatural; let us venerate what ought to be venerated; and let us not run the chance of profaning it by mixing it up with our scientific discussions.

If the aptitude of forming hybrid unions which possess a fecundity, which can be transmitted for an infinite number of generations, be taken as the definition of the specific unity of races, the question of the unity of the human races would be settled by one notorious fact,—that is, by the fecundity of the unions of such disparate races as the European with the Negro, Hottentot, and American. There remains an accessory question, but only of much interest from a physiological point of view,—that of determining if the hybrid race can preserve itself indefinitely with its medial characters; or if, in the absence of all new infusion of the blood of one of the original races, the products of the hybrids would finish by reverting to one of the two original types. Observations are said to have been made in both directions. Certainly, if it were proved that the hybrid type could not perpetuate itself indefinitely in spite of the formation of offspring, and in spite of the indefinite persistence of the prolific power, during successive generations, that would be a sign that nature had marked, by the most profound indications,

if not the separation, at all events the distinction of human races. Still, the mere fact of the aptitude for indefinite reproduction would be sufficient to establish, between all human races, a greater approximation than what exists between the nearest species of animals, which can by their unions only give birth to offspring of a limited fecundity. This would be at once a sufficient physical foundation for the sacred idea of humanity, such as would tend to increase the influence of those religious and moral opinions which are most worthy of our attention.

In addition to this strong proof of the close alliance of human races, which becomes a decisive proof of specific unity,—if we give to specific unity the only precise or logical definition which can be given to it,—the partisans of unity add an argument of equal force. They demand of their adversaries that they ought to come to some agreement on the distinct enumeration and the precise characteristics of the races which are to become the true unities of the naturalist, in place of the great unity which they uphold. And as all the labours of more than a century have not resulted either in a persistent enumeration, or in any fixed characteristic, as some unite what others separate, and separate what others unite, they have concluded, with great appearance of reason, that the races of man cannot be divided into a formal enumeration, or by fixed characteristics, which, say they, allow us only the idea of a single species to fall back upon.

Finally, encouraged by success they go still farther, and say, —the differences between one race and the other are of the same sort as those which are met with between individuals of the same race, and those which are produced by the accidents of generation, or the prolonged changes induced by climatic influences, and above all, by the mode of life. They are absolutely comparable to those which education and cultivation produce in our domestic races. We only reject the idea of a transformation of the one into the other, because our attention is struck by the contrast of the two extremes; for example, of the European and the Negro. It is true that the Negro, transplanted to St. Petersburg, remains a Negro, if consumption and pleurisy do not kill him; and the European transplanted into tropical regions, remains white there, if he does not die of cholera or yellow fever. But let us suppose that the negro population, natives of Guinea, were to make a long march to the Soudan, then to the foot of the Atlas, then to the Tell, then into Spain; or that, inversely, the white race were to be advanced, by long stages, from the temperate regions to the equator, modifying progressively also its mode of life: then the hypothesis of progressive transmuta-

tion—remaining an hypothesis all the same—would have nothing in it to shock common sense; so that we have good reason to hold by it so long as its impossibility cannot be actually demonstrated to us.

It is here that, for our own proper part, we find ourselves obliged to abandon the partisans of this hypothesis. There is an easy means of proving *à posteriori* the identity of the artificial races which man has created. Abandon them to themselves, in which case they all perish, or return rapidly to a single type, which is everywhere the same, and which must needs be the primitive type of the species. If, perchance, the type to which all return is different in one place from what it is in another, slight differences only denote a natural and local influence on the primitive type, completely independent of the artificial processes which have brought about the domestic races. Nothing analogous takes place in the human races. Certain differences between one race and another, whatever was the original cause, have been consolidated to such a point that there exists now no means of effecting the transmutation of one race into another. On all parts of the globe—in consequence of migrations, which are certainly very ancient, or of primordial causes which are entirely concealed—we find numerous examples of very distinct races who have lived side by side for a very long period, in spite of the identity of their exterior conditions. The differences in the mode of life between equally uncultivated populations, cannot explain the physical and psychological differences which present themselves; they are consequences, not causes. In spite of the influence of a civilisation of many thousands of years, and the prodigious changes in the mode of life which it must have brought with it, the lineaments of the Chinese still testify to the ties of relationship between other peoples which have not received the same cultivation. The lineaments of the ancient Egyptians recall the same African type, which is to be seen in tribes which remained savage. Neither the Chinese nor the Egyptian have approximated to the European type during their long civilisation, so far as to lose the trace of the original differences which separated them. It is true, one or two instances are given of such transmutations of type. The Magyars and Osmanlis have fixed themselves within the area of European civilisation, and are said to have acquired the European type, and to testify by their language alone their original affinity with the Finnish or Turkish races. But these instances are very doubtful; precisely because the circumstances of the admission, and other historical details, allow us to explain the same result by an infusion of foreign blood, very compatible with a permanence of idiom. Is it not the fact, that we talk a mixture of the Latin language without having a drop of Latin

blood in our veins? No comparison can be established between these instances, so doubtful, and so difficult to collect, and the clear and striking ones which present themselves in support of the opposite thesis.

As to the circumstance, that we find amongst the peoples of every race individual deviations from the type of the race (no matter whether physical or psychological), stretched to such a point as to bring together individuals belonging to the most dissimilar races; that proves nothing against the original distinction of races, any more than cases of monstrosity, properly so called, which introduce into the middle of a species the type of a neighbouring species, or even sometimes the type of a very distant species, prove anything against the original distinction of species. It will easily be understood that the relationship between human races being much more close than the relationship between species (whether congeners or not), that which passes, with reason, in the one case for a monstrosity, generally incompatible with the continuance of life in the individual, may easily, in the other case, be only a rarity, perfectly compatible with all the conditions of existence.

I shall have no hesitation in admitting that there are in the human family different races, whose differences cannot be assimilated to those which we create by education and culture in the midst of our cultivated species, but which are, on the contrary, permanent, native, and original, in the sense that they cannot be created by art; and that nature creates no more like them in the actual state of things, although she must necessarily have had (as all the world must needs admit) the means of producing them, and of causing one type to differ from another under different circumstances. So far as they are native and original in the sense which I am going to explain, the like differences between human races—which cannot be compared to the differences between the domestic races—may be compared to specific differences, although they are not of the same importance, and are, probably, not so old. In fact, if the human species has been the last, or one of the last, to appear amongst the superior species, as there is so much reason for believing, it would seem very consonant to the general order that the same causes which, in more ancient times, produced specific distinctions, only produced, later in the day, distinctions into permanent races, before arriving at the final order in which it would seem that not even permanent races are produced; although it is still possible to vary artificially the circumstances and conditions so as to produce deviations of types which would imitate the natural and original differences of another age, and even specific differences, if they were not entirely destitute of the attribute of permanence.

In this way, from the moment that the idea of specific unity is disengaged from the idea of the descent from a single pair, every difficulty vanishes. There is no longer any trouble in comprehending how, at the epoch of the consolidation of the autochthonous races, those characters might have shaded themselves over a vast expanse of country, of which the different points were submitted to analogous but not identical influences, in such a way that at the present day it is impossible to arrive at a decisive characteristic, or a precise enumeration which shall be accepted by all the world. The singularity is much more than takes place in the species of animals and plants; and there is certainly room for asking how the characteristic of species has been able to take the fixity we see in it, in the hypothesis now generally accepted, that the evolution of the same species took place on many points at the same time. On the contrary, whatever may have been the mysterious proceeding which Nature followed in the first evolution of living organisms, she would only have been consistent with herself, if she has ceased to admit, in the case of man, who has come after so many other species, distinctions as deep-seated as specific distinctions,—a fact proved by the criterion of the indefinite prolificacy of unions,—and if at the same time she has given up that fixity of characteristic and purpose, which is the companion of specific distinction, in beings of a less exalted organisation, and of more ancient origin.

The existing geographical distribution of the races of man does not seem (at least at first sight) connected in a necessary way either with climatic influences, or with the distribution or extension, or with the distances of the great continents, and the insular portions of the habitable globe, in the actual state of things. The most distinct races can and do inhabit, in contact one with the other, the same countries of the globe. The white race preserves all its features in North America; the black race, transported to the Antilles or the Brazils, does so likewise; and there is no reason why the American race should not live and perpetuate itself in Europe or in Africa. China can be inhabited by white men like those of Europe, and Europe inhabited by yellow men like the Chinese. We find at the eastern extremities of Asia, in the large adjoining islands, and even in the furthest archipelagoes of the great ocean, black races, inferior, autochthonous, that is longer established, in contact, at this time, with other races which have oppressed them, and trampled them under foot. How is it that these black races, scattered at great distances over a considerable portion of the southern hemisphere, have been able to occupy the islands alone, and not to gain the American continent, or at all events, not to multiply there? How do they come

to occupy those countries which are nearest the antarctic pole, whilst close to the equator, in Polynesia, we find a type superior to the Papuan, the Australian, and the Negro of Guinea? We can no more give an answer to most of these questions of origin, by reasons deduced from the existing state of things, than to most of the questions which concern the origin and the geographical distribution of the species of plants and animals. In every case, we must admit that the races of men, once constituted in the condition of autochthony, have enjoyed a power of extension and migration, differing in different races, but in general superior to that possessed by the species of plants and animals; so that we find collected on the same ground, and placed side by side, races which are distinguished by decisive characters, although in most cases there were but slight shades between them and their neighbours in their primitive indigenous condition.

Up to this point I have only noticed, whilst treating of the distinction and the origin of human races, those races whose formation is to be attributed to the sole and spontaneous action of nature, in conformity with the general plan to which even fortuitous accidents are subject, and which comprehends the totality of living species. But it would be strange, if the faculties peculiar to man, by which he withdraws himself in a certain measure from the empire of the general laws of nature, and which have the power of creating artificial varieties in the midst of domestic and cultivated species, which are hereditary without being permanent, should not also have the power to create analogues in the midst of the human species and the native races, permanent, inasmuch as their origin is of greater antiquity. In fact, it is quite sufficient for men to have formed separate societies, habitually hostile one to the other, between whom the differences of language, religion, manners, and mode of life, cause distinctions, engender antipathies, and put obstacles to sexual alliances; so that they can give birth to races comparable to those which are created artificially amongst the domestic species by the agency of mankind. Such races perish, not only by extermination, but also by the fusion or the dissemination of the surviving families in the bosom of another society. In the mixture between races, which are due to such an origin, the features are mingled in every way, and lost one in the other; whilst it is rather combination than mixture, in the cases of hybridity, between races naturally distinct. And in the same way that the hand of man is constantly necessary for the maintenance of the domestic race; so the persistent influence of the same social arrangements are necessary for the maintenance of hereditary varieties, or the races constituted by the effect of the grouping of men into castes or distinct societies.

I deduce from this idea a means of ascertaining the sense which ought to be attached, according to my notions, to the terms *anthropology* and *ethnology*. The use of these terms goes but a very little way back ; but the rapid progress of our modern sciences have very quickly extended their usage, without our having seen with sufficient clearness, or, at all events, without our having expressed with sufficient clearness, the distinctions to be observed in the application that is made of them. Anthropology is the natural history of man : consequently, everything that can be imputed in the constitution of the human species and its different branches, to the spontaneous action of natural forces,—which exercise over man the same mode of action as over other living species,—will necessarily come within the domain of anthropology.

Ethnology, on the other hand, will be occupied with all the accidental facts to which the circumstances of the grouping of men into distinct societies give birth, in conformity with the instincts of sociability, which otherwise spring from anthropology, so far as they make part of the common property of human nature, or as each of the primitive branches clothe themselves in special and characteristic forms. I shall then distinguish the two orders of the human races, or of the hereditary varieties in the human species, which have hitherto been called in question, and which sufficiently explain by their long confusion the entanglement of the subject, by qualifying the one as *anthropological* and the other as *ethnological varieties*.

Thus, let us compare an European with a Chinese, an American savage, a Negro, or an Hottentot ; and at the first glance, by one of those suggestions of good sense which science has no business to disdain, it will be plain at once that there are varieties of type which all the diversities or resemblance of rules and social institutions can never have the power to create or efface. They are of that order which we cannot reproduce by any factitious process, by any artificial experience, however prolonged it may be. We cannot find a sufficient explanation for them in the action of the elements and the surrounding media ; such at least as we find them to be in the existing world, and for a long succession of ages as is proved by the testimony of history and monuments. So that we are obliged to admit that the causes, whatever they may be, to which these characteristic differences must be imputed, must have already exercised, if not entirely exhausted, their action in times which history has no means of arriving at. On the other hand, when the question is of the characters by which the Arab, the Hellenian, the Celt, and the Saxon are contrasted, and many other races whose distinctive features seem to have had such a great influence on the series of historical events,

we feel easily enough that it is the business of history to explain, entirely or in part, how such races have been formed, perfected, become degenerate or extinct. We understand, also, that here the conclusions of the naturalist only fill an accessory part, for it is clear that they betray, by some perceptible varieties of organisation, contrasts which have a deeper origin, and which it is not impossible to explain historically, without departing from the conditions of the existing world, by the sole effects of the accidents which must have succeeded each other in the period of time allotted to the development of human societies.

To judge from the effect culture has had on our domestic species, we must expect to find diversities, which are to be imputed to ethnological influences, sometimes surpass in amplitude the native diversities, which are the business of anthropology, and the secret of which Nature has kept to herself. The two orders of hereditary varieties in the human species will therefore be distinguished; either by an instinctive appreciation which may sometimes be a little vague of the seal which Nature has impressed upon her works, or by the crucial observation of the fact of permanence. Thus, there is abundant proof that the races which inhabited the north of Europe in the time of Strabo, and who still inhabit it, are far from having preserved all the physical characters attributed to them by the ancients, and that they have been considerably modified in proportion as they have modified their mode of life on entering the paths of civilisation. We may observe, ourselves, in running through the countries of Europe, a great difference in this respect between the populations of the country and the towns. You may travel in a first class carriage in Germany, England, and France, almost without being aware of the change of country, if your companions think fit to keep silence; but if you look at the peasants who crowd round the station, you will soon see the populations are no more the same. On the other hand, can there be anything more curious in history than the persistence of the character so unanimously attributed to the Celtic race by all the writers of antiquity, which offers such a striking conformity with what all the world still says of the nations which have remained Celtic at bottom, spite of the infusion of foreign blood? Nevertheless these nations have passed, in the course of historic ages, through the most different phases of barbarism and civilisation. They have several times changed customs, laws, and religions. Some of them, a very rare thing, have forgotten their language, and adopted another offered to them by their governors or their priests. The ordinary signs to which people attach themselves are here found wanting. It is on the scene of history that we must study these people we are speaking

of, to understand that there is in their native organisation something to which one must attribute that moral temperament, that indefinable association of qualities and defects which is called by the particular name of *character*, in races as in individuals; which is not changed by education and mode of life; which is preserved in spite of the alteration or annihilation of the passions, which the individual generally carries along with him from the cradle to the tomb, and which, whilst it seems to belong to what is the most difficult to lay hold of, and most transitory in the modifications of the organism, has not the less the power of persisting longer than traits apparently more fundamental, or at all events more perceptible.

Besides, I do not mean to assert that there exists between these two orders of hereditary varieties, which we contrast with each other, one of those rigid demarcations which Nature admits but rarely, and as it were in derogation of her usual processes. On the one hand it is impossible to imagine man as living on the earth without a certain development of his social instinct, and without being influenced to a certain extent by his social surroundings. And on the other hand we must not lose sight of the fact, that if the grouping into tribes is of itself alone a cause of the constitution of hereditary varieties, the pre-existence of hereditary varieties of another order must have been in the earliest times and have remained ever since the principal cause of the alliances of families and of their being grouped into tribes. Now at what time did the epoch of primordial and permanent varieties close? No one can say, and it would be unreasonable to allow that that termination took place at any precise moment of time. Therefore, one must pay attention to the degrees of persistence and the shades we find in the emphasis of the differential characters. According to all appearance, the more ancient the separation is, the more marked and the more persistent are the characteristic differences; and the more also the causes of separation, whatever they may be, seem to have participated in the nature of those to which we must impute the construction of the hereditary varieties of the first order; of those, the determination of which lies in the province of the habitual studies of the naturalist, as being a consequence, and an echo of causes which long ago determined the differentiation of species.

Some ethnological varieties have sprung up and perished in the blaze, so to speak, of the torch of history; others go back to the times which have preceded the historical life of nations. Nothing is more interesting, at one epoch of Grecian history, than the contrast of the Ionian and Dorian races. The contrast is shown everywhere; in the language, the literature and the arts, the manners and

political institutions; and when we read in Thucydides the account of their conflicts, we seem to be dealing with insurmountable antipathies, because they are connected with indelible differences. Nevertheless we see, from the poems of Homer, that in his time they were far from attaching the same importance to the distinction of Dorians and Ionians; and a little time after Thucydides, the Greek populations were welded together in such a way as to leave very little trace of those distinctions of race and idiom which played so considerable a part at the epoch of the great historian. Much later history has enabled us to be present at the formation of an Anglo-Saxon race, victor and vanquished in turn, then recovering with its autonomy a new power of expansion and conquest, yet preserving through all its different phases a peculiar stamp which prevents us from confounding it with the other fractions of the same race, who have kept their continental habitat, and have not gone through the same career. Finally, in our own time we begin to perceive that the Anglo-American does not exactly resemble the Anglo-Saxon, who has remained on the opposite coast of the Atlantic, and no doubt the course of events and of centuries will produce the greatest possible diversities between the two severed branches of one family. Here, then, are examples of ethnological varieties and races of the second order, which branch out in the course of historical development and under the dominion of historical events.

Other hereditary distinctions, superior to these in consistence and durability, although less consistent than those which are independent of the social surroundings, have certainly preceded the commencement of history, properly so called. It is to the times which have preceded, not only the history that we possess, but all possible history, that we must refer the action of causes which have so sharply separated (very much more by psychological and moral characteristics than by the physical characteristics on which climates and mode of life have the principal influence) the Semitic family from the Indo-European, and also those which have effected in the bosom of this last family the separation of the Pelagic, Celtic, Germanic, and Slavonic branches. We must not be surprised if the races created by a concurrence of causes which are historically known to us, do not display themselves with characters so pronounced and pure as those which belong to races of a pre-historic origin. It would only be conformable to the general order if, after the mixture of races of pre-historic origin (even though of ethnological origin in the sense explained above), and after the confusion of their idioms, there ceased to spring from such a mixture and such a confusion, new types, comparable for the consistence and precision of their characteristics to types which have

been spared by time, or to those which have perished, and whose remains have furnished the elements of a more recent and more imperfect formation.

It will easily be understood that the more of depth and consistence which are lost to the distinctive characteristics of races, the more difficult it becomes to determine them by observations made on individuals, compared with those which serve for the naturalist to establish the characteristic of species.

But that which is not manifested in a manner sufficiently precise and constant in individuals, may be seen very clearly when one tribe is compared to others. Characteristic differences, even of the same sort as those which have to do with physical and palpable things, may thus be put in evidence, which they could not be without the assistance which in that way the ethnologist lends to the naturalist. Besides, what interests us in the characteristics of human races of the second order, is not so much the physical characters which are appreciated by the senses, as the moral characters, the instincts, and the intellectual aptitudes, which are probably connected with modifications of the organism, which perhaps more exquisite perceptions and a more delicate anatomy will succeed in putting in evidence, without, after all, our getting any more insight into the mysterious bond which attaches the one to the other. Now all this most important part of the characteristic of races, which owes its origin or its development to the influences of social life, can only be known by ethnological observation: so that ethnology is the indispensable auxiliary of anthropology in the establishment or complement of the characteristics of races, even of those which might, if necessary, be clearly distinguished one from the other, independently of ethnological observations.

History renders services of the same kind to ethnology, and consequently (at all events indirectly) to anthropology. For there may be and there are gradations, such that their existence, or at least their importance, escapes the processes of ethnological investigation; whilst history, by bringing into relief, during a long series of centuries, certain peculiarities of the genius and the moral temperament of a race summoned to live in the light of history, comes to the assistance of the ethnologist and the naturalist, and acts towards them in some way like a new re-agent, more delicate and more sensible, and adapted to disclose varieties of type and organisation, which it would be difficult, and very probably actually impossible, to catch in any other way. In this sense history is like statistics, a method of manifesting by average and general results, a constant influence which is found screened in each individual case,

or in each situation taken by itself, by the particular circumstances which complicate it.

And if history, in this way of looking at it, must yield to statistics in precision, it agrees better, by its picturesque and animated forms, with the attractions of living Nature.

SLAVERY.

BY JAMES REDDIE, Esq., F.A.S.L.

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THESE can scarcely be conceived a more delicate or painful subject for impartial consideration and discussion than slavery. Nothing can be more easily disposed of, if we shut our eyes to all that we know of the world's history, to the facts of nature around us and the whole experience of the present generation, and start off with the indefinite axiom, that "all men are born equal", which we assume to be undeniable, and make the foundation of a mere Utopia. But the axiom is not true; and, if true, it would not settle the question. There is no such equality among those born in the same country, or even in the same family. Still less does it exist among the diverse races of mankind. If ever true, it is not true now; and, if ever true, those who say so have then to account for its non-continuance, and the development of humanity into something so totally different. They have also to justify to the world their attempt to reverse what has thus been the natural course of human progress. It is clear that to alter or reform the world and oppose its natural tendencies, they must rest upon some higher principle. But even if men were born equal, this would be of little consequence if they do not remain so. And the fact is, this so-called "axiom", in as far as it is not a truism, is utterly false or meaningless. Except that all men are born *equally men*, the saying is untrue; and when we consider the degradation of some of the *genus homo*, we instinctively feel that to make such a statement is to convey but a questionable appreciation of all that manhood implies.

We may, nevertheless, feel and speak thus, and yet also hesitate to become the advocates or apologists for the *right* of "whatever is", including the right of slavery. At the best we may be willing to concede that it can only be tolerated as a necessary evil, like many other evil things we should be glad to see extirpated from the world, if we only saw how to do it, without the creation of other evils as a consequence. If the mind of England has arrived in any degree at such a hesitating state of balance upon the question of slavery, it is

not at any rate from the want of high principle, or of generous impulses, or from any coolness towards the true advancement of civilisation, or want of anxiety for the best interests of those under bondage. Her acts would belie all such accusations; and the terms in which she is appealed to from America might serve alone to refute them: "Great God," exclaims Mr. Conway,* "that this should be a question *in England* to day!" But that the writer knows, also, why it has become a question here, is evident from his subsequent language. He proceeds: "That it should be something to canvass whether her poets and preachers, her scholars and statesmen, can be surely counted upon as opposed to having men and women sold like cattle, and children torn from their mothers' breasts, by vile men for gain!"—And of course, in saying this, the writer knows perfectly well that if that were the whole question, just as he puts it sensationally, it would neither be a question in England nor America for a single moment. But he goes on, with equal injustice and indiscretion (that is, if he really is anxious to influence public opinion in England),—"Yet, blush as we may for our common race to say it, there is a very serious doubt as to *how many of the most influential men of England*, if asked to-day to unite in a protest against the existence of slavery for one moment longer, *would utter some cant or fatuity about the bad results of emancipation in the West Indies, or the unfitness of the slaves for freedom* (which is as about as wise as to talk of the unfitness of an invalid for health.)"

Now the author is perfectly right, that the questionable results of England's generous experiment of emancipating the slaves in her West India possessions must needs weigh with most influential Englishmen now—be they poets, statesmen, or philosophical students of human nature—in judging of the fitness or unfitness of the slaves for freedom. But to describe this as cant or fatuity is an insult and impertinence, which, notwithstanding the writer's vehemence, must cast doubt upon his sincerity. If he had the real compassion for human misery he professes, he could not have characterised an allusion to the miserable condition of the freed slaves in the West Indies as "cant". His use of the word "fatuity", in such a case, must be passed over as mere stump-oratory. England parted with twenty millions sterling, to purchase the freedom of the slaves in her colonies, willingly; she afterwards saw the colonists well nigh ruined, some entirely so, as a consequence, with many regrets; but even then she can scarcely be said to have repined at what she had done. She has since seen with dismay, that while the whites thus suffered loss,

* *Testimonies concerning Slavery.* By M. D. Conway, a native of Virginia. London: Chapman and Hall. 1864 (p. 138).

and the colonies themselves became deteriorated, the coloured population did not profit save in name, and that in far too many respects "bad results" have been the effects of emancipation. And yet, even now, she cannot be said to repent, though she feels grievously disappointed, that what was so well meant has turned out so very badly. She still lives in hope that the evils may be remedied. There are persons who can find grounds for such hope, and even some consolation, from the present state, social and moral, of the freed coloured people. But without doubt we have had a serious lesson; we are also daily learning more and more of the horrors of abject slavery in Africa itself; and we are assured on better authority than that of Mr. M. D. Conway, a native of Virginia, that the prejudices of race are so strong against the Negroes in the Northern States of America,* where they are free, that we may well doubt what the ultimate result would be, were a sudden emancipation of the slaves now enforced upon the South. The present war in America is deplorable enough; but a war of races would be worse and bloodier. It could end only in one of two things—extermination of the African race, or the bitter re-enactment of slavery.

In saying this, however, it is not to be understood as implying that slavery in the abstract involves any question of race. On the contrary we may assume—or if we are content with the actual facts of history we must be assured—that it was originally the result of Might conferring Right; and that the first slaves were families and tribes subdued by their nearest neighbours, of the same race, and probably, but a few years back, of the same family. The first slaves were mere prisoners of war; and it was part of international law—*i. e.*, a well understood practice by all peoples, perhaps throughout the world—that slavery must be the consequence of defeat. Civilisation has modified that state of things; because the proper organisation of governments and the consequent stability of political systems, have enabled society to get rid of such a necessity. It was only in later times, when wars became extended to more distant regions, that distinctly diverse races came face to face and enslaved one another. In the present day it is perfectly true the practical question is different and variously complicated; and in the interests of humanity and truth it is certainly of the greatest consequence that the subject should be impartially discussed. This can be better done here than in America; or at least we are in a better position for weighing calmly the arguments now advanced on either side, and clearing away the fallacies which have been imported into the controversy.

* Vide *The Wrong of Slavery and Right of Emancipation, etc.* By Robert Dale Owen. Philadelphia: 1864 (p. 211).

It must further be premised that in undertaking to review the question of slavery in America, no conclusion here arrived at, on the one side or the other, must be misconstrued as a condemnation of states or individuals who have made slavery really a blessing to the Negroes, or as a justification of any undue severity or harshness in the slave laws or customs of other states or families. I mean, there must be no question of philanthropy mixed up, to confuse the argument. True philanthropy, or goodwill to man, must be assumed as the motive of all that is said for or against the institution. What is really best for mankind as a whole,—what is most likely to conduce to the improvement and elevation of all the races,—these are the ultimate objects of the inquiry, whether it be regarded from a religious, scientific, or political point of view.

The religious argument. On both sides of the Atlantic, of course, when religion is appealed to, there is but one religion in question. In the name of no other religion than Christianity, could any pretence for an argument against slavery be found; and yet Christianity has never, like some other religions, made it a duty to offer freedom to converts. On the contrary, the founder of Christianity and his Apostles, systematically avoided all interference with human institutions. In government, “the powers that be”—the “rulers” whosoever—were recognised; in other words, the Christian system was not established as a kingdom of this world; but under it, republican governors, as well as monarchs, have their “right divine”, so long as they are in power. As regards the origin of such power, there is no divine institution:—*placuit gentibus*. The great mass of a people have no interest in the particular form of the government under which they live, if so be their own liberties and happiness are secured to them. But government is a sacred trust; and when it is abused, the rulers may be hurled from power, and the very form of the government may be violently changed for one less likely to tyrannize. At a certain stage of oppression it may be truly said that there is a “right divine of rebellion.” But it is obvious that while government and stability must be the rule, or civilisation would come to an end, revolutions ought (like convulsions in nature) to be rare and exceptional; and—for that is the point with which we are now concerned—it must be evident that were religion to interfere with the principles of human governments, it must either become anarchical and triumph at the point of the sword, or be itself extirpated.

Christianity, on the contrary, is a religion of peace, and rather teaches the endurance of evils than the redressing of wrongs. Not that that must be construed into a forfeiture of public rights, or an abject submission to political oppression, as a duty incumbent upon

men because they are Christians. Not at all. Men's civil and political rights remain unaffected by Christianity. Whatever rights we have by nature, whether as men, simply, or as members of a body politic, such rights continue ours under Christianity. It takes no such rights away; but neither does it confer them. St. Paul's teaching was, that, if freemen, we should glory in our freedom, and use it rightly; if bondmen, then be Christian bondmen, if we cannot obtain our freedom. The duties of masters and servants, of the bondmen and the free, are both very clearly laid down, without any enunciation of anti-slavery principles, in Scripture.

No doubt, inasmuch as Christianity teaches good will to man, and makes it our duty to do to others as we would be done by, the minds of individuals must be affected by these principles, in considering the question of the emancipation of slaves. But how affected? The precept, as we have already seen, can never have been intended to teach that we ought necessarily, as a duty, to alter the status of a slave, in order to carry out the precept. If we were convinced the slave was unfit for freedom, and that he would abuse his liberty, it would not be doing towards him as we would be should do to us, were we to make him free. The idle must be made to work, or they are not even entitled to eat, according to St. Paul. All who, from their position under Providence, have power over others, are bound to consider how they will use it; and thus are obliged to qualify (if it be so regarded) the application of the Christian precepts of love and good will to man. If not so qualified, the most grievous evils may result, not merely as regards aliens or slaves or vagabonds, but in the management of men's own families. We are not without experience of this in England. They probably know still more of it in America, and especially in the Northern States.

Again, in so far as Christianity is a moral system, men must be influenced in their opinions concerning slavery by the consideration whether the existence of such an institution tends to improve the morals of a people, or to demoralise them, judging from a Christian stand-point. Perhaps the very strongest arguments advanced by the abolitionists against slavery have been based upon such considerations. Unfortunately, however, they have been urged in a one-sided way: all the immoralities of the Northern States have been veiled, and those of the Southern States dwelt upon and exaggerated. We have also, no doubt, had the reverse of the shield, in like manner, presented to us. A writer, to whose treatise* I must hereafter refer, when we come to another branch of the subject, has put it forward as a distinct

* *Subgenation: the Theory of the Normal Relation of the Races: an Answer to Miscegenation.* New York: Bradburn. 1864.

proposition, "That a society founded on subgenation produces the highest type of mankind—the most consummate statesmen and generals, the highest type of womanhood, and the most exalted morality and virtue;" and he declares that "*in Fifth Avenue the number of violations of the seventh commandment is fearful;*" that "reliable information, derived from persons who had been behind the scenes, renders it certain that there are in Fifth Avenue more husbands untrue to their wives, and more wives faithless to their husbands, *than there are among a population of equal numbers in this country.*" It will be observed that this is not saying very much for the South; the acknowledgment and the accusation may both be regarded as "fearful." He goes on with his charges against the North: "The amount of infanticide is fearful. Pills to prevent maternity are in almost universal use, even in the families of clergymen. These things are unknown in the South, where subgenation has developed a higher order of womanhood. The care and comfort of her subgens give the Southern matron employment, devolve upon her responsibilities and duties, develop her character, and impart to her an ease, grace, and womanly dignity, which is, of itself, a citadel of virtue."

Making allowance for exaggerations and partiality on both sides, England would be glad to believe that neither the North nor the South is quite so bad as has thus been represented; but if the deplorable pictures which have been sent to us of moral deterioration across the Atlantic are really true, it is not the existence of slavery, nor its abolition, that alone can account for such a lamentable state of things. Besides, it is no business of ours to decide upon the facts involved in such recriminations. England has its own moral delinquencies to lament and to amend. It is true, we have often been told to look at America, and take a lesson in the manner of securing the greatest happiness to the greatest numbers. But this was several years ago; and even then we had begun to learn that all was not so very perfect in morals or social life across the Atlantic, as some of our political reformers would fain have had us to believe. Besides, after all, we are "an old country," and we have had some previous experience in Europe, and in England itself, of many failures to improve mankind, by methods too hastily boasted of as successful in America. Still, we are not in a mood to boast, that empires, monarchies, or other forms of constitutional government, are necessarily better than American institutions, for securing the increased happiness or purer morality of a people. We are all too conscious of our own imperfections, and feel too much how greatly we ourselves require improvement, to have the least inclination to boast of our own system of government as regards its moral effects. The revelations

of our own divorce court, the prevalence of illegitimacy, of infanticide, and of murder, and our difficulties in dealing with our criminals, give us far too serious occupation at present, to admit of our saying, even to America, "We thank God we are not so bad, after all, as you are." But even were morals better in America than in Europe, and better in the Federal than in the Confederate States, we must frankly tell the abolitionists, that that would have nothing to do with the right or wrong of slavery; or, at all events, not with *our* judging of the American quarrel upon such considerations. The influence of slavery upon the morality of a people can only be a question for the government of that people itself. Neither morality nor religion upon Christian principles can be imposed *ab extra* by others upon a nation, any more than upon individuals. The religious plea, therefore, even from a moral point of view, must be given up.

There only remains, therefore, as an element in the religious view of the case, what we find bearing on the question of slavery in the Scriptures of the Old Testament; and there we find that slavery was universal, precisely as we have it described in all other histories. It was not forbidden to the Jews; but the Mosaic laws contain various humane principles and precepts on the subject, which slave states would do well to carry out, as far as they can, in our own day. As no argument of a religious kind can be derived against slavery from the examples recorded in the Bible, it is probably for this reason, and as a last resort, that an argument half-religious and *quasi*-scientific has been constructed out of the scriptural account of the original unity of mankind, as descended from a single pair. But there are eminent authors and biblical scholars who potently deny that what the scriptures reveal on this subject has necessarily any such limited scope. Be that as it may, however, we may well decline to accept any such argument, as possessing the least value from a religious point of view, from the simple fact, that, while admitting most fully that the writers, both of the Old and New Testaments were unacquainted with any other than a monogenous theory, we do not find a syllable in any of their writings condemnatory of slavery. We, therefore, may now dismiss the religious arguments as utterly untenable and groundless, and come to the scientific view, based upon ethnological considerations.

The scientific view. It must be remembered that this is not a treatise on slavery in the abstract, but rather a review of that branch of the question now awaiting solution in America, and of the arguments that have been brought forward there on one side and the other. Had it not been so, I must frankly confess, that I should never have supposed that slavery could either have been advocated or

condemned upon scientific grounds. To me it appears to be entirely a political question, using the word political in its fullest sense, and including consequently therein whatever bears upon the social and moral well-being of a people. But in the meantime, let us glance at the *quasi*-scientific views which have been put forward in America.

Some six or eight months ago, this country was more than startled by a pamphlet from the Federal States, advocating what the writer called *Miscogeneration*. The pamphlet had only one thing to recommend it: it was unblushingly outspoken. If it really conveyed the sentiments of any considerable portion of American men, and especially of American women, it was well to let the world know it—though England, and in fact all Europe, was shocked and disgusted at the ignorance and indecency displayed by the writer. An answer repudiating the filthy theory (we may be glad for the credit of the Federals to find that it comes also from the North), has now appeared under the title of “Subgenation, or the theory of the normal relation of the Races;” but I regret to say, that the anonymous author has spoiled a very tolerable thesis, by what can only be characterised as “bunkum” or Yankee extravagance. By subgenation he simply means the recognition and consequent treatment of the negro as an inferior race, not fit either for freedom or to be placed on an equality with the Caucasian. Proceeding upon that foundation (for which a great deal might well be said), he arrives at the conclusion that “the solution of American difficulties is *the adoption by the North of the Confederate Constitution!*” This he fitly prints in italics with a mark of admiration after it. Nay, he recommends the election of “Mr. Davis as the legal president of all the States;” and here is the style in which he anticipates and rebuts all opposition. “But it may be said, the convention will not *dare* to do this. Liberty then is surrendered at the point where fear controls action. It is no longer a democratic party, but a sham, a deception, a set of cowards trying to sneak into office through some back-door which the party in power may have left unguarded. Away with such pigmy descendants of honourable sires. But Mr. Lincoln will fight us if we attempt it! Will he? But have we not declared that the freedom of the ballot-box shall be preserved, though the country be deluged in blood? Let us stand up, then, to our professions and our principles, or ignominiously announce ourselves dastards and poltroons.”

Not only, however, is the author of “Subgenation” unscientifically wild in his politics, but he drags forward religion—such as it sometimes develops itself in the States—to crown his argument, with this heading—“The Millennium solved.”—A brief specimen will suffice. Quoting Pope’s lines—

"Rise, crowned with light, imperial Salem, rise!

• • •
 See barbarous nations at thy gates attend,
 Walk in thy light, and in thy temple bend"—

He says, "The idea of subgenation is expressed in the last two lines, and is borrowed from the prophet Isaiah. It is evident that subgenation is an indispensable pre-requisite to the ushering in of the millennium." (!) Then he goes on *preaching*, till he winds up with a perfectly kaleidoscopic peroration, which will startle the ears of the European groundlings. Witness the following:—"Miscegenation is monarchy; subgenation is democracy. Lincoln and his cabinet are the tools of the cunning monarchists of the old world, who have hoped to perpetuate the reign of Antichrist by hurling Northern upon Southern democrats. . . . When Lincoln issued his Miscegenation proclamation, he proclaimed a monarchy. England forced him to do it under the threat to recognise the Confederate States. France has bullied him into abandoning the 'Monroe doctrine' in the same way. . . . Louis Napoleon, therefore, has a mission in Mexico. Let him work it out. . . . In due time his work will be overthrown, and subgenation and democracy become the normal order of society all over the New World. . . . Divines will vie with each other in preaching up this Christianising work. All the money now expended for missionary societies will be devoted to the great and beneficent work of establishing subgenation everywhere. . . . *This equality of condition* [sic], *an inevitable result from an equality of creation* [sic], is the MILLENNIUM—that profound mystery which has puzzled prophets and mountebanks from Tertullian to Joe Smith."

This is deplorable. In England—except indeed, perhaps, among some of the sham-prophets here—such language could only have been used as a satire and in ridicule. We must regret unfeignedly that it is genuine, and "really meant," in America. But even these quotations fail to convey an adequate idea of all that such writers are capable of. The following wind-up, under "Chapter X, AN OMEN," will better show the depth of utter silliness to which both the writer of "Subgenation" and the author of "Miscegenation" could sink, in discussing such a question, at such a conjuncture in their country's history, and will also enable us to dismiss them both as unworthy of further notice:—

"The writer of 'Miscegenation' considers it a most providential event, and as one significant of the type-man or miscegens of the future, that the statue on the dome of the Capitol at Washington is of a 'bronze tint.' But it is possible that he mistakes its significance. As has been shown in these pages, the mixed or mongrel people

perish, and are blotted from the face of the earth. The Egyptians, the Carthaginians, and now the Mexicans, are historical examples of God's punishment upon those who dare to mar the works of His creation. The dome of the Capitol, therefore, with its mulatto statue, has the symbol of decay upon it, and it would seem to constantly point to the triumph of the Confederate or *white* constitution in the place of the mongrelised one which the folly of the hour has deified."

If this gentleman had only given his conclusions without his reasons, he might have passed for a wiser man. Any argument founded upon "a bronze statue, *ergo* a mulatto statue," whether *pro* or *con*, is simply contemptible. If intellect and reasoning power are to be taken into account, in our endeavours to find out the "subgens" of mankind, (and as being at least of equal consequence with a prominent power of jaw or a brazen face,) such writers must look to their own "place in nature!" The South is to be congratulated, that this kind of thing has not issued thence!

As regards any serious arguments for or against slavery, founded upon the monogenist and polygenist theories of the origin of mankind, respectively, we have only to keep in mind that it is a practical question we are discussing, and we shall scarcely consider it capable of being affected by such considerations. It is not what men originally were, but what they now are, with which we have to do. Neither theory of man's origin has as yet any scientific standing. The actual wide diversity now existing between the different races of men is, *primd facie* at least, in favour of the polygenous hypothesis, and seems to throw the *onus* of proving the contrary upon the monogenists. I say this frankly, as nevertheless myself persuaded that the balance of probability, taking all things into account, is in favour of the older tradition of the descent of mankind from a single pair. But the problem is a very difficult one, and the practical affairs of the world cannot afford to wait till the problem is solved. What I would also plead for, is some moderation in discussing adverse scientific propositions such as these. Let, then, polygenists keep in mind that monogenists are not necessarily blindly holding a tradition merely, when they think it not impossible to understand how all the various types of mankind might have originally descended from one single perfect pair, contemplating, as they may, the minor variations in families and even in races, (as is especially the case in respect of the American people themselves,) taking place before our very eyes, and remembering that it is solely from the extensive operation of analogous changes in plants and animals that Mr. Darwin has been led to the extreme conclusion, that not only every species, but even the various genera of animals, have been produced from such varieties. On the other hand,

let those who think such a conclusion extravagant or monstrous, be consoled by the consideration, that its worst features will all be removed for ever, if it can be established that even the various races of mankind could not have sprung from one single human pair.

But, as we need not ignore the fact that the majority of monogenists are influenced considerably by what is recorded in Scripture as to man's creation, what can it really signify to them, whether all men are descended from a single Adam or not, when the same Scriptures also tell us of the curse of Ham, the father of Canaan—"a servant of servants shall he be unto his brethren"—the name of Ham's first-born being also *Cush*, which (it is a remarkable circumstance) signifies "black" in Hebrew? Moreover, the scriptural question, "Can the Ethiopian change his skin, or the leopard his spots?" seems a recognition of the fact that permanence of type, as races are now developed, has become a rule in nature, whatever may have been the origin of the diverse races. The monogenists, then, are thus simply brought to the precise position of the polygenists, that is, to the actual facts, that individuals among men and races of mankind differ materially one from another now; and that it is more than doubtful whether the lower types can ever be raised to anything like the higher. And then a prior question intervenes, which ought to be the only question in connection with slavery:—*While the inferior grades are actually inferior, how is it best for the higher races to deal with them?*

It is gratifying to know that miscegenation can scarcely be regarded as having found respectable advocates in America, even in the northern states. Mr. M. D. Conway has adopted it, and is "firmly persuaded that the mixture of the blacks and whites is good." But he publishes with Messrs. Chapman and Hall, of Piccadilly; he dedicates his *Testimonies* to an English Member of Parliament, and writes, in fact, for the "English people." Before the establishment of the *Anthropological Review*, perhaps his address might have had some effect. But the negro and mulatto have been too well discussed in its pages, to make such an appeal to sheer ignorance successful in England now. I would only remark, that, while a certain mixture of breed and judicious crossing may often improve the progeny of animals, there is nothing in nature or reason to warrant, even theoretically, that the bringing together and intercrossing of breeds with extremely contrary characteristics could produce anything better than mongrels or abnormal monsters. But we may well object to having *man* thus discussed, merely as if he were an inferior animal. It may be a laudable ambition in a Negro or a Bosjesman to long for an alliance with a Caucasian; but we cannot say as much on the other side, and are utterly unable to understand how the instincts of the

latter can reciprocate such a desire! If the well-marked types of mankind have really, by slow degrees, been evolved from a common source, then, at all events, let nature be followed in the ascending scale. Or rather, may it not be asked, why attempt to interfere at all with these arrangements of Providence? Let the black man bleach in the north, if he can; and let the pale, spare Yankees go to the south, if they would enrich their blood and complexion, without debasing their stock by miscegenation!

Mr. Robert Dale Owen entirely repudiates the miscegenation theory, or what he calls Amalgamation. He was a member of a commission appointed to inquire into the question, and he says, "In the first place, such evidence in this matter as our commission has obtained goes to show that, at least in a northern climate, the mixed race is inferior, in physical power and in health, to the pure race, black or white." . . . "Dr. Mack testified, 'The mixed race are the most unhealthy, and the pure blacks the least so.'" . . . "If this be so, then amalgamation of those two races is in itself a physical evil, injurious to both, a practice which ought to be discouraged by public opinion, and avoided by all who consider it a duty, as parents, to transmit to their offspring the best conditions for sound health and physical well-being."

It is to be regretted that the moral effects of amalgamation had not also received equal attention; but, after all, the physical deterioration is probably a better criterion for the purpose of convincing any one who would be likely to become a convert to "miscegenation." Mr. Owen's work, then, enables us to get rid of this scientific sham, and brings us to the real issues of the case.

The political question. This, as it very properly ought to do, mainly occupies Mr. Owen's pages. Obviously he cannot be followed here throughout the ramifications of his argument, more especially since so much space has been already taken up in clearing away the mischievous irrelevant issues which have been imported into the discussion. Nor is it necessary to do so. A very few words will suffice to show where Mr. Owen's logic halts. He mars his whole reasoning by a major proposition, which he entirely fails to establish. He claims the right of the Northern States to emancipate the slaves of the South; and he justifies the emancipation proclamation, but in such a way as shows that he is conscious it needs justification. This takes us into another political question, besides the mere right or wrong of slavery. And we need not regret that it does; for certainly the prevailing feeling in England and all Europe now is, that this is not precisely the moment to hamper the Southern States, in their noble struggle for freedom, with homilies upon the evils of their ser-

vile institutions. At all events, civilised men must be naturally anxious to see that the civilised races should have their inherited freedom and rights secured to them, before they will care to discuss the emancipation of Negro slaves. That a gentleman like Mr. R. Dale Owen should think otherwise is matter for regret, but scarcely for surprise, when we consider some of his antecedents. A thorough believer in the comical manifestations of what is called "spiritualism", we need not have expected he would take a common-sense and ordinary view of affairs, where there is necessarily so much involved tending to bias his judgment. We may give him credit, however, for the best intentions, though we must pronounce his logic to be wofully twisted. He admits that the emancipation proclamation involved "*a confiscation never before exercised, perhaps, by a belligerent, on so grand a scale, but [he concludes that it is nevertheless] in strict conformity to the law of nations in the premises*" (p. 155); and this though he has previously admitted that "a parallel case cannot, probably, be found in all history. A case in which, during a *civil war*, a question touching the confiscation and cancelling of certain claims or debts due by one portion of the inhabitants of one *insurrectionary district* to another portion of the same, rises to the grandeur of a great measure, *involving not only the peace, but the national existence of the power which proposes to confiscate.* This could only occur when, as in the present instance, these claims constitute the basis of a vast labour system, endangering domestic tranquillity, and imperilling the national unity and life." (P. 154.) If Mr. Owen had simply acknowledged that the proclamation was dictated by necessity, and could only be excused upon that plea, his reasoning might at least have been consistent; and as "necessity has no law", he could hardly have been answered. He admits that "at the time when the President, as *commander-in-chief*, issued his Proclamation of Emancipation, the life of the nation [that is, of the Federal States,] was *imminently threatened.* . . . Northern councils were divided, and *there was a loud clamour for peace.* . . . *So far as foreign nations had declared themselves, either by official acts or by the expression of public opinion, it appeared to be rather in favour of the Southern insurgents than of the established government.*" (P. 158.) This is, of course, a clear acknowledgment that the proclamation was a desperate expedient, as well as a mere despotic act, perpetrated by Mr. Lincoln, not as President, but as a military ruler. Fortunately for the interests of humanity, the measure was as futile as it was flagrant; and its reception by the Negroes must raise them in men's estimation. The South could never feel as bitter towards them, as it ever must towards the unprincipled instigators of a servile insurrection.

But Mr. Owen's great error lies in his attempts to justify such a

shocking and unprecedented measure by the *law of nations!* He observes, "Deriving all rights attendant on conquest 'from justifiable self-defence,' Vattel says, '*When the conqueror has subdued a hostile nation, he may*'" do so and so; but Mr. Owen overlooks the force of the words here placed in italics. If the South are regarded as "belligerents" (as Mr. Owen has called them), and as a "hostile nation", nobody would question the right of the Federal States to abolish slavery, "*when*", but *certainly not until*, they have become the "*conquerors*" of the South. This is really at present the whole question. We may quite admit, and doubtless the rulers of the Southern States deeply feel, that since the President's Proclamation of Emancipation "the dangers to their slave-system from propagandism will be increased a hundred fold." (Owen, p. 166.) But this ought only to make other nations more tender in discussing the question of slavery, while the South has such cause for anxiety. At present the doctrine preached by Mr. Dale Owen is not "miscegenation" nor "subgenation;" but simply, and without much qualification, the *Subjugation of unconquered free whites*. He really admits the notorious fact, that by the Federal Constitution slavery was acknowledged. "We know very well," he says, "that the men who framed the Constitution regarded a Negro held to service or labour, not, indeed (to speak of the majority of opinions), as a chattel, but as a *slave*." (P. 145.) But he endeavours to explain this away, and to take from the Southern States their right to maintain this institution so long as they think it for their true interests to do so. He cannot defend the Proclamation of Emancipation as a constitutional act of the President, but he pleads for Mr. Lincoln the right of absolute military despotism, as Commander-in-Chief! "In the exercise of this discretion he is not amenable under any provision of the Constitution. The Constitution, in making him Commander-in-Chief, *neither designated nor restricted his powers* as such"! (p. 156.) Here is the opening of a *rôle*, as the French say, for some President who may be equal to the occasion! Surely such language in the mouth of an American citizen of respectability serves to show to what straits the Federal cause has been driven for its defence. In the meantime we shall hope in England, that calmer sentiments and more determinate "counsels for peace" may now prevail in the North; and that we may hereafter venture to discuss all the political, social, and moral bearings of slavery upon a population of mixed races, without being traitors to the advancement of true civilisation in the world, or adding to the dangers and difficulties of a people who have immortalised themselves by an exhibition of constancy, courage and ability, never surpassed before in the world.

ANTHROPOLOGY AT THE BRITISH ASSOCIATION,
A.D. 1864.

IN chronicling the position given to Anthropology at the recent meeting of the British Association, we cannot find a better introduction than the following report of what took place before the first meeting of the General Committee.

C. CARTER BLAKE, Esq., addressing the President, said :—At the last meeting of the General Committee of the British Association, Dr. Hunt gave notice that at the present meeting he should propose that Section E should include Geography, Ethnology, and Anthropology. I am sorry to say that Dr. Hunt has recently been suffering from a severe illness, and is not yet sufficiently recovered to attend at this meeting. I have been deputed by him, and requested by the Council of the Anthropological Society of London, to undertake to move the resolution which stands on the paper. I am fully aware, sir, that the British Association is rather a representative of sciences than of societies, but I believe there is no London scientific society which is not to some extent recognised by the British Association. The Anthropological Society have deputed me to attend here, and have instructed me to urge on the Association both the desirability and the prudence of recognising Anthropological Science as a special subject in some section. The Anthropological Society has instructed me to advocate the recognition of the science of Anthropology, not for any real or imaginary benefit to the Society, but simply for the benefit of the science of Anthropology. Last year it was suggested that there ought to be a special sub-section for Anthropology, but the proposer of this resolution, and many others, were of opinion that it would be best that anthropologists, ethnologists, and geographers should all endeavour to work harmoniously together, rather than to be divided into two or more sections. Last year, at Newcastle, the anthropological papers brought up by the delegates of the London Society were only read by sufferance; but I may be permitted to observe that all the papers submitted were original, whilst the papers submitted by a sister society—the Ethnological—had mostly been read before in London. The Anthropological Society have deputed me to ask the General Committee to pass this resolution. I may state, sir, that this Society now numbers more than 430 members, exclusive of more than 100 honorary and corresponding members. I feel convinced that the good sense of the Committee will not allow them to refuse the claims of such a Society, which is founded, like the British Association itself, for the advancement of truth. I have been informed that there are some here, who, for reasons best known to themselves, will oppose such a resolution; but I beg the Committee to pause before they commit themselves by a step which would thus estrange a large scientific society from this Association. The Society have deputed me to bring up several papers, and to submit

them to the Association; but, should the Association not consent to recognise anthropology, I regret to state that I am instructed not to submit these papers to the Association. All I ask of the General Committee is to allow anthropological science to be recognised by the Association, and thus enable anthropologists to work harmoniously with students of the allied sciences, geography and ethnology.

The motion having been seconded by Captain BEDFORD PIM, R.N.

Sir R. MURCHISON said he rose with great pain to oppose what had been recommended by Mr. Carter Blake, because, fully admitting, as he did, the value of anthropological science, he was persuaded that it was utterly impracticable to attach it to a section which was already overburdened with work. When he mentioned that they had something like fifty papers communicated on that occasion upon geography and ethnology proper, he humbly submitted that the introduction into their section of a branch of science with which they could not properly deal was by no means admissible. He said that they could not properly deal with it, because at the last meeting at Newcastle, when he presided, as he did then, through their kindness, over the geographical and ethnological department, Dr. Hunt and Mr. Carter Blake came to him with a long list of papers. He told them then that their science was one half—or to a great extent—ethnological, and to a great extent anatomical. Anthropology, in the sense in which it was treated by those gentlemen, or one-half of it, was a science of which he was profoundly ignorant. Almost all the gentlemen associated with him—his vice-presidents, his secretary, and his friends right and left of him, thirty or forty in all—were unacquainted with anthropology, with the exception of Mr. Blake. He asked those gentlemen (Messrs. Hunt and Carter Blake) to give all their papers, and though their's was a purely ethnological section, they would select a certain number of them, and they should have perfectly fair play with the Association. He was therefore sorry to hear it said that the papers were read upon sufferance. He really did not know what that meant, because they certainly gave a place to the reading of those papers as well as any others; but he suggested then as now, that anthropology, when not connected with ethnology, was a fit subject for physiological and other sections, but not for their section. He therefore begged to move that the proposition of Mr. Blake be not accepted, and that the anthropologists be invited to attach themselves to some other section of the Association more suitable than the section of geography and ethnology.

Dr. J. E. GRAY seconded the motion, and stated that as President of Section D, he should be happy to receive any papers bearing upon his department from the Anthropological Society.

Dr. PERCEVAL WRIGHT (one of the Secretaries of Section D) said that the papers of the Anthropological Society were received like any others; and as to their being accepted on sufferance, the Association simply claimed the right of criticising everything which they contained, as was the case in regard to any other papers.

J. CRAWFURD, Esq. (Vice-President of the Ethnological Society), begged most distinctly to contradict the assertion that the papers were

received upon sufferance. There was no sufferance, but great toleration. The gentlemen calling themselves anthropologists thought that they were not well used (he did not know upon what ground) by the Ethnological Department. He himself was President of it, and he was totally unconscious of having done anything to offend them. He told them that in one department they were ethnologists, and in another anatomists, and that he should be very glad to see them whenever they gave him a paper on pure ethnology, or whenever they produced a paper that was on anatomical or physiological subjects, it would not be rejected if sent to the proper section. Mr. Carter Blake had thought proper to state that the papers produced on the part of the anthropologists were all original, and that the papers produced by the sister-society, of which he happened to be President, were not all original. One or two of the papers of the anthropologists were original, but some had been read before, and were reproduced as original, after the Irish fashion. So some papers of the Ethnological Society were original, while others had been read before, therefore the two were on the same footing. He saw no reason why the Anthropological Society should try and import any differences between them and another society in London into the meetings of the British Association. They were willing to receive papers from that society when they sent them. The Ethnological Society, to which they were anxious to return again, would be glad to have them upon its own terms, and not upon theirs. He opposed most distinctly the proposal of Mr. Carter Blake. He was sorry that Dr. Hunt was not there, for he was a very industrious, enthusiastic, and useful person; but, as regarded the proposition, he hoped it would meet with general disapprobation, and be rejected.

J. LUBBOCK, Esq. (President of the Ethnological Society) said from the manner in which the subject had been brought forward by Mr. C. Blake, he was forced, as President of the Ethnological Society, to say a few words. He could only regret that any supposed rivalry between two societies in London should have been in any way brought before that meeting. He could not conceive what they had to do with it; he would go further than that, and say, if there was any jealousy at all, it existed entirely in the imagination of Mr. Blake and some of his friends. On behalf of the Ethnological Society, he begged to disclaim any such feeling at all. Nobody would be happier than they should be if the exertions of the Anthropological Society aided in increasing a knowledge of that subject which they were both engaged in studying; but he looked upon anthropology as an ugly name for ethnology. They did not defend ethnology upon its derivation; perhaps upon that light it was not quite so good as anthropology; but it was an older word and a prettier word than anthropology, and he hoped that the long list of names upon their paper would not be disfigured by having the new word thrust upon it. If any change were made, he suggested that anthropology should be transferred to Section D rather than to Section E.

The Rev. Mr. TRISTRAM stated that they would be very glad to receive the Anthropological Society in Section D, where there was plenty of room for papers.

Mr. C. BLAKE then replied, and expressed his thanks to Mr. Lubbock and Mr. Tristram for their proposal or invitation to affiliate or connect anthropology with Section D; and at the same time avowed that he differed with Mr. Crawford upon a great many of the questions to which he had adverted.

Sir W. ARMSTRONG here invited Mr. Carter Blake to withdraw his motion, to which that gentleman declined to accede.

The motion was then put, and rejected by an overwhelming majority.

The scientific congress of England has thus passed away, and with it the hopes which many confidently entertained of the recognition of anthropological science at the British Association in the year 1864. Many persons anticipated that this year the failure which has attended the Anthropological Congress at Göttingen, consequent upon the death of the venerable Rudolph Wagner, would have been atoned for by the complete success of English anthropologists in their attempts to convince the scientific public of Great Britain of the importance of their science. Such hopes, however, were not shared in by those who were acquainted with the real facts of the case, and the rejection, by an enormous majority, of the proposition that anthropology should be recognised by the Association, was an event which created little surprise. In the sequel we have reprinted the discussion on topics connected with anthropology entered on in Section E, and elsewhere. We may here remark on some of the objections which were made at Bath to the formal recognition of anthropology, and we shall endeavour to examine and to refute them.

1. "Anthropology is one-half, or to a great extent, ethnological, and to a great extent, anatomical." We here deeply regret to see that Sir Roderick Murchison, whose courtesy to anthropologists, and general feeling of equity, has led him, for the last two years, worthily to preside over Section E, fails to see that although anthropology is certainly ethnological to a great extent, yet it is a science which *comprises* ethnology, ethnography, archæology, philology, but only trespasses on anatomical grounds so far as anthropotomy (the science of *human* anatomy alone) is legitimately included in it.

2. "Almost all the gentlemen associated with Sir Roderick Murchison—his Vice-Presidents, his Secretary, and his friends right and left of him, thirty or forty in all—were unacquainted with anthropology, with the exception of Mr. Blake." The cause of this statement was certainly due to the misfortune of the gentlemen to whom Sir Roderick Murchison referred; certainly not to the fault of Mr. Blake. Why some of the gentlemen alluded to did not protest against Sir Roderick's statement that they were unacquainted with anthropology, we cannot divine. Whether they were so acquainted must

be beyond our power to decide ; but from the inconvenient habit which many possess of writing papers directly bearing on anthropological science, and reading them a great many times over in public, we should ourselves, after careful perusal of the printed papers, strongly endorse Sir Roderick's statement, that some of them, at least, are indeed "unacquainted with anthropology."

3. "Anthropological papers were not read on sufferance." "There was no sufferance, but great toleration." Any person who carefully watched the proceedings at Newcastle must be aware that, on more than one occasion, anthropological papers, admitted by the authorities of Section E to be of scientific value, were placed on the list of papers to be read so late in the day as to render any discussion on them impossible ; whilst other ethnological papers, which had already been read and amply discussed in London, were placed in conspicuous positions on the list, although, when read, they elicited such a feeling of just condemnation as that pronounced by the Rev. Dr. Hincks on Mr. Crawford's paper on the Antiquity of Man, when read before Section E at Newcastle. That anthropological papers, although original, were read on sufferance, whilst stale ethnological papers received not only toleration but preference, is an assertion which represents the true state of the case, as presented to us.

4. "One or two of the papers of the anthropologists read at Newcastle were original." For "one or two," read "the whole."

5. "Ethnology was an ugly name for ethnology." "Ethnology was a prettier word than anthropology." That a serious scientific assembly, like the General Committee of the British Association, should consider which of two names was the "prettier" can hardly be imagined. We doubt if anthropology is really an ugly word ; we think it glides as musically over the tongue as the word "kjökken-mödding," and that, although neither word may be very euphonious, each is the exponent of a scientific fact, and must therefore be necessarily maintained in the British language.

6. "Ethnology was an older word than anthropology." We doubt whether this statement was carefully weighed by the President of the Ethnological Society before its deliberate promulgation by him at the meeting of the General Committee. We shall prefer not to anticipate a detailed refutation of this alleged historical fact which may shortly be laid before the scientific world, and will merely now remark that the frequent employment of the term anthropology by mediæval writers was probably forgotten at the moment by Mr. Lubbock.

Such were the style of arguments by which the General Committee were convinced ; and although they were not such as would have satisfied a discriminating scientific audience in France or Germany,

yet we must be content to wait and labour until the claims of anthropological science shall be recognised. We feel we can add no new arguments to those which have been brought forward by M. Broca in his inimitable *History of the Proceedings of the Anthropological Society of Paris*. In France, as in England, there was a moribund sect of ethnologists who, in the earlier days of anthropology, attempted to discourage anthropologists from pursuing their course. The relations which now prevail between the Anthropological and Ethnological Societies of Paris ought to serve as a warning to the elder, and an encouragement to the younger and more purely scientific Society of London. Sooner or later it will be learnt that the glory of scientific men will consist in the patient record of observed facts rather than in the fatal facility of being able to attract a crowd of both sexes to listen to equivocal science and still more equivocal pleasantries.

We hope the representatives of the Anthropological Society of London, year after year, will press upon the authorities of the British Association the necessity for the true and efficient recognition of anthropology. Mr. Carter Blake has given notice of his intention to move, in 1865, "That a separate Section shall be formed, entitled Section H, to be devoted especially to anthropology." We trust that at Birmingham every Fellow of the Anthropological Society and the friends of the science will be present, and support this motion, but that none will let the fear of being in the minority for a year or two deter them from supporting the above proposition.

Some of the statements in Mr. Crawford's speech appearing irreconcilable with known facts, the following letter appeared in the *Bath Chronicle* of Saturday, September 17th, 1864:—

"SIR,—I perceive in the report of Mr. Crawford's speech in the General Committee on Wednesday, a statement that the papers, or a portion of the papers, contributed by the Anthropological Society to Section E at Newcastle, had been before read elsewhere. Will you grant me space to state that I was Secretary of the Anthropological Society at the time; and formally and publicly to declare that every paper from the Anthropological Society, which was read in 1863 before Section E, was entirely original, and had not been read before on any occasion whatever.

"Permit me also to observe that the 'desire' on the part of the Anthropological Society to return to the Ethnological Society on any terms, has no existence excepting in the mind of Mr. Crawford.

"C. CARTER BLAKE."

The following important passage appeared in the Inaugural Address of Sir C. Lyell, and has a significant bearing on the question of the antiquity of man:—



“The more we study and comprehend the geographical changes of the glacial period, and the migrations of animals and plants to which it gave rise, the higher our conceptions are raised of the duration of that subdivision of time, which, though vast when measured by the succession of events comprised in it, was brief, if estimated by the ordinary rules of geological classification. The glacial period was, in fact, a mere episode in one of the great epochs of the earth’s history; for the inhabitants of the lands and seas, before and after the grand development of snow and ice, were nearly the same. As yet we have no satisfactory proof that man existed in Europe or elsewhere during the period of extreme cold; but our investigations on this head are still in their infancy. In an early portion of the postglacial period it has been ascertained that man flourished in Europe; and in tracing the signs of his existence, from the historical ages to those immediately antecedent, and so backward into more ancient times, we gradually approach a dissimilar geographical state of things, when the climate was colder, and when the configuration of the surface departed considerably from that which now prevails.

“Archæologists are satisfied that in central Europe the age of bronze weapons preceded the Roman invasion of Switzerland; and prior to the Swiss-lake dwellings of the bronze age were those in which stone weapons alone were used. The Danish kitchen-middens seem to have been of about the same date; but what M. Lartêt has called the reindeer period of the South of France, was probably anterior, and connected with a somewhat colder climate. Of still higher antiquity was that age of ruder implements of stone such as were buried in the fluviatile drift of Amiens and Abbeville, and which were mingled in the same gravel with the bones of extinct quadrupeds, such as the elephant, rhinoceros, bear, tiger, and hyæna. Between the present era and that of those earliest vestiges yet discovered of our race, valleys have been deepened and widened, the course of subterranean rivers which once flowed through caverns has been changed, and many species of wild quadrupeds have disappeared. The bed of the sea, moreover, has in the same ages been lifted up, in many places hundreds of feet above its former level, and the outlines of many a coast entirely altered.

MM. de Verneuil and Louis Lartêt have recently found near Madrid fossil teeth of the African elephant, in old valley-drift, containing flint implements of the same antique type as those of Amiens and Abbeville. Proof of the same elephant having inhabited Sicily in the postpliocene and probably within the human period, had previously been brought to light by Baron Anca, during his exploration of the bone-caves of Palermo. We have now, therefore, evidence of man having co-existed in Europe with three species of elephant, two of them extinct (namely, the mammoth and the *Elephas antiquus*), and a third, the same as that which still survives in Africa. As to the first of these—the mammoth—I am aware that some writers contend that it could not have died out many thousands of years before our time, because its flesh has been found preserved in ice, in Siberia, in so fresh a state as to serve for food for dogs, bears, and wolves;

but this argument seems to me fallacious. Middendorf, in 1843, after digging through some thickness of frozen soil in Siberia, came down upon an icy mass, in which the carcass of a mammoth was imbedded so perfect that, among other parts, the pupil of its eye was taken out, and is now preserved in the Museum of Moscow. No one will deny that this elephant had lain for several thousand years in its icy envelope; and if it had been left undisturbed, and the cold had gone on increasing for myriads of centuries, we might reasonably expect that the frozen flesh might continue undecayed until a second glacial period had passed away.

"When speculations on the long series of events which occurred in the glacial and postglacial periods are indulged in, the imagination is apt to take alarm at the immensity of the time required to interpret the monuments of these ages, all referable to the era of existing species. In order to abridge the number of centuries which would otherwise be indispensable, a disposition is shown by many to magnify the rate of change in prehistoric times by investing the causes which have modified the animate and inanimate world with extraordinary and excessive energy. It is related of a great Irish orator of our day, that when he was about to contribute somewhat parsimoniously towards a public charity, he was persuaded by a friend to make a more liberal donation. In doing so he apologised for his first apparent want of generosity, by saying that his early life had been a constant struggle with scanty means, and that 'they who are born to affluence cannot easily imagine how long a time it takes to get the chill of poverty out of one's bones.' In like manner, we of the living generation, when called upon to make grants of thousands of centuries in order to explain the events of what is called the modern period, shrink naturally at first from making what seems so lavish an expenditure of past time. Throughout our early education we have been accustomed to such strict economy in all that relates to the chronology of the earth and its inhabitants in remote ages, so fettered have we been by old traditional beliefs, that even when our reason is convinced, and we are persuaded that we ought to make more liberal grants of time to the geologist, we feel how hard it is to get the chill of poverty out of our bones."

Captain Burton's paper "On the Ethnology of Dahome" will be read before the Anthropological Society during the forthcoming session, as well as Dr. Harley's paper "On the Poisoned Arrows of Savage Man," and Dr. Bird's paper "On the Cheltenham Tumuli." For this reason abstracts of these papers are not here inserted.

The Decay of Species. By DR. DAUBENY, F.R.S.

It may be assumed as an acknowledged fact, not only that every organised being has a limit to his existence, but also that the species themselves, both in the animal and vegetable kingdom, wear out after a certain period. But it still remains to be inquired, whether there are not certain natural contrivances for postponing this inevitable termination to a later period than would otherwise happen.

Confining himself to the vegetable kingdom, Dr. Daubeny suggested, that one of these provisions would seem to be the introduction of new varieties, which, by diverging somewhat from the original type, acquire fresh vigour, and thereby tend to prolong the existence of the species from which they are derived. One of the modes by which this variation in character is secured, follows as a consequence from the mode by which plants are reproduced through the instrumentality of the floral organs, by the concurrent action of which an individual, intermediate in character between its respective parents, and therefore slightly divergent from both, is the result, so that this mode of multiplying the individuals of a species seems to fulfil an important end, even in cases where, as in plants of low organisation, the increase of the species is sufficiently provided for by means of buds. Accordingly, plants propagated by cuttings seemed in general to adhere very uniformly to the same type, and to be more limited in their deviation than those produced from seeds. But this deviation from the permanent type was still more completely carried out where the pollen of one plant is made to act upon the embryo of another, and here, perhaps, may arise those numerous contrivances to prevent self-fertilisation, which Mr. Darwin and others have pointed out. To the same cause, perhaps, was owing the increased vigour which a plant obtains by the removal into a fresh locality, or into a deserted country. Many, no doubt, might regard it as a sufficient explanation of these facts, to appeal to the changes produced in the constitution of a plant by such causes as tend to multiply the chances of some members of the species becoming adapted to the changes in the external conditions, which occur in the course of time, and which might otherwise have proved fatal to its continued existence. There were, however, reasons for believing that this solution did not embrace all the facts of the case, and that, even where every facility for producing the utmost amount of variation of which the species was susceptible existed, a period at length arrived when a species dies out, although the climate, soil, and other external conditions continue, so far as we could perceive, propitious.

Fixity of Type. By the Rev. F. W. FABER, M.A., F.A.S.L.

There was at one time an universal impression that the diversities of type and complexion observable in the human race might easily be accounted for from the effects of climate, custom, food, and manner of life. This opinion is now entirely abandoned by the majority of scientific men; but it is still firmly adhered to by thousands who content themselves with a *prima facie* view of the subject. Instead of here adducing the very strong, if not wholly irrefragable arguments by which it is refuted, it may be useful briefly to call attention to the facts which prove the extraordinary *fixity of type* which, during every period of history from its earliest dawn, has characterised the *racés*, and even the *varieties* of mankind. The *fact* certainly appears to be, that as far as we can go back, the races of man under all zones have maintained, wherever we can trace their records, an absolute and unalterable fixity. So far as we know there is no single race of pure

blood, which, when traced back to its earliest origin, did not present the very same traits which it now exhibits. It may fearlessly be said that history knows of no deep or permanent change effected in any race since her primeval dawn. On the oldest Egyptian monuments—as, for instance, on the tomb of Rameses Miamoun, and the hypogeum, discovered by Belzoni, near the ancient Thebes—we find Jews, Arabs, Negroes, Egyptians, Assyrians, and Europeans depicted with a fidelity as to colour and feature hardly to be surpassed by a modern artist. There are modern Assyrians wandering about the ruins of Mossul, who might have stepped down bodily from the monuments of Nineveh. Any one who has travelled in Greece, will have observed that the lineaments of many modern Greeks might have been copied directly from the physiognomy of their ancestors: we possess historical descriptions of various ancient nations, which correspond with minute accuracy to the persons of their modern representations. To use the illustration of the prophet Jeremiah the colour of the Ethiopian appears to be as indelible as the spots of the leopard. But, it may be objected, this preservation of race-characteristic is only what we should expect, where the surrounding conditions remain unaltered; indeed, until recently, even physiologists have believed that colour, for instance, is solely or mainly due to climate. A single glance at the map ought long ago to have explained a theory so demonstrably false; and to have established the fact that colour is often identical under opposite and different under identical conditions. So far from being an important agent, climate has upon colour only a very slight and secondary influence. Thus, as M. Godron has pointed out, the eastern region of Asia, from 70 deg. of north latitude to the equator, offers every variety of temperature, and yet is peopled by one single type, the Mongolian, whose hue grows darker instead of lighter as you advance northwards; so that the Chinese of the tropics are much fairer than the Samoecides or Tongouses who live on the shores of the icy sea. “At the same distance from the equator,” says Mr. Crawford, “we find fair Greeks, yellow Chinese, red Americans, and black Australians.” By the side of fair Circassians we find brown Calmucks. Short dark Lapps live side by side with tall fair Finns. The Nepaulese, who inhabit a mountainous and temperate region, are far darker than the Bengalese, who live in a sultry and far more southerly plain. Alexander Von Humboldt noticed long ago that the colour of the American Indian depended very little on his geographical position; and, in short, colour is distributed over the globe in patches, not in zones—a sufficient proof, if proof was wanted, that even colour, which seems to be the most easily altered of external peculiarities, is nevertheless wholly independent of climatic influences. But, as though to prove with additional force that races are endowed with an innate power of resistance against the effects of all external conditions, we are possessed of numerous instances which show that the characters of race are not materially, or even appreciably, affected by a change of physical agencies. Europeans transplanted from the temperate to the torrid zone, do not, even in the course of generations, undergo any considerable modification of type. Three hundred years have elapsed

since the Dutch settled in Southern Africa, yet we have the direct testimony of Dr. Andrew Smith that "their descendants at this moment are as fair as the fairest Europeans." The descendants of the Spaniards, who emigrated to America three hundred and fifty years ago, do not differ in physical form from their brethren of Arragon or Andalusia. Ulloa says that the children of the Spaniards in Guayaquil have blonde hair, and are fairer than the Spanish children in Europe. The Portuguese, who three centuries ago colonised Brazil, Zanzibar, and Mozambique, are as truly Portuguese now as their ancestors were when they migrated from Europe. The French in Canada, the English, French, Danes, and Spaniards in the West Indies; the English, Dutch, and Chinese, in Malacca, remain unaltered and perfectly distinguishable from each other, and from the original inhabitants. For two centuries at least there have been Negroes in all parts of America, and we are told by an eye-witness that "there are still many of the seventh and eighth generations whose depth and glossiness of colour would render them remarkable in the country of their ancestors." For the same period Danes and Norwegians settled in Greenland have not advanced a single step towards a resemblance of the Esquimaux. It may be objected that a period of two or three centuries is little or nothing in ethnographical matters. It is, at any rate, everything to those who, without miraculous interference, of which nothing is recorded, have not more than the period between the deluge and the date of the oldest Egyptian monuments, in which to account for the appearance of the full-grown well-marked Nigritian type. But, independently of this, we find races widely differing from each other, but dwelling side by side, who, so far as we know, have from time immemorial been affected by precisely the same climate and external influences. Such is the case with the Bosjesmen and the Kaffirs, Fuegians, Patagonians, Parsees, and Hindoos. Such, too, is remarkably the case with the Abyssinians, who differ so completely from Negroes, though for unknown ages they have been living hemmed in on all sides by nations of the Nigritian stamp. Nay more, this historic fixity of type is found even in slight peculiarities of life and habit. The life of the Ishmaelite of to-day might be described in the identical terms applied to his first ancestor. Bullocks still draw the wagon tent of the Mongol across the steppes of Asia, as persistently as they did in the days of Æchylus and Herodotus, and perhaps a thousand years before, and although there is something startling in Dr. Knox's assertion that "Jews seem to have been trafficking in cast-off garments before Rome itself was founded," we have abundant evidence that their general character and their general habits as pedlars and wanderers are as old as Juvenal and Martial. "Everywhere," says General Dumas, "they have the same instincts, and the double genius for language and commerce." How then can it be denied that the specific characters of race are constant under the most diverse conditions, or that the longevity of type reaches back as far as human knowledge can penetrate, in spite of all changes in circumstances and locality? We believe that the opposite opinion has arisen in great measure from the supposed changes which animals and vege-

tables undergo when removed from one country to another; but even if such changes were certain and important, we should have no right to infer the equal mutability of type in the human race, and without here showing that the effect of such influence has been greatly exaggerated, we may quote the high authority of Mr. Darwin for the belief that even in the case of animals, the changes thus produced are "*extremely small.*" The argument could hardly fail to have some weight, even if we left it here; but there are three races which illustrate it so forcibly, and which have been known to exist for so many ages, that they deserve a few moments of separate consideration. I mean the Negroes, the Gipsies, and the Jews. The Negroes are known to have existed some twenty-three or twenty-four centuries before Christ; some would assert that we have historic evidence of their existence even thirty or forty centuries before Christ. Accepting the lowest calculation, and arguing on the supposition of a deluge universal as regards mankind, we have but a very short period to explain the gradual development of a Nigritian from a Caucasian, or a Caucasian from a Nigritian type. Now, there is no reasoner so utterly uninformed, as to suppose that mere natural causes are sufficient to account for so vast a change in so brief a period. We find Negroes not in Africa only, but in Koenlun, in Assam, in Formosa, in Malacca, the Andamans, the Philippines, and many other regions. Under whatever climate they are placed, there is no material variation in the apparently indelible characteristics of their race, and no known set of conditions is capable of producing their colour, much less their conformation, in any historic period of years. How, then, is it possible to account for the appearance of well-defined Negroes by the side of equally well marked European, Asiatic, and African nations only a few generations after the period of Noah? And if, in the space of four thousand years, we see in these races not the slightest tendency to change, what right have we to assume that, by natural causes, a change ever took place in them at all? Neither heat, nor cold, nor moisture, nor scarcity of food, nor an arid soil, nor degraded habits, nor any known physical agent, is adequate to produce, in any given term of years, the characteristics of this race. How, then, is their origin to be explained? It is hardly worth while, before a scientific assembly, to call to our aid the curse of Noah, respecting which the common argument seems to be, that Ham and *his* descendants, who were *not* cursed, were slaves and Negroes, because Canaan and *his* descendants, who never were Negroes, or in the same sense slaves at all, *were* cursed! We may hope that the time is past when such logic could have been identified with orthodoxy in theological belief. Again, for some five centuries or more, the Gipsies have wandered over, and lived in, all the countries of Europe, exposed to every variety of climate, tattered and houseless, yet retaining to the last the closest marks of their Asiatic origin. Wherever we find them—in England, France, Germany, or Italy, in Russia or in Castile, in bleak Scotland or in sunny Spain, on the heaths of Brazil or the ridges of the Himalaya hills—their character, their habits, their figures, and their complexions recall their ancestors on the banks of

the Indus. No variety of soil or weather, no number of centuries, no hardship or beggary have obliterated the seal which has been stamped on the forehead of the Gipsy race. Still more remarkably is this the case with the Jews. For little short of two thousand years they have been a despised, and often a roving community, in every region, from tropical heat to almost arctic cold; and yet, in spite of frequent inter-marriages with people of other blood, the race continues, and has remained unalterably true to its well-known type. The supposed black Jews, of whom so much has been made, are, in point of fact, as fabulous as white Indians. On close examination, and on unimpeachable testimony, they turn out to be either non-existent in the localities mentioned, or people with but a slight admixture of Jewish blood, or else the descendants of proselytes, half converted Arabs or Africans, not Jews at all. The real Jews, though they have adopted the costume, language, and manners of every people among whom they have dwelt, resemble each other all over the world, not only in lineaments, but also in conformation, temperament, and moral character; nay, more, which is a most remarkable fact, they retain even in the extreme north their precocity in attaining to the nubile age. "The stamp of his features," observes the Count de Gobineau, of a Polish Jew, "distinctly betrayed his origin. This inhabitant of the north, whose direct ancestors had been living for several generations in the snow, appeared to have been embrowned but yesterday, by the rays of the Syrian sun." In fact, the Jew is, perhaps, the only cosmopolite; from Gibraltar to Norway, from Algiers to the Cape of Good Hope, from Cochinchina to the Caucasus, from Jaffa to Peking, from Montevideo to Quebec, we find him, says Dr. Boudin, everywhere indestructible, though without any apparent principle of life. What he was in Egypt, perhaps three thousand years before Christ, that he is in Sweden and Poland nearly two thousand years after Christ. The vigorous caricatures which the Egyptian drew of him in the hypogeum of Thebes have lost none of their comic force, and might be reproduced at this day with perfect fidelity from many living members of the race. Such are a few facts respecting fixity of type in the human race; it remains for every one who is convinced of them to draw from them such inferences as appear to him to be most truthful and logical.

Mr. RUSSELL contended at some length that the arguments on the subject drawn from the Aryan theory of race, from remains of implements used by man, found in connection with the remains of extinct animals, and ancient history, were all in favour of a much higher antiquity of the human race than that usually ascribed to it.

Mr. VIVIAN expressed his satisfaction at finding this theory, which was so unnoticed, when he read the first paper on the subject to the British Association, some seventeen years ago, now the great topic of the day. He was glad that the rule he then laid down was enforced, that of refusing to mix up scientific with religious questions; but he conceived that, in speaking of the Bible as a history, we had as much right to refer to it as we had to refer to Herodotus or any other book. The conclusion that had gradually forced itself upon his own mind, was that the white were a separate race; but that there

were preceding and savage races coeval with the mammoth. He believed also that it was from eastward in Eden that the first parents of our race sprang. He contended that no *a priori* difficulty which the Bible placed in the way of the acceptance of any conclusion from science, ought to withhold us from the consideration and acceptance of that conclusion, for it involved no greater difficulty than that presented to all believers in the Bible, that thousands of savages for whom Christ died had perished without ever having heard the name of Christ. He believed that there was an earlier race of man, and an earlier race of animals than those mentioned in the Bible, for the chronology of the Bible did not give sufficient time for the making those changes in the races of men and animals which we now know had taken place. To reconcile, therefore, the Bible history and chronology, we must have an earlier race both of men and animals. He believed, too, that domestic animals were created after Adam. They found Abel taking to the keeping of sheep long before there could have been a taming of wild animals.

Mr. CRAWFURD, in the course of some general remarks on the paper, stated that the Egyptians were a mixed race, and differed in every country in which they were found; and the same remark applied to the Jews. He had long looked for, but had never found a pure Jew yet. He had a high respect for the Jews. They were incomparably superior to any other people, and as an evidence he would produce the Old Testament. Such a work as that could never have been produced by an Arab, a Hindoo, or a Chinese. The Jews were the most highly educated people of Asia.

Mr. F. P. FELLOWS, of Wolverhampton, had heard the paper read with great pleasure; but on one or two points he rather differed with the writer. He thought that our many types did not come from an extreme type, like the Negro or the Caucasian, but from some medium type. He thought that that was a true explanation of our present difference of races. He believed that if we went through England we should find types of every race of man, except colour. He believed that we should find types of the Caucasian, and, to some extent, of the Negro—the woolly head, and the Negro figure. How had this come about? His opinion was, that we had come from the East. That from the East Africa had been peopled, and Africa, being a hot climate, its inhabitants gradually became darker and darker in colour in the course of ages until they came to the Negro type. As examples, contrast the newly-arrived Negro in the United States with one who had sprung in the second or third generation, from those previously there. And then, look at those popularly described as Yankees. They were of a different type to their progenitors, whether English or German, and were approximating to the type of the North American Indian. Grant it, that the approximation was as yet but slight, yet remember in how short a time that approximation had been effected; and then one would easily see how, in the course of ages, a type would be completely changed.

Captain JENKIN had had a great deal to do with the Jews, and was anxious to restore some of them from the doubt thrown by Mr.

Crawford upon their Israelitish origin. The dark Jews of Bagdad and Athens were Jews, and were recognised as such by the white Jews of England.

Sir HENRY RAWLINSON thought that a great source of difference between the speakers arose from various acceptations of the word "type." Many characteristics went to the making of a type; and while there was, for instance, great difference in the characteristics of different Jews, yet the Jewish type was the same. Colour did not constitute type; and black and white Jews were still Jews, possessing the type of the descendants of Abraham. That descent, not profession of the Jewish religion, constituted a Jew. Jews had intermarried with Gentile women in every country wherein they had been found, and the characteristics of the progeny had been affected accordingly; but the Jewish type was preserved, and that he could always tell, he thought, by a peculiar twitch at the bottom of the cheek, however a Jew might in other respects differ from the Israelitish type.

Mr. LUBBOCK said that if we were to believe in an universal deluge, we must alter the date of that deluge; for the period now assigned was not sufficient to account for all the changes of race that had taken place. He was a strong believer in the unity of the human race; but he did not claim to be considered orthodox on that account, because he considered that the race was of greater antiquity than most people were inclined to admit, though he admitted that varieties of type sprung up more numerous in former times, when men did not emigrate as they did now with the intelligence and the means of protecting themselves from the difference of climate.

On the Anatomy of Quadrumana, with a comparative estimate of the Intelligence of Apes and Monkeys. By Dr. CRISP.

This paper was illustrated by numerous diagrams, skulls, and other bones of the gorilla, orang, chimpanzee, gibbon, and those of many of the lower quadrumana. The ear bones were shown of man, gorilla, chimpanzee, and orang, the first time, Dr. Crisp said, they had been seen together, or described. The short space of time allotted would not enable him to do justice to the subject. He had examined and dissected more than 220 of the Quadrumana, including five chimpanzees and five orangs, and had taken casts, drawings, and measurements of many of them, so that he spoke chiefly from his own observations and not from books. In reference to the paper of the President, Dr. Gray, he begged to digress a little for the purpose of introducing a new system of teaching comparative anatomy. The plan which he had pursued, is one which, he believed, has never before been attempted, and was solely and exclusively his own. It consists in taking casts in plaster of Paris and in wax, of the most important parts of the animal, including the thoracic, the abdominal, the pelvic viscera, the brain, eyes, and such portions of the muscles, and of other parts as present peculiarities of form or structure. The alimentary tube is inflated and dried, as are also the larynx and trachea. These parts are shown together, with the skeleton, and with the

stuffed or prepared specimen (when not too large), so that the animal and its anatomy are at once revealed to the spectator. If this system were followed in our museums of natural history, the structure of animals in relation to their habits might readily be known, and the study of comparative anatomy, now so little attended to, might be made both instructive and agreeable. The bones of a large orang, brought from Borneo by the late Sir Stamford Raffles, were exhibited to show the great proportional difference between the fore extremities of this brute, the height of which was about four feet two inches, the expanse of the arms, from tip to tip of the longest finger, seven feet eleven inches; whereas in man this expanse (as was well known) was equal to his height. The curvature of the phalanges was pointed out; the sulci in some of these phalanges, and the thick pad at the flexure of the fingers and toes; the two last peculiarities Dr. Crisp believed had not before been noticed. The skull presented a less brutish aspect than that of the gorilla, the ridges being smaller, and the brain case more elevated. The visceral anatomy of the chimpanzee and orang were next described, and the differences between the various organs and those of man pointed out. The peculiar twisted form of the gall-bladder in the orang and chimpanzee (not before noticed) was described, and the absence of the *valvula conniventes* was especially dwelt upon, as well as the peculiarity in the aggregate and other intestinal glands. The thoracic and abdominal viscera in the gorilla were likewise alluded to, and it was inferred that in many points the gorilla was further removed from the human subject than the chimpanzee or orang. The great length of the spinous processes of the cervical vertebæ (of which a drawing was shown) was considered one great mark of the degradation of the gorilla. The processes were longer than those of the lion, tiger, bear, rhinoceros or hippopotamus, and served to give attachment to the great muscles that supported the head; other differences were pointed out in the anthropoid apes, such as the absence of skull sutures, the immense size of the canine teeth; absence of the styloid process; rudimentary mammillary processes; large lower jaw; straight spine; absence of the round ligament of the head of the thigh bone, and wide space between the bones of the arm. The length of the intestinal tube in the various species was next given as well as the weight of the brain, the *relative* weight of that of the adult gorilla being one of the lowest in the quadrumanous scale; some of the smaller monkeys, however, had proportionately a larger brain than man. The character of the ears, hair, eyes, windpipe, and other parts was described; and lastly, the diseases of these animals were noticed, tubercle being very common; but it was a mistake to suppose that the generality of the *Quadrumana* that died in this country were affected with tuberculous lungs, no instance of cancer or dropsy had been met with by Dr. Crisp, and he believed that the exanthemata were unknown. He had met with one case of epilepsy in an albino monkey (*Macacus rhesus*), and one of aneurism. Among the parasites, besides *Echinococcus* cysts, he had discovered the *Filaria gracilis* in two instances, and he had found an *Ascaris lumbricoides* in a chimpanzee that he had recently

dissected, but he had not had time to describe it. Dr. Crisp said : In conclusion, all my hearers are, probably, well acquainted with the habits of the two apes, the orang and chimpanzee, and two may be seen at the present time, one a young female orang at the Zoological Gardens, the other, a young male chimpanzee at the Crystal Palace. Although the approach of these animals to the form and movement of man is the nearest among the members of the brute creation, I am not aware, although I have watched both of them, and made careful inquiries of the keepers of these and of others that I have seen, that they possess any degree of intelligence over many of the lower *Quadrumanæ*, or, indeed, beyond that of the dog or elephant. I need not repeat the well known descriptions of some of the anthropoid apes. In point of intelligence these apes appear to be on a par, although the orang, notwithstanding his supposed anatomical inferiority, has, I believe, exhibited more evidence of sagacity. The mode of progression, however, in the chimpanzee is more man-like; the soles of the foot being placed on the ground, whilst in the orang and gorilla the side only is applied. I have observed one habit of the orang that I think worthy of notice; when eating, and the animal is doubtful as to the nature of the food, the morsel is protruded on the edge of the lower lip, this part being so much elongated as to allow of a careful inspection by the eyes. One of the most remarkable anthropoid apes that I have seen, was an orang that, many years since, belonged to the Zoological Society; she rejoiced in the unaristocratic name of "Jenny", was about two years old when she arrived at the gardens, and had lived there three years (longer, I believe than any of her kind). "Jenny" would blow out a candle, unlock a door, putting the key into the lock herself; rub a window with a cloth, put sugar into her tea, and pour the sugar into a saucer and drink it; use a needle and thread, and many imitative acts of this kind; but in all these acts it must be remembered, that there is no evidence of superior intelligence equal to that exhibited by the dog or the elephant; it is only the mechanism of the hand that gives this animal the advantage; and it is questionable whether the above-named quadrupeds are not a degree above the man-like apes in intelligence and sagacity. But let us first compare animals of the same order, although in some respects anatomically inferior. Some present, like myself, may have seen the celebrated mandrill baboon "Jerry" (*Pupio mormon*), at the late Surrey Zoological Gardens, when they were first opened. This brute, although of ferocious aspect and very savage to strangers, would drink a cup of tea, pouring the tea into his saucer, sit in a chair, smoke a pipe and drink gin and water, cover himself with a blanket like the chimpanzee and orang, and do many man-like acts at the bidding of his keeper. When the comparative small size of brain in this animal is considered, it is strange that it should possess so much of the imitative faculty; but let us take a more familiar example by way of comparison, viz., the little *Cebus* or capuchin, many of which are seen about the London streets, and whose intelligence greatly exceeds that of the anthropoid; gun firing, fiddle playing, fencing, sweeping, dancing, and a vast number

of other acts and grimaces that excite the wonder of the beholders. The intelligence and sagacity of the dog and the elephant are too well known to need repetition here. To bring this hasty and disjointed sketch to a close, I may remark that I could have enumerated a great number of examples to show that, in some points, many of the monkeys have a nearer resemblance to man than the anthropoid apes. I reserve this for a future occasion, and I venture now to draw the following conclusions:—1. That the anthropoid apes, both anatomically and in reference to their amount of intelligence, are not entitled to the elevated position in which they have been placed by some anatomists. 2. That the line of demarcation between man and these brutes is so wide and clearly defined as to entitle the human family, as maintained by Blumenbach, Cuvier and others, to a separate and *exclusive* division in the animal scale.

Professor ROLLESTON called the attention of the meeting to certain statements of Dr. Crisp, which he (Dr. Rolleston) considered to be erroneous. Dr. Crisp had asserted that the method of displaying anatomical preparations in our public museums of Comparative Anatomy was, in some respects, extremely deficient; and more particularly (we understood him to say) in regard to the anatomy of the brain, which could only be illustrated by casts such as he had been in the habit of making. Professor Rolleston thought he had done injustice to the authorities presiding over our public institutions, and especially to Mr. Flower, the conservator of the Hunterian Collection, who, by great labour and perseverance, had made and displayed in that institution a most beautiful series of casts of the brains of the higher animals, which might in some respects be regarded as unique. Dr. Wright of Dublin had also executed a fine series of casts.

Dr. CRISP, in answer to Dr. Rolleston, said that the plan adopted of taking casts of the various organs was very common, and had been adopted for a long time; but his system of showing the animal, with its anatomy, was entirely his own, and nothing like it, as supposed by Dr. Rolleston, was seen at the College of Surgeons or in any other place. As regards the correctness of his statement respecting the size of the blood-corpuscle in the chimpanzee and orang, it was confirmed by the examinations of Mr. Gulliver, whose researches were well known. Dr. Rolleston was entirely in error in his statement respecting the comparative size of the brain in man. In many of the smaller monkeys, as the *Cebus*, it was relatively larger than in man; indeed, if we looked to a lower grade of the animal chain, as in some of the rodents and small birds, the brain (as Dr. Crisp had abundantly proved) was relatively larger than in men. Dr. Crisp said that in his leisure hours he occasionally indulged in writing fables, and as Dr. Rolleston had terminated his remarks by a poetical quotation, he would follow his example. The subject was the meeting of the apes and monkeys to consider their position in the animal scale. The subjoined was the application, it having been recently asserted that "the erect position was not peculiar to man; the kangaroo and the penguin sharing this attitude with him."

“ The kangaroo a tripod firm,
 Makes by sitting on his stern ;
 And some assert penguin and he,
 Are as erect as man can be.
 Surely a tub might just as well
 Their illustrations serve to swell,
 Especially an empty one,
 Crown'd with professors' cap and gown.”

On the Measures of Geological Time by Natural Chronometers. By
 Professor PHILLIPS.

Distinguishing in the first place between the history of operations on the sea and on the land, by which the succession of ancient phenomena is determined, from the attempts to ascertain, first the relation, and finally the absolute chronology of these events, the author noticed several orders of natural effects, which, being traceable through the later geological periods, and still in progress, seemed the fittest to be employed in the marking of Cainozoic time. Examples are found in the action of streams wearing away their channels, or depositing sediment in particular expansions, or by the sea-side; in the formation and growth of peat moor; the filling up of lakes; the accumulation of *detritus* in conical mounds at the foot of precipices by falling of rocks, or torrents of water. The last case was illustrated by drawings, and a description of the remarkable mound of La Tinière on the lake of Geneva, near Villeneuve, which has been investigated by M. Morlot. At this place one of the mounds, the least ancient, has been cut through by the railway to a depth of between twenty and thirty feet. The section exposes the materials usually found in such mounds; large and small pebbles and sand; but, in addition, those bands of loamy nature, six to eight inches thick, are seen to range parallel to the general surface—one four feet below the surface, another ten feet, the third nineteen feet. The bands contain charcoal, and have rather the aspect of vegetable earth, in part stained yellow. With the upper one were found Roman *reliquiæ*—fragments of tiles and a coin; the middle one yielded no such objects, but some bronze fabrications; the lower one coarse pottery, also fragments of bones of men and animals. Professor Phillips was so fortunate as to obtain by his own research a portion of cranial bone, which, by the help of Mr. C. Robertson, of the Oxford Museum, he found to be, as he had conjectured, part of the occipital bone of man. (The specimen was exhibited.) From these facts M. Morlot inferred that at three successive epochs the actions of the torrent spread the *reliquiæ* of human occupations over the growing delta of La Tinière, that the epochs may be approximately calculated at 1600, 3800, and 6400 years ago. And he refers these dates to particular points in the “Roman”, “bronze”, and “stone” periods; so that the earliest trace of man in this delta is between 6000 and 7000 years old. No stone implements occurred in this mound. The age of the whole mound is estimated at 10,000 years. M. Morlot also applied the same method of computation to the earlier and larger conical mound of La Tinière, which was deposited while the Lake of Geneva was maintained at a higher level. The result gives for this cone one thousand centuries, and M.

Morlot regards it as a fair approximation to the length of "post-glacial" time; the term "post-glacial", as we employ it in England, being supposed to agree with the end of the last great extension of ice in the Alps. Professor Phillips then presented to the meeting, on the part of M. Morlot, English translations executed by that gentleman, of the interesting memoirs which he had read to the Academy at Lausanne, and to a meeting of the Society of Natural Philosophy at that place.

Mr. LUBBOCK said he was very sorry that M. Morlot was not present, as he was half an Englishman by blood, and wholly an Englishman by feeling, which did not make him the less a Swiss. It would give him great satisfaction to know that his researches and conclusions had been that day stamped with such unquestionable authority as had just been extended to them. With regard to the Roman layer, he would venture to say that he thought further inquiry was necessary, because at present their researches did not extend beyond one Roman coin, the present whereabouts of which even Mr. Evans had been unable to discover. He (Mr. Lubbock) would remind the meeting that although the Roman domination in Switzerland did not last long, still Roman coins circulated there long after the Romans had been driven out. He would venture, looking at the flourishing condition of the Association, to suggest that Prof. Phillips should propose that a small sum should be placed at the disposal of M. Morlot to enable him to continue those researches which had produced such marked results, particularly with regard to the question involved in the Roman layer, which, in fact, was not only the foundation but the keystone of the whole argument connected with the subject.

On the Supposed Stone, Bronze, and Iron Ages of Society. By JOHN CRAWFURD, Esq., F.R.S.

The theory which supposes three different ages of civilisation, marked respectively by the use of arms and implements of stone, of bronze, and of iron, seems to have originated in the discoveries recently made by the examination of the refuse-heaps of Denmark and the pile buildings of the Swiss lakes. In so far as relates to Denmark and Switzerland, and most probably to several other parts of Western Europe in which the advance of civilisation was very slow, there can be little doubt but that the three ages above indicated did really exist, but if the order of progress indicated by them be applied, as a general rule, to all mankind, we shall soon find the theory refuted by the stubborn facts of history. Man, created naked, houseless, and even speechless, but with a brain to invent, hands and tongue to execute, and necessity to stimulate him, has been enabled to surmount the seeming difficulties of his position. In his progress towards civilisation, his advance has always been in proportion to the opportunities presented to him, and to the capacity of the race to which he happened to belong. In so far as his progress is indicated by arms and tools, it appeared to him that it may be divided into three periods. On man's first appearance, the most obvious materials

would consist of wood or bone; and to this early time would probably belong the invention of fire. This would constitute the wood and bone age, of which, from the perishable nature of the materials, we can, of course, possess but slender records. This would be followed by the period in which tools and weapons were fabricated from stone, accompanied by the discovery of the art of fabricating utensils of clay fashioned by the hand. This last, however, might not always be the case, for the South Sea islanders, who had invented stone arms and tools, and who were very far from being abject savages, were unacquainted with pottery, and in their ignorance of any vessel capable of producing boiling water, scalded their fingers at the tea-urn of Captain Cook. The stone period would constitute the second age, and the third (a great stride) would consist of that in which metals were substituted for stone. This might be called the metallic period. The metal which in this case would be first employed, would be iron or copper—the only ones of sufficient hardness to make cutting implements. Bronze, of far more difficult production than either, would necessarily be a more recent invention. Dr. Percy, in his great work on “Metallurgy”, thinks that iron preceded all metals. On mere metallurgical considerations, there can surely be no question but that iron would have priority over copper and bronze, yet there are conditions under which this order has certainly been reversed, although they are exceptional. Iron was totally unknown to all the aboriginal inhabitants of America, and copper and bronze were known to but a small number of the more civilised nations. Their arms and tools were of wood, bone, and stone. The same was the case, not only with the savages of Australia and New Guinea, but with the more civilised inhabitants of the innumerable islands of the North and South Pacific Ocean, all of whom, since their discovery, have received iron with avidity, whenever they had the opportunity. Even the savages of the Andaman Islands, who had previously made their arrow-heads of stone, now make them of iron, availing themselves of the iron of wrecked European shipping. None of these rude people have themselves attempted to reduce iron from its ores, and of course, not the more difficult task of reducing the ores of copper and tin, even supposing them to have possessed them, for the production of bronze. They now receive the metals from strangers, as most probably did the rude forefathers of the civilised nations of Europe. The rudest people possessed of the art of reducing the ores of iron to the metallic state, are certain Negro tribes of Africa, and the least advanced inhabitants of the Malay Archipelago, as in the example of the Dyaks of Borneo. While the languages of the savages of Borneo are different from those of these two civilised nations, nearly all the terms connected with such arts as they possess are taken from the Malay and Javanese; and among these the terms connected with the fabrication of iron, and the forging of tools and weapons of it, are wholly taken from the Malay or Javanese languages, which, although differing essentially from each other, agree for the most part in this respect. From all this, I think it must be inferred, that the invention of iron was made by the civi-

lised people of Sumatra and Java, the ruder nations being only imitators. All the metals, which are native products of the Malayan countries, are known by native names. These are confined to iron, steel, tin, and gold. Silver, copper, and quicksilver, are known only by foreign ones, the two last being taken from the Sanskrit. No mines of any of the three are ever known to have been wrought within the Archipelago, and they must consequently have been received from strangers, and these strangers were Hindūs, the only people that in remote times are authentically ascertained to have held intercourse with the Malayan nations. Bronze or bell-metal has been long known to the Javanese, and largely used in the manufacture of musical instruments of percussion, as the well-known gong, immemorably a considerable article of exportation to other islands of the Archipelago. The name for bronze in the Malayan language is taken from the Sanskrit, and as the copper also must have come from India, we may conclude that the manufacture of bronze was introduced by the Hindūs. America is a case in which an age of bronze preceded one of iron; but even the bronze age itself was here preceded by one of copper. The case was, however, exceptional, and arose out of a peculiarity in the geographical formation of a part of the American continent—the existence in the state of Michigan and about the shores of Lake Superior of extensive formations of copper in the metallic state. Ancient Egypt seems to be a case in which a bronze age clearly preceded an iron one, or, at least, in which cutting instruments of bronze preceded those of iron. From the statement of Kæmpfer it will appear that a bronze age never could have existed in Japan. Indeed, bronze, or an alloy of copper with tin, is not named at all by Kæmpfer. The ages of man on the stages of his social progress as measured by the materials of his tools and weapons, in so far as Japan is concerned, would consist of a wood and bone age, a stone age, and a copper age, while there would be neither an age of bronze nor of iron. If we look to the condition of the metals among the Phœnicians, the Jews, and the Assyrians—people all of them far in advance of all the nations of Europe 3,000 years ago—those of Greece and Italy excepted—we shall find them in possession of iron, copper, and bronze; but which of them was in most general use it is not easy to determine. That the Jews were early familiar with all of them, and also with tin and lead, is proved by the frequent mention of them in the Pentateuch and other parts of Scripture. The critics admit that the word which in our translation is rendered brass, should be sometimes bronze and sometimes copper. The helmet and the armour of the giant Goliath are described as of brass—in this case probably copper—and the point of his spear of iron, but no notice is taken of his sword. When David collected materials for the Temple which his son and successor was to build, he is said to have “prepared iron in abundance for the nails for the doors of the gates and for the joinings and brass in abundance without weight”; the last of these probably signifying copper and bronze without weight, an expression from which it might be applied that copper and bronze were more abundant in Judæa than iron. The Tyrians most probably fur-

nished the Jews with all their metals, for they themselves, mere shepherds, herdsmen and rude husbandmen, are not likely to have been skilled in mining and the reduction of metals, not to say that their country is not rich in metallic ores. From the discoveries of Mr. Layard, we find that the Assyrians, one of the greatest and most civilised of the nations of ancient Asia, were well acquainted with gold, silver, copper, iron, tin, and bronze. Iron appears to have been with the Assyrians in more general use than either copper or bronze; although, from its more rapid decomposition, we have necessarily fewer relics of it. According to Mr. Layard, it was, indeed, an export from Assyria to Egypt. Iron and steel, although not cast-iron, appear to have been known to the Hindūs beyond the reach of all record. So have been copper, tin and bronze. Iron alone is extensively diffused over India. Copper is sparingly produced, and gold, silver, tin, lead and zinc have immemorially been importations. India, with its advanced civilisation, may be considered as one of the countries in which the art of reducing the ores of iron to the metallic state was first invented. Bronze has also been immemorially known to the Hindūs, and has been found in very ancient coins, images, and sacrificial utensils. I am not aware, however, that there is any evidence of its having ever been used in India in the fabrication of tools or cutting instruments, as it was in Egypt, Greece and Etruria. One of its elements, tin, is not a product of the soil of India, but an import from a comparatively remote country, while at the same time the manufacture of steel is to all appearance of great antiquity. We may safely conclude, then, that bronze did not precede iron, but, on the contrary, followed it among the Hindūs. The probability is, that the inventions both of iron and steel were made in India at several independent points, for I find that not only do the names of these commodities, but of the tools and implements made from them, differ in the different classes of the languages of that extensive country. The Chinese now possess, and seem for many ages to have possessed, far more metallurgic skill than any other people of Asia, unless we except the Javanese, who seem to be, in this respect at least, their equals. Indeed, it may be said that, in metallurgic skill the Chinese excelled the nations of Europe even down to the middle of the last century, although now so far behind them. This people must be set down as one of those among whom the use of iron preceded that of bronze. As to the races of man in Europe, in so far at least as the more advanced of them are concerned, the use of iron and bronze seems to have been cotemporary; bronze being preferred for cutting instruments down to the discovery of the art of case-hardening iron, when the last superseded the first. In the time of the Homeric poems and of the early Greeks, the sword was of bronze, but as the Greeks advanced in civilisation it was of hard iron. As to the very rude people who constructed the pile villages of the Swiss lakes, and the yet ruder of Denmark, of whose existence, like that of the savages of Australia, the only record consists in huge heaps of shells, the refuse of their coarse diet, it may be readily conceded that bronze was known to them before iron. But it is impossible to imagine a

people in so barbarous and precarious a state of existence to have been the fabricators of their own tools and weapons of such a material, for this would suppose them possessed of the art of reducing the ores of copper, of importing tin, and of smelting, moulding, and casting bronze. It is evident to me that the implements and weapons of bronze which so rude a people possessed must of necessity have been supplied by strangers more advanced than themselves. Those who furnished them to the Swiss pile-builders would probably be the Etruscans and other advanced people of Northern Italy, and they would do so much in the same way as the nations of Europe have supplied the savages of America with tools and weapons of iron—that is, in exchange for furs and other crude native productions. In answer to the question, But from whence came the bronze weapons found in the Scandinavian shell-heaps and peat bogs? He came to the conclusion that their bronze swords were of foreign fabrication, introduced in the course of trade. From the small size of the hilts it may be inferred that they were the work of some Asiatic people, and probably of the same who introduced into Scandinavia the Runic characters. He thought the iron found in the diluvium of the Swiss pile-villages was the produce of some Gallic or German nation more advanced than the rude builders themselves, while the bronze relics would be of foreign importation. The frequency of bronze and the infrequency of iron relics, with the discovery of the latter only in the last or more recent stratum of the alluvium is, he thought, reasonably accounted for by the far more perishable nature of iron.

Dr. DAUBENY thought that the hypothesis of the three ages was well established, but no doubt there were intermediate links. He had latterly discovered in Brittany a variety of tools of a superior style and structure, and exhibiting much more art and civilisation, than those which had been found in Normandy. This was also perhaps true of the Druidical remains found there; and the question was, whether the priests who placed them there used those instruments. Upon those remains were found engravings of such implements, and one other; and this rendered it probable that no others were in use at the time. He was rather surprised to find Mr. Crawford saying that the iron age preceded the bronze, and quoted several passages of ancient history to show that it appeared that not only did bronze precede, but was preferred to iron.

Mr. VIVIAN said he had lately accompanied Professor Phillips in his researches into the deposits of the Swiss lakes, and he found that they showed no relative position of stone, bronze and iron, as exhibiting the relative age of the instruments, but Swiss naturalists concurred that there was an order of appearance of stone, bronze, and iron of such a nature in the bog in which they were buried, but they could not determine the antiquity of the deposit. He was himself inclined to believe that stone, bronze, and iron implements were used by different classes of the same tribe in the same way as firearms were found in use among different ranks of Negroes in Africa at this day—the highly-finished arm by the chiefs and the common flint lock by the common natives; just so the flint were used by the men, and the metal implements by their chiefs.

Mr. CARTER BLAKE pointed out that the bronze remains found in the Scotch kitchen-middens were almost identical with those of the present day. Mr. Crawfurd had told them that no man was able to distinguish the skulls of Arab, Hindū, and European; but on the previous day he had told them that each of these people were of different origin. This placed Mr. Crawfurd in the dilemma of affirming that nations of wholly different origin might have identical cranial form. He was sorry that neither in the paper just read, nor in that form of it which had previously been read in London, had Mr. Crawfurd alluded to M. Pouchet's theory, that the small helves of the instruments of the Scandinavians was due to their having been used by the heroines of Norse romance.

Mr. CRAWFURD: The theory might be wild, but it was ingenious.

Professor RAWLINSON said he agreed in the main with the views of Mr. Crawfurd. They were all aware that different people of the world were even now at different periods of their existence. In many places they were only as yet in a state of infancy, and used implements of bone and stone; in others bronze was added; and then there were people who had used at the same time bronze and iron instruments, until the superiority of iron became generally acknowledged, and the bronze went out of use. Among the ruins of Babylon, however, no iron implements had been found; while stone and bronze had been found in such a position as showed that the stone had been used before the bronze.

Mr. CRAWFURD very briefly replied.

On the Supposed Infecundity of Human Hybrids or Crosses, by J. CRAWFURD, Esq., F.R.S.

He said that connected with hybridity, a theory had lately sprung up and chiefly obtained currency in France and America. This supposed that the mongrels resulting from the union of two different races of the human family ought to be sterile, as is the case with the progeny of two opposite species of the same genus of the lower animals; and to give an example, one of the advocates of the doctrine goes the length of asserting that the continuation of a race of Mulattoes is as impossible as the continuation of a race of mules. He was satisfied that this theory was without a shadow of foundation. The theory was not tenable so far as concerns the races of Europe, since here we see the most mongrel nations not only equal to those the least mixed, but even in advance of them in strength, civilisation, and numbers; witness the French and the English with their American descendants. But even when the races of men are the most widely different, no infertility can be traced in their mongrel descendants, and of this examples in abundance can be produced in every quarter of the globe; and the crosses themselves, wherever found, are unconscious of their supposed incapacity. Mr. Crawfurd, after citing a great intermixture of races that has been going on for at least two thousand years on the African side of the Mediterranean, and many examples of mongrel populations in Asia which multiply just as fast as the parent stock, pointed to America and its islands as the

region in which the commixture of the races, and these, too, of the most opposite character, had been presented on the largest scale. Mexico was a good example. Out of a computed population of 8,000,000, a million only are of pure European blood, and 4,000,000 of pure Indian blood, leaving no fewer than 3,000,000 of *Mestizos*, that is of parties half European and half Red Indian. Thus we have a hybrid people which, instead of dying out, has, since the invasion of Cortez in the beginning of the sixteenth century, come to equal in number the populations of Holland, or of Denmark, or of Scotland. The majority of the present population of Hayti was understood to be a mixed one, consisting of the descendants of Caribs, Negroes, and Europeans. Yet in 1814, when the little colony was discovered, its numbers had increased from 22 to 48; that is, in twenty years' time, deducting the six Tahitian men, the population had more than doubled. In 1831 the number had risen to 87, and in 1853 to 170. Pitcairn Island being found too small to support the colony, it was removed in 1862 to Norfolk Island, and was then found to number 268. In this long time there has been no intrusion either of European or Polynesian blood; so that a hybrid population, consisting, as nearly as possible, of equal proportions of two very opposite races of men, has sprung up, their features and complexion telling the tale of their mixed parentage. This mixed race, instead of dying out as it ought to have done, if there were any truth in the new theory, has increased with a rapidity that has no parallel. The latter part of the paper went at some length into the question in its relation to the lower animals.

Mr. SAMUEL MOSSMAN, of Australia, drew attention to the fact of the rapidity with which the aborigines of Australia and New Zealand disappeared before the Anglo-Saxon. Tribes in the neighbourhood of Melbourne and Sydney, which once numbered 6,000, had now but ten representatives, six of whom were women, but every one of them was sterile. An Australian chief once asked him how it was that, with ten wives, he (the chief) had no children, while the Christian missionary, with but one wife, had ten children. Mr. Mossman said it seemed to him that where the extremes of the human race—like the Australians and Anglo-Saxon—came in contact, the highest power crushed out and destroyed the lowest, for no one had ever seen in Australia a third remove from the savage and the white man. In New Zealand he had seen the hybrid of a New Zealander and a Negro—but it partook more of the characteristic of the Negro; thus showing that it was the higher race. The gold discoveries had caused a large immigration of Chinese, many of whom had now become very wealthy men. One of them married a cultivated English woman, and they had a large family of fine children; but in them again the influence of the mother was seen in the greater predominance of the English over the Chinese characteristics.

Mr. CARTER BLAKE said that he felt some interest in hybridity, inasmuch as he had recently edited the work of M. Broca on the subject. Mr. Crawford's paper was so irreconcilable with all the known facts, that he presumed that the Vice-President of the elder and smaller Society in London had made a series of original observations of his

own, which were not referred to in his paper, and which overturned all the facts of previous writers. Mr. Crawfurd had stated that the progeny of the wolf, dog, jackal, fox, etc., breeding *inter se*, was infertile, hereby contradicting Isidore Geoffroy St. Hilaire. No doubt Mr. Crawfurd had read the work of that author, and could state the original facts which contradicted his conclusions. Again Mr. Crawfurd spoke of the "wild llama" and "wild alpaca". By the wild llama he presumed that Mr. Crawfurd meant the huanaco; but what the wild alpaca was like, in what zoological work known to Mr. Crawfurd it was described, or whether it was to be relegated to the same limbo as the sea-serpent or the mermaid, Mr. Crawfurd, the creator of the new species, could alone explain. Such being the value of Mr. Crawfurd's facts, what reliance was to be placed on his accurate interpretation of the theories of antagonists? He actually ascribed to Dr. Broca the promulgation of a theory which was originally put forth by Jacquinet, at least twelve years before Broca's work was penned. Had Mr. Crawfurd read Jacquinet's work? He regretted to state these facts, inasmuch as he had not had an opportunity of bringing them forward on the occasion on which Mr. Crawfurd's paper had been previously read, and amply discussed in London, and trusted that foreign anthropologists would not take the present discussion as a sample of the style in which Human Hybridity was brought under the notice of the great scientific congress of England.

Vicount MILTON said, in relation to America, that the offspring of the Indian and the white was a very healthy race; but it was questionable how far that health was transmitted, and whether it would be found in the fifth generation. In some cases he had a liability to attack and decay from scrofulous diseases in the third and fourth generation.

Mr. CONWAY, a native of Virginia, as the son of a slave-holder, and speaking from experience, said the admixture of white and black produced a finer race than the black, whether in point of health or intelligence. Offspring of this kind were remarkable for a certain talent, eloquence, and general ability, and promised a superior order of intelligence for the country.

The early Migrations of Man. By JOHN CRAWFURD, Esq., F.R.S.

It contended that the supposition of distant migration in support of "the hypothesis," as Mr. Crawfurd termed it, of the unity of man, and the derivation of the many cases which now exist to a single family, and a single spot of the earth's surface. He contended that such migrations were physically impossible, and drew his arguments chiefly from historical sources.

The Rev. C. W. NEWNHAM said there was a certain old book which the believers in the "hypothesis" considered far more ancient and trustworthy than any Mr. Crawfurd had quoted, and he protested against mere suppositions of these days being set up against what they believed to be revelations of old.

Mr. CARTER BLAKE asked how Mr. Crawfurd accounted for the remarkable general similarity of cranial form between all the nations

from Cape Finisterre to Cape Comorin. Was not this, to a certain extent, confirmatory of the Aryan theory? He was not himself a strenuous advocate for that hypothesis, but was surprised to see that Mr. Crawford thought fit to reject it, whilst he did not pay the slightest attention to the physiological evidence. As for the remarks of the Rev. C. W. Newnham, Mr. Blake thought that considering the tone of the discussion, all questions relating to the Bible should be entirely excluded. Such as had most respect for the Bible might least desire to have it discussed before Section E.

M. VAMBÉRY and Mr. POOLE briefly supported the Aryan theory.

Professor RAWLINSON explained and supported the principles of that theory as propounded in England by Professor Max Müller. They rested more upon an identity of grammatical structure than the vocabularies of languages. He contended, in conclusion, that the arguments of those who contended that every different language proved a different race, and could not have been derived from one family, or the different languages from one language, must tend to the Aristotelian theory of the eternity of the world, and the eternity of man. He contended that the hypothesis of the creation of the world, and the creation of man, was the simplest explanation of the difficulties; and the *onus probandi* lay upon the opponents. Their great difficulty was the comparative recent age which the chronology of Genesis gave to the world and man. There were other ancient versions of the Scriptures, the Greek, the Samaritan, and the Hebrew, and in all those that chronology differed; and he refused to be bound to choose between them, and he held himself at liberty to say, that it was possible that we had not just the original chronology. He did not think that revelation meant to give a history of the world; and it did not detract one whit from the credibility of the Bible that it should have been allowed to have become corrupted in that point.

Mr. CONWAY, of Boston, argued, from the pertinacity with which the native Indians and the Negroes of America adhered to the soil, that those races could not have been of a migratory disposition.

On the various forms assumed by the Glottis. By GEORGE D. GIBB, M.A., M.D., LL.D., F.G.S., F.A.S.L.

The author stated that it had been an accepted axiom that, for the most part, the glottis assumed a triangular form, and this view was taught almost to the present hour. This led him to go into the question of what were the various forms assumed by the glottis, and in what manner did they arise. In solving this question, he briefly considered the relation that subsisted between the true vocal cords and the thyro-arytenoid muscles; and he then made some observations upon, and briefly described the arrangement of, the muscular fibres, especially as lately made out by M. Bataille, which, he said, had much to do in regulating the form of the glottis. He adopted that author's division of the muscle into three bundles, and approved of the name of *triceps laryngea*, which he had given to it. He then entered upon a description of the matter of action of the various fibres, and its influence in giving a form to the glottis. This varied

from an isosceles, equilateral, or right-angled triangle, to a lozenge or barrel, circular, oblong, lanceolate, elliptic, pyriform, or arched and linear form. The commonest of these was an isosceles triangle; and a rare form was a right-angled triangle, which he had never met with unless in women, when the larynx is shallow from before backwards. A parallel or oblong glottis he explained, and showed how it occurred; he had seen it several times, but necessarily narrow, because the vocal cords, under such circumstances, could not be separated more than one or two lines at their point of origin. A more remarkable form than any of these was the reversal of the triangle, the glottis during the utterance of continuous falsetto sounds assuming the shape of a narrow Y, then a narrow V, and then a narrow oblong, before the termination of the experiment. The cause of this, with an illustration, was given. A pear or bulbous shape, like the new form of wine decanter, and an arched form, composed of the narrow segment of a circle, were other forms noticed. He concluded with some observations on the form of the glottis seen in the chest and falsetto registers, and the parts in action.

A discussion ensued, in which Professor Bennett, of Edinburgh, Dr. Hayden, Dr. Turner, the President, and Dr. Crisp took part.

The Larynx of the Negro. By GEORGE D. GIBB, M.A., M.D., LL.D., F.G.S., F.A.S.L.

The author's paper was upon the special differences between the larynx of the Negro and the white man. After describing the larynx of the latter, he remarked that the essential point of difference between the two consisted in the invariable presence of the cartilages of Wrisberg, the oblique or shelving position of the true vocal cords, and the pendent position of the ventricles of Morgagni. Any one familiar, said the author, with the dissection or examination of the larynx in ourselves, cannot but perceive that these peculiarities are not observable unless we will admit the occasional presence of the first in certain wind-pipes. Now, we may be told by some anatomists, that they have commonly seen these Wrisbergian bodies, and that they are not rare, but that sort of evidence counts for very little. These small bodies (the cartilages of Wrisberg) are either very minute and rudimentary, or wholly wanting in the white race, whilst they are large and well developed and always present in the black or coloured races. It may be mentioned, also, that I have dissected them in monkeys, in whom, even the smallest species, they are relatively large in comparison to the size of their bodies; and, with the object of attracting attention to them in the quadrumana, I exhibited specimens before the Pathological Society of London, in March, 1861, three and a-half years ago. Those who argue that the black race are inferior to the white, and approach the quadrumana in some of their features, would naturally lay hold of what I have stated to prove the truth of this theory, especially as regards the Wrisbergian cartilages and the position of the ventricles. But I take the opportunity of declaring at once, that whatever views may be entertained by anthropologists respecting the position in the scale of being occu-

pied by black and white, they are discarded from this communication.

Dr. CRISP remarked on this paper, that even if Dr. Gibb was right, and these cartilages pointed out existed, it was no proof of the degradation of the Negro. Extraordinary statements had been made on this subject. It might be that these particular cartilages were given to the Negro just the same as a black skin was given him, and thus did not imply the least degradation.

Mr. CARTER BLAKE called attention to the statement of the late Professor Eschricht, who found the cricothyroid muscles very large in the Negro, a portion of their fibres ascending to the internal surface of the thyroid cartilage. M. Pruner-Bey had suggested that this might be a trace of the internal cricothyroid muscles of the *hylobates*. Perhaps Dr. Gibb would offer some opinion on this hypothesis?

In reply to questions from the Rev. Dr. Macauley and Dr. Heaton,

Dr. GIBB said that he had examined the larynxes of 100 white men and 58 blacks, and he had in every case found sufficient distinction to warrant him in introducing the subject to the notice of the Association.

Cranial Deformities. By WILLIAM TURNER, M.B., London.

In this paper a peculiar form of head was described, in which the frontal eminences were completely absent, and in consequence the forehead above the eyebrows and orbits was flattened, or even concave. In the middle line, however, the forehead projected forwards, and formed a sort of beak, narrow below at the root of the nose, but swelling out laterally at the line of the hair. Looked at from above, the head was broadly ovate, or even somewhat triangular, the apex being at the forehead, the rounded base at the occiput. The peculiar shape of the head was noticed in the case described at the time of birth; the child was well-grown and intelligent. The head evidently corresponded to the form termed Trigonocephalus, by Welcker. The mode of production of this form of head was discussed, and the conclusion was drawn that it was due to a fusion of the two centres of ossification of the frontal bone, and consequent premature obliteration of the frontal suture.

The Ethnic Relations of the Egyptian Race, by R. STUART POOLE, Esq., F.S.A.

The author inquired what light the ancient Egyptian monuments throw upon the question of the single, or more than single origin of the Egyptian race; and thus he called in the aid of archæology in the examination of one of the most interesting problems of ethnology. Before speaking of the Egyptian race, the paper thus adverted to the distinction of races.

The simplest division to which we can reduce the present population of the world is into black and white and intermediate races. Of the black race, one of the varieties of the lowest type is the African negro; of the white, one of the varieties of the highest is the Shemite Arab. I select these two varieties, which may be placed very nearly,

if not quite, at the two extremes of the ethnological scale, as the lowest and the highest varieties, because for the last three thousand years they have been, as the Egyptian monuments prove, the two most typical neighbours of the Egyptians. I need not describe them further than by the remark that the true African negro is the blackest Nigritian known to us, and that the Arab differs very little from the finest western European.

The ancient Egyptians constituted a variety of what has been called the Ethiopian race, but which, as the term Ethiopian has been applied to Nigritians, and as Ethiopic was the language of Shemites, or, at least, Caucasians, I should prefer to call the lower Nilotic race. The modern Egyptians constitute a somewhat different variety. Mr. Poole then described the old variety, and showed how it differed from its successor.

There is a strong likeness to the Arabs, but the sharp grey eye, the muscular calf, and the arched foot, are always wanting in true Egyptians. It has been thought that the Copts, or native Christians, more nearly represented the ancient people; probably this is true, and they seem generally to be more like the representations of the monuments, but the difference between the Muslim and the Christian divisions of the population is not sufficient to be clearly defined.

He found that, in the space of four thousand years, the Egyptian population has, in certain particulars, increased in likeness to the Arab, and decreased in likeness to the Negro, and it may be fairly inferred that it has, in general, approached the former variety, and retired from the latter. During the last three-fourths of this period, the two related varieties, the Negro and the Arab, have themselves undergone no change or modification. What is the cause of the modification in the Egyptian variety of man? Were the answer not afforded by history, it might be thought that, in the lapse of ages, a Negro would, under certain conditions, become a Shemite by a natural transformation. History, however, tells us that Egypt has been constantly colonised by Eastern settlers; its ancient subjugation by the shepherd kings, the successive invasions of Assyrians, and even of Persians, tended, if I may be allowed to use the expression, to Semiticise the eastern portion of Lower Egypt. But what appears to have been anciently but partially effected was begun on a scale of completeness by the Arab conquest, ever since which the Arabs of both deserts, but especially of the eastern, have largely settled in Egypt; and such names as *Benee-Suweyf* and *Benee-Hasan*, tribe names abundantly applied to villages, and even, in the former case, to a town, attest the extent of this colonisation. *El Makreezee*, the Egyptian historian, wrote a special treatise on the desert Arab tribes settled in Egypt. That country was, indeed, always the gate of Africa to the Shemites: in remote times, they had already passed through it to colonise northern Africa to the west of Egypt. The Arab conquest, removing all restrictions, unlocked the gate, and an active and ambitious people was not slow to avail itself of the almost boundless field of enterprise afforded by the unknown continent, to which the growing power of the Tartar races in Asia and Europe, in

a few centuries, limited its enterprise. If we read the history of northern and central Africa, and see how, to this day, the Arabs have been pouring, mainly through Egypt, into their one great field of colonisation, we shall wonder not that the Egyptians have become more Arab than they were, but that the permanence of Nigritian characteristics in their type still asserts itself. So evident is the case, that it has never been supposed that here we see an instance of the change from one type or variety to another by the operation of internal causes. But it has not been sufficiently observed that, in this case, a period of four thousand years gives, if I may be allowed to use the analogy, no parallax. If four thousand years is a mere point in the change from Negro to Arab in that very part of the world where, if anywhere, such a change took place, all efforts of human arithmetic could not guess the vast period of time required for the transformation, and the antiquity of man would call for an extension of the later geological ages. If therefore, the Egyptian, Arab, and Negro varieties of man remained unchanged for at least three thousand years, we can only suppose their independent origin, or that the intermediate variety is the descendant of its two important neighbours. The ancient Egyptian monuments simplify the question before us. Egypt, they show us, was occupied by the Egyptians only. On the eastern frontier, and occasionally making inroads into the country, were Arabs, yellow in complexion, with red beards, blue or grey eyes, and all the characteristics of the purest Arab blood of to-day, the red man, like Adam, Edom, Phœnix, Erythras. On the western frontier, but not reaching far south of the Mediterranean, were other Arab tribes marked by the same characteristics, except that, like the Berbers and Kabyles of to-day, and like the more recent Arabs of the coast towns of Northern Africa, they were white in complexion; these also made predatory incursions into Egypt. All the land south of Egypt was considered to be Nigritian: all the southern tribes are represented as pure Negroes. Although the Egyptians are very precise in distinguishing the nations and tribes of Palestine and Syria, as Philistines from Hittites, they show us in Africa and on its eastern frontier no varieties but the Egyptian, the Negro, and the Arab. Does this glimpse of ancient geography afford us a key to the origin of the Egyptian race? If the Arabs advanced into Africa after it had been mainly peopled by Negroes, they would have found the strip of coast land which the great desert cuts off from the inner part of the continent unpeopled. Negroes never have thrived in, and never would colonise, such a country as that. Here, therefore, the Arab type would have been retained. The valley of the Nile would have been occupied by Negro tribes, to whom its characteristics would be especially suitable, and the eastern colonists would have intermixed with them, and so produced the remarkable variety which seems to have preserved the traits of a double ancestry. Passing on to other indications that may test the correctness of his first result, the paper considered the religion, art, and language of the Egyptians. If we carefully compare the Egyptian language, as we have compared the race with its neighbours, we are struck by the union of Nigritian

and Semitic characteristics. It may be explained as a Nigritian, or, at least, barbaric vocabulary combined with a Semitic grammar. Here, as before, a double origin explains what was before inexplicable. It is quite natural that a partly Nigritian race, should have a partly Nigritian vocabulary. It is equally natural that a partly Shemite race should not have been content with a Nigritian grammar. The double origin of the Egyptian race explains the double character of its language. These opinions as to the explanation of the characteristics of the Egyptian race, and of its ancient religion and language, which I have stated in my own words, were first made public a few years since, in a work edited by me, *The Genesis of the Earth and of Man*, the author of which I regret that I am not allowed to name, as his high reputation for scholarship would have added great weight to my statement. I have accepted this explanation because it affords a solution which seems to me obviously true of the great difficulties of my special study of Egyptology.

In conclusion, the writer drew attention to the inference as to the origin of the races of man, and said: The idea of two independent origins of man is repugnant to many of our most lofty and most really humane feelings. But the question before us is whether it be true. If true, it must be accepted with as much resignation as that with which all white races accept a superiority due to their higher intellectual capacity, and which establishes moral consequences, although it may not prove the origin of duality of race. The black race only, as thought, though falsely, to be represented in a hybrid descendant three-fourths of white origin, is admitted tardily and reluctantly by the strongest upholders of the absolute unity of man to the social privileges of the dominant race.

The Turcoman Tribes of Central Asia, by M. VAMBÉRY.

This was preceded by a description of the route traversed by M. Vambéry through Central Asia, by Sir Henry Rawlinson, who said that M. Vambéry had been no mere dilettante traveller, but had gone to the far east for the purpose of discovering the original source of the Hungarian race; and, in pursuit of that object, had been the first European who had visited and described Samarcand. M. Vambéry's paper showed that the Turcomans inhabit that tract of desert land which extends on this side of the river Oxus, from the shore of the Caspian Sea to Balkh, and from the same river to the south, as far as Herat and Astrabad. They divide themselves into *Khalk*, tribe of; *Taise*, branch of; *Tire*, line or clan. Naming only the principal divisions, we find:—1, Tchaudor, 12,000; 2, Ersari, 50,000; 3, Alieli, 3000; 4, Kava, 1500; 5, Salor, 8000; 6, Sarik, 10,000; 7, Tekke, 60,000; 8, Shöklen, 12,000; 9, Yomut, 40,000; total number of tents, 196,500. Reckoning each tent to five persons, we have the sum of 982,500 souls. *Political conditions*.—They have "aksakals," who are respected, but not obeyed. All is governed by the "Deb," custom, usage. Religion has a very small influence. They kidnap their co-religionists. The different tribes live in great enmity, which is fortunate for Persia; for an union of this warlike people would destroy

the latter country. Nevertheless, they do not fear Persia even when divided, but they fear the discipline of their Russian opponents. The Turcoman is a Tartar, but, owing to intercourse with Persians, only some tribes have retained the original type; they are the most martial of all the peoples in Central Asia. Their tents are the best of all the nomades in these regions. The Turcoman is chiefly occupied with plundering and kidnapping (a very honest work in his eyes), their Alamans (Razzias), choose a serdar, and give a piece of silk to the infirm and priests. Their attack is like that of the Huns, and is rather a surprise. The Persians are always vanquished by them. Their first and principal aid is their horse of Arabic origin; it is a very superior creature, and much esteemed by the son of the desert. In his domestic circles the nomade is indolent, and particularly fond of a national poet, *Makhdumkuli*, whose biography is ornamented with fables. The origin of the Turcomans is Mangishlak, and are sprung from two chiefs, Tön Khan and Esen Sei. The Turcomans, as soldiers, are in the service of the kings in Persia, of the emir of Bokhara and Khiva, and the latest line they helped the reigning family of Persia.

On the Ethnology of the Iranian Race, by M. NICOLAS KHANIKOFF.

Starting with the Aryan theory of the original identity of the Hindus and the Iranians or Persians, the writer proceeded to answer the question: where was the cradle of this Iranian family of the Aryan race, by a learned investigation into some of the most ancient traditions of the peoples of this family, and an examination of their ethnological value, beginning with the analysis of the Vendidad and the poem of Firdoosi. Those investigations, he argued, gave us some right to believe that the Iranians were scattered to the north, west, south, and east of the fertile valleys situated between the Hindoo-Koush, the chains of Pouman and of Roohibaba, and of the well-watered plains of Herat, Seistan, and Kirman. He considered, therefore, the Persian inhabitants of the above-mentioned territory, as the true Aborigines, and among them he believed we might hope to find representatives of the primitive type of this family. The remainder of the paper was taken up by the consideration, at length, of facts which might hold for or against this conclusion.

The Meenas of Central India. By Lieutenant-Colonel SHOWERS.

"After some preliminary remarks, the paper proceeded as follows. While one race of aborigines, occupying the western district of the Meywar States, were being reclaimed from their lawlessness and reduced to habits of order and usefulness to our Government, another race, the Meenahs, inhabiting the north-eastern districts under the same political jurisdiction, were yet revelling in the excesses of their immoral lawlessness. And as this is the race referred to in the title of this paper, I may mention, in explanation of the circumstances under which the Meenahs fell particularly under my observation, that in the year '54 the lawless excesses of the tribe, emboldened by long impunity, had reached to such a pitch of audacity, that they attacked

and pillaged several walled towns in the British district of Ajmeer, carrying off not only the entire plunder to their hill fastnesses, but numbers of the inhabitants, also, holding them to ransom. It fell to my duty then to take them in hand, and proceeding to Jehazpore, the centre of the disturbed district in question, measures for its tranquilisation and for reclaiming the race were then devised and set on foot, as they obtain in progress at the present day. From time immemorial, Jehazpore, in the state of Oodeypoor, had been a notoriously disturbed district. Our distinguished Vice-President, Mr. Crawford, can speak to this point as far back as sixty years ago, having been robbed by the Meenahs of this district, as he informs me, during Monson's memorable retreat, of which tradition he is probably the sole monumental survivor. A brief period of tranquillity was accorded to Jehazpore during the early part of the present century by the appalling severity of Zahin Singh's measures, after Jehazpore fell into possession of Kotah in 1806. On a robbery being traced to a village it was surrounded, all the men found in it at once decapitated, and the women compelled to carry the bleeding heads in baskets full upon their own heads and walk in grim possession through the neighbouring villages, singing their usual jubilee songs. There are men still living, and I have conversed with them, who have witnessed these strange processions. To guard against a recurrence of such fatal surprises, the inhabitants of some of the Meena villages have distributed themselves in detached huts on the surrounding knolls, so as to serve as a chain of watch towers for mutual security. However revolting the system referred to, it succeeded in effectually checking the excesses of the Meenahs, during the period that Jehazpore remained in the possession of Kotah. A gold bangle might drop off a woman's ankle—so an ancient of those days illustrated the fact—and there it would lie till the drift sand covered it, for woe to the village to which the bauble might be traced.

On the restitution of the district to Meywar, in 1819, it soon relapsed into its former disturbed state. Jehazpore was a position well chosen for the purposes of the tribe, being a strong hilly and jungly country where the boundaries of four foreign states meet, viz., Meywar, Jyapoor, Bondee, and Ajmere. There are twelve tribes of Meenas in Central India, but the one under notice is the Purihar tribe. There are descendants of the Purihars who were the dominant race in Marwar till dispossessed of their ancient capital (Mundore) by the Rhatores, towards the close of the fourteenth century. Though defeated, the tribe would appear not to have succumbed to the new rule, as there are no descendants of them, I believe, to be found in Marwar at the present day, but emigrating, they got possession subsequently, it would appear, of Bagherah, in the present Aymere Istumraree, and contiguous to some of their present haunts. This their genealogists represent to have been in the second generation from Narh Rao, the last Mundore prince, who perished with his dynasty. In a generation or two afterwards, they are found in the chronicles, lurking on the quadruple boundary above indicated, a race of outcasts, without a common head, and such they have continued

ever since, their hand against every man, and every man's hand against them, plundering in gangs (of from 150 downwards), and joining any of the great marauding movements that have from time to time been organised under noted leaders. Thus, in 1847, some of the boldest of the outlawed Thakour Jowahir Singh's followers were these Meenas. The same indomitable spirit which carried the Purihars forth out of the land of their lost dominion, seems to have maintained them in a state of wild independence throughout the long interval since, for though nominally owning allegiance to the states, upon the verge of whose territories respectively it has suited their purposes to locate themselves in fallahs or gangs, to increase probably their chances of evading pursuit by enlisting in their favour the national jealousies of the Rajpoot states; yet, fortified by traditions of former ascendancy, they have never really succumbed to any power, but hanging together as one man, have always united to repel the frequent futile attempts that have been made from time to time by the rulers of states individually to coerce any of the Meena subjects, so called. The aggregate of male adults in the tribe is about 24,000; of this number, about 10,000, distributed in 200 villages, are located along these border tracts. Individually, the men are brave to desperation, athletic and hardy, many of them tall, with fine countenances denoting their superior origin. As the Purihar has no resemblance to the aboriginal Bheel, Mair, Kole, or low caste Meena of the Arabulla, so he has nothing in common with these races but their lawlessness. He will neither eat, drink, nor intermarry with them—that is to say, the Purihar will not give a daughter in marriage, though he will take to his bed as many daughters of inferior tribes as he can support. Their pride of birth, indeed, is excessive, fostered by traditions ascending beyond the bounds of history to the region of myth, till they arrive at the celestial origin of the Purihars on the occasion of the creation of the four warrior races on the Holy Mount Aboo. The genealogist of the tribe is the honoured guest in every village he visits in his annual round. Each family engages his company for one entire day, which is occupied in recording in the ponderous MS. volume the recent additions to the family tree, whether in the male or female branch, for even the ancestry of the women is duly recorded. It is easy to understand the effect of this cherished pride of birth in supporting their indomitable spirit. About half the tribe are armed with matchlocks of a superior manufacture, about half with the bow, and all with the Katthar, or double-hilted dagger, which is a weapon they peculiarly affect. It is never detached from their person for a moment, waking or sleeping. Free from the ordinary prejudices of caste, the Purihars are great eaters of meat, which their cattle-lifting raids furnish in profusion, and drinkers of spirits, which serve to increase their natural ferocity. All are married, and many take in keeping besides the widows of their deceased clansmen, to the number of two or three each, or otherwise domicile women forcibly abducted in their raids. Thus the villages have become greatly over-populated, as regards the possibility of finding support from the village lands. Collectively, the most noteworthy circumstance, perhaps, relating to the tribe, was

their utter ignorance, up to the day of my arrival among them, of the true character of the British Government as the paramount power. If any other proof of this were needed than that so recently afforded, by their having deliberately marked out the prosperous British district of Ajmere, as the field of their repeated inroads, it would be found in the record of their systematic obstruction to the officers of our government in the prosecution of their duty, when it leads them to the vicinity of the Meena villages. Their raids into the British provinces brought matters to a crisis, and it was necessary to put them down. But in contrast with the unfortunate contests with savage races which are going on at the present day in other parts of the world, it may not be unworthy of note, that the tranquilisation of Jehazpore was effected without a single shot being fired. Supported by an armed demonstration, the administrative measures were taken, which have been attended with complete success. Mr. Crawford might now march through Jehazpore without the risk of having his cooking kit plundered as before, and his cook roasted on his own gridiron. Our success with the Meenahs here, as with other wild tribes in other parts of India, may serve to prove that the most brutal of such races in a state of nature are still not wild beasts, to be got rid of, but human beings susceptible of being reclaimed by judicious management to habits of order, so as to become peaceable and useful subjects of a civilised government.

Ethnology of Cambodia. By Dr. A. BASTIAN, of Bremen.

The more the extent of those splendid stone monuments, which spread over Cambodia, Laos, and the adjoining provinces of Cochin-China, becomes known and investigated, the more urgently will rise the demand of scientific research to solve the problem of their construction. As the chronicles of Cambodia are quite modern, and on the annals of the Siamese no reliance can be placed, before their appearance in history, one naturally looks to that other neighbouring state which, thanks to its Chinese civilisation, presents something like Chinese regularity and order in its records, viz., to Tonquin. Till now, however, the study of Tonquinese history has been bare of any valuable results. Those parts of the present Cochin China which must have been in communication with, and exercised influence on, Old Cambodia, constituted formerly the kingdom of Ciampa; and the Cochin-Chinese have, since its conquest, done everything in their power to destroy the witnesses of its original civilisation, to extinguish its language and literature, and to disperse the inhabitants, if they could not convert them into Cochin-Chinese. In his *Embassy to Siam and Cochin-China*, Mr. John Crawford already observed, many years ago, that the jungles of the ancient Ciampa (the present province of Binhouan) concealed valuable treasures of Hindû architecture in their impenetrable recesses; and when the continuation of my voyage brought me to Saigon, I lost no opportunity of collecting the information extant, in this new European colony, about the adjoining province of Binhouan; but my inquiries were always cut short with the answer that the dense forests there were nearly uninhabited, that

they were overrun with tigers to a frightful extent, and that travellers landing on the sea-coasts, could not get beyond the small ports there, as the mandarins were watching and closely following them wherever they went. The whole of the information, therefore, I can impart, limits itself to a few notes I took down on meeting a small colony of fugitive emigrants in the interior of Cambodia, and to some communications I gathered from a Tonquinese savan whose acquaintance I happened to make at Saigon. There we found settled in several parts of Cambodia, and on the hilly ranges of Cochin-China, colonies of a people called Cham by the Siamese, or Djam by the Cambodians. The original country of the Djam is said to have been the provinces of Binthouang and of Bink-dink, or the old kingdom of Ciampa. Some represent the Siam to have been the civilised inhabitants of the plain, whereas the Djam had occupied the mountains. The Djam appear, however, although originally the mountaineers, to have received among them the remnants of the plains, who escaped from the remorseless destruction which fell on Ciampa after the Cochin-Chinese conquest. The Djam are at present Mohammedan, but still preserve many traces of their former Buddhism, and have a great number of Malayan words mixed up in their language. The sacred books of the Djam are at present written in Arabic (as in all other Mohammedan countries), but for profane purposes they have preserved (out of their paganism) an alphabet of their own, the letters of which resemble the Siamese a good deal, and differ, like them, from the alphabets of Pali extraction, as in Birma, Cambodia, Laos, etc. The kingdom of Ciampa appears to have occupied the territory which constitutes at present the Cochin-Chinese provinces of Binthouan and Bindinh. The country to the north had, at an early date, been occupied by the Tonquinese (to form afterwards the nucleus of the Cochin-Chinese empire), and the swampy plains, in which the French have established the colony of Saigon, were in former times frequently in the hands of the Cambodians (the Chin-la of the Siamese) under the name of Than-lap or Bay-Encor (the province of the jungles). The modern Cochin-China, or the old Ciampa, is bordered on one side by the sea, and on the other by a high mountain-chain, which, as a spur of the Yunan mountains, runs all along the whole length of its eastern frontier. As a traveller described it to me, Cochin-China forms an inclined plain, which slopes down from the eastern mountains to the sea-coast. The mountain-ranges between the high land of Korat and the eastern banks of the Mekhong are inhabited by the Koung and other tribes (often related to the Laos), who collectively are called Suay or tribute-bearers, because they are released from the duty of performing public works in consideration of their gathering the produce of the country, bees'-wax or ivory, or eaglewood, or other articles, sending them to Bangkok. In the eastern part of the province of Binkdink, where the old capital of the Cam was situated, the Annamites discovered some years ago amidst the jungle a large town in ruins, consisting of fifty towers, which were ornamented with figures of men and animals, and surrounded by a square wall of white stone. The Chinese traveller, who visited Cambodia in the

year 1295, speaks of fifty-four towers in the capital, each containing the statue of a deity, with a serpent in its hand (as it is seen in Java) to ward off those passing. The ruins of Nakhon Vat were likewise accidentally discovered by the Cambodians in the year 1570, after having lain buried in the jungle for many centuries; and in travelling over the frontiers, between Birmah and Siam, I had many spots in that desolate region pointed out to me, where traces of former cities were overgrown and secreted by the dense vegetation.

On the Progress of Civilisation in Northern Celebes. By ALFRED RUSSELL WALLACE, Esq., F.L.S.

The Northern Peninsula of Celebes is the only part of that island which is of volcanic structure. A considerable portion of its surface is elevated 2500 feet above the sea, forming the beautiful plateau of Tondano, in the centre of which is a lake about twenty miles in circumference. Scattered about this plateau are volcanic peaks and ridges six or seven thousand feet high. A fertile soil clothes the mountain slopes of all this region, and assisted by the abundant equatorial rains, and a mild and uniform temperature, supports a vegetation of great luxuriance and beauty, amid which the striking forms of palms, pandani, and tree ferns are very conspicuous. Volcanic eruptions take place at longer or shorter intervals, boiling springs and mud craters abound on the plateau, and earthquakes are of weekly or monthly occurrence. The Dutch have now had possession of this country for nearly two hundred years, having taken it from the Portuguese in 1677. The inhabitants, more particularly on the central plateau, differ from those of the rest of Celebes and of all the other islands of the Archipelago. They often approach the fair complexion of the European, while they retain the straight black hair and general physiognomy of the Malay races. Throughout all the Moluccas the women of Tondano are celebrated for their beauty. In character they are gentle and submissive, industrious, and easily educated. Up to a very recent period they were complete savages; each village spoke a different language, which many of them still retain; they were almost always at war with each other; they built their huts raised upon lofty posts, to guard against attacks, and decorated them with the heads of their enemies. Their clothing was strips of bark, and their religion was a degrading demon-worship. From this state of barbarism they have been raised in a comparatively short time by the Dutch Government. The country is now becoming a garden; the villages are almost all like model villages; and the cottages as neat and pretty as those one sees upon the stage. The streets are bordered with hedges of roses in perpetual bloom; near every village are the most beautifully cultivated and productive coffee plantations, while hill rice fields, and fruit and vegetable grounds, supply abundance of food to the inhabitants. In every village there is a schoolhouse, and in the larger ones a church also. The people are all neatly dressed, and the native chiefs and schoolmasters would pass muster among respectable people in England. On arriving at one of these chief's houses in a principal village, the writer was

received by a gentleman in a suit of black; boys nicely dressed, and with smooth combed hair, brought napkins for him to wash with, and he was furnished with a dinner comprising every European comfort, finger glasses, clean napkins, claret and beer, with a variety of well-cooked native dishes. The house was handsome and lofty, the tables and chairs were of fine native woods, and though made by self-taught natives were of superior workmanship to any but the very best we get at home; and as he sat in the verandah, taking coffee, his eye was gratified by the sight of abundance of beautiful flowers, which, in this delightful climate, are perpetually renewed. This great change has mainly been brought about by the introduction of the coffee plant and by the labours of Dutch Protestant Missionaries. The native chiefs were induced to further the views of the government by the promise of a per-centage on the coffee produce of their districts, and the whole system is carried out by them under the advice and support of the inspectors and Dutch residents. Each family in a village works in the plantations; an account is kept of the number of days' labour each contributes, and when the produce is sent to the government warehouse, and paid for at the fixed rate agreed upon at the formation of the plantation, the amount is divided proportionably among the inhabitants. The chief and the head men of the village decide as to the amount and kind of labour required at each season, and the villagers are called to work by beat of gong at fixed hours. This community of labour is a common feature among people in the first stages of civilisation, and rarely is any other pressure than public opinion required to ensure regularity. Habits of industry are thus fostered, and a considerable sum of money is realised annually by each family. Under the advice and example of the missionaries and government inspectors, the people build neat houses and adopt European clothing and habits. Their children go to school. The Malay language spreads rapidly, and will soon supersede many of the native dialects, and generally morality has undergone a vast improvement. No one who sees these people now, and makes inquiry as to their former condition, can avoid the conclusion that they are both morally and physically far better off than they were. But, it is said, this change has been brought about by "monopoly" and "despotism," and therefore cannot be right. The author believes, however, that the relation of a civilised to an uncivilised race, over which it rules, is exactly that of parent to child, or generally of adults to infants, and that a certain amount of despotic rule and guidance is as essential in the one case as it is in the other. The only question is as to the manner in which the "paternal despotism" shall be carried out, and he thinks that the system of strengthening and regulating the power of the native chiefs, whom the people are already accustomed to obey, of introducing systematic cultivation under government superintendence, and of favouring the exertions of missionaries and native teachers, is a far better plan than throwing open the country to a low class of European teachers and cultivators, which always leads to the moral degradation of the natives and to a conflict of interests inducing mutual animosity between the two races. The

system of the Dutch, as carried out here and in Java, he considers as most excellent, and especially valuable as a first step in the education of an uncivilised race; and he cannot but contrast it with the deplorable result of the free competition of antagonistic races in New Zealand, which can only end in the extermination of a people who might, under more favourable conditions, have been capable of a real progress and a permanent civilisation.

Mr. CRAWFURD said he had neither expected to have an apology for monopoly nor despotism from Mr. Wallace. The system which Mr. Wallace had lauded was simply the enforced coffee labour of Java. It was a system that treated the people as children, but the people were not children; and something better than flogging them to make them work hard had been adopted at Singapore, and more particularly at Pigne, where 40,000 or 50,000 natives had been converted to Christianity, and one chief had become, inch by inch, a free-trader. As to the Maories of New Zealand, they were a very different race from the people of Java or Minihassa. We had done a great deal for these Maories, and had treated them on terms of equality. We had civilised them from their abominable savagery, and made Christians of them, and some, though they had plenty of land, would not let us have any of it; but if they resisted a superior race, they must be taught that they must give way, and he did not care, if they resisted us, what became of them.

M. VAMBÉRY supported the argument of Mr. Wallace, that savages were children, and we must educate them as we do our own children, not because they desired it, but because they needed it.

Mr. WALLACE briefly replied, and said, that with regard to the Maories, Mr. Crawford had enunciated a doctrine with which he would find but few sympathisers in that room.

On a Human Skull and the Bones of Animals found with Pottery in a Kjökkenmödding on the Coast of Cornwall, and on an Ancient Cornish Barrow. By C. SPENCE BATE, Esq., F.R.S.

The remains were found near the ruins of the ancient church of Constantine on the north coast of Cornwall, and proved to be a veritable kitchen midden. Making excavations they found the bones of sheep, small fragments of charcoal, shells of the limpet, smaller whelk and mussel, and some greenstone stones. A shell bed was found rather less than a foot in depth, and mixed with these shells were the bones of a sheep and lamb. Beneath the bone-bed was a layer of vegetable mould, and sand succeeded, next they penetrated a bed of clay of a quality and description that suggested the belief that it formed the material of which the pottery found there was made. Beneath this they struck the rock, which was of clay slate. The stratum beneath the shell-bed consisted of pure sand, about two and a half feet thick, and very full of bones. Much pottery was also found there. The bones were those of sheep, lamb, and roebuck. The pottery consisted of three qualities. He thought there could be no doubt that the small round islet in the middle of the bay at one time was a continuation of the sandhills upon the mainland. It was evi-

dent, therefore, that their separation had taken place since the beds of shells and bones were deposited. This circumstance afforded evidence of two points of interest: first, that the site of the ancient occupation must have been anterior to the period when the land was swept away; and, secondly, that in extent it must have been much greater than it at present exists. From one extreme point to the opposite these mounds continue for half a mile along the coast, taking into consideration that portion which has been washed away. The author thought that we could not fail to recognise this old shell-mound as being the site of a very extensive village of pre-historic man.

Mr. BATE's second paper referred to a mound in the same locality as Constantine Bay, in which, when opened, was found an irregularly shaped stone, about twenty inches deep, and fifteen in diameter. Within this was a rough earthen vase, containing a quantity of bones. The bones and the pot were all much broken; the former were undoubtedly human remains. All the bones, except the spongy parts of the vertebræ, were silicified.

BURTON'S MISSION TO DAHOME.*

By W. WINWOOD READE, Esq., F.A.S.L., F.R.G.S.

IN studying the literature of Western Africa, one is much impressed with the productions of the early voyagers. After wading through the coast experiences of traders, missionaries, or officials, who for the most part repeat one another, only varying the purely personal details, one opens Hakluyt, Purchas, Pinkerton, or Churchill, and plunges immediately into a perfect sea of facts. And these are applicable to the present time; for the last three centuries, which have transformed Europe, have passed, for Africa, like three days. It is true that, since the days of Elizabeth, there has germinated on the sea-board a spurious race, the parasites, and to a great extent the offspring, of the white colonists. It is true that the importation of foreign goods has almost stifled native industry; and this is one cause of the errors of our Anglo-African authors to-day. Formerly the trader, as soon as he went on shore, saw the genuine African moulding his own earthenware, smelting his own spear-head, and weaving his own garment of cotton or of grass. But now-a-days the coast native wears Manchester cloth, sends his slaves out shooting with Birmingham guns, considers it low to drink palm-wine, dishes up his dinner in a

* A Mission to Dahome. By Capt. Richard F. Burton. 2 vols. London: Tinsley Brothers. 1864.

wash-hand basin, and eats it off a willow pattern plate. Works are not uncommonly written upon West Africa, by people who have never come in contact with a *bonâ fide* savage at all. Now-a-days, one must visit the interior in order to find him ; but, having done so, one remembers having read his portrait in Bosman or in Barbot, and discovers that he has not changed in character or customs since they wrote.

With a few exceptions, however, these works, so rich for the student, are quite impregnable to the ordinary reader. They are, indeed, mere catalogues of observations and events ; and their authors describe what they see and do with a charming simplicity, which, in this delicate age, would cause them to be generally tabooed. One naturally looks for a medium between these two extremes ; one desires to find some traveller with sufficient courage, experience, and industry to collect a good stock of raw material, and with sufficient skill of pen to spin it out to the best advantage. The work which is before me, *A Mission to Dahome*, would alone prove that Captain Burton possesses all the qualities required for such a task. It is so minute in details, that it might serve as a Handbook of Dahome ; and yet it is so charming as a narrative, that it reminds one of Defoe. Those also who study this work as anthropologists, may accept its statements with perfect assurance ; its author has studied the physical sciences, and these have perhaps made him (that which he certainly is) the one of all African explorers who is the most *careful of truth*.

In the first chapter of his work, Captain Burton corrects a very important error, into which all African travellers have hitherto fallen, respecting the natives of Fernando Po. "No white man", he says, "has lived long enough amongst this exceptional race of Fernandians to describe them minutely ; as a rule, they have been grossly and unjustly abused." This is a mistake which I must own that I committed in common with the others. I visited only Banapa, which Captain Burton asserts to be "one of the worst specimens of a Bubé village." As it was under the direct supervision of a Christian mission, I had been simple enough to believe that it was one of the best, and described the Fernandians from it accordingly ; calling them also *Adiyah*, a name which I had copied from Baikie, which Baikie had copied from Allen and Thompson, and which is "probably derived from *adios arios aros*, the salutation borrowed from the old Spanish colony long extinct." I remember that these natives were friendly, and even polite ; but there was scarcely a woman among them who was not suffering from some hideous disease of the skin. The men whom I saw were by no means unlike the Fans of the Gaboon ; and in the Gaboon I heard a tradition which related how the Bubé had

originally lived on the mainland, and had been compelled by an invading enemy to cross over to Fernando Po; which might very possibly have been the case. If so, however, the mountain air must have purified the race. "Brightest of all," writes our author, "is his moral character; you may safely deposit rum and tobacco—that is to say, gold and silver—in his street; and he will pay his debt as surely as the Bank of England." That there should exist a tribe of honest Africans is a most significant and startling fact, and one which separates the Bubé most completely from all the tribes which have as yet been visited by travellers.

In this chapter on Fernando Po, Captain Burton adds one last word in favour of a sanitarium upon the coast. In spite of all that he has written, nothing has been done, or appears likely to be done. Our troops are sent to a pestilential station; when they fall ill, they are sent to hospitals which are not malaria-proof, and which therefore become mere dead-houses. Throughout the whole of our possessions upon the coast of Western Africa, there is not a single healthy spot.

"As far back as 1848, the late Capt. Wm. Allen and Dr. Thomson, of the Niger expedition, proposed a sanitary settlement at Victoria, on the sea-board below the Cameroons Mountains, a site far superior to Fernando Po. Since their time, the measure has been constantly advocated by the late Mr. Laird. *E pur non si muove*—Britannia. She allows her 'sentimental squadron' to droop and die without opposing the least obstacle between it and climate. A few thousands spent at Cameroons or Fernando Po would, calculating merely the market value of seamen's lives, repay themselves in as many years. Yet, not a word from the Great Mother."

What renders this phlegm and indifference the more mortifying to those who, unhappily for themselves, have any patriotic *amour-propre*, is the foresight and activity of Spain, a country to which we profess to be so greatly superior. In 1859 the Spaniards reoccupied Fernando Po, and already they have formed a sanitarium—the first upon the coast—and, as Captain Burton statistically proves, with the happiest results. But the sloth with which such affairs are considered, is less nauseous than the false sentiment which prevails in England upon many matters connected with Africa and the negro.

This is a subject upon which I shall speak presently at greater length. I will merely observe now, that Captain Burton proposed, in connection with his Cameroons scheme, to make West Africa our penal settlement. No proposal could be more happy, no project more feasible, than this. It can scarcely be viewed as an experiment, for the experiment has been already made. Angola has been for very many years the penal settlement of Portugal; as Cayenne is that of

France. But public opinion would not sanction the exportation of convicts to a land, where our sailors are sent up rivers, and where our soldiers are sent into the bush to make war and to die—for an idea. We have arrived at a curious state of things when we attach a greater value to the lives of our convicts than to those of our soldiers, our sailors, and our civil officers. It may be Christianity, but it can be scarcely regarded as Civilisation.

Captain Burton was sent to the King of Dahome to plead with him on the two old grievances—slave-exports, and human sacrifice. “In enlarging upon these two last paragraphs,” he says, “I felt a sense of hopelessness, with which the reader of these pages will perhaps sympathise; it was like talking to the winds.” It is, in the first place, quite impossible to make an African understand the philanthropic principle upon which the slave-trade has been given up. The slave-trade was established by the white man: all of a sudden they “turned against it”, and had asked for palm-oil and tree-wool instead. If, from the first, white men had displayed a detestation of the man-trade, Dahome might have formed some faint idea of what it meant; but how explain to him that a revolution has taken place in English sentiment during the last hundred years? how explain to him that a traffic which so short a time ago was looked upon by us as just and honourable, we have lately discovered to be forbidden by all laws, human and divine? He can only infer that we have found “tree-wool” and palm-oil to answer our purposes better than slaves; and that, as the sale of slaves to the Portuguese injures the former trade, we send ambassadors to him requesting the abolition of the latter; nor, in drawing such an inference, would he be very far from the truth. Policy as well as philanthropy demand the death of the slave-trade; the interests of Exeter Hall and Downing Street are in this case united; and some day or other this traffic will be effectually put out. But this can only be done by choking the demand, not by futile efforts to intercept the supply. Sir Charles Hotham asserted before Parliament, that the export of slaves from Africa was in no way influenced by the strength of the squadron; and, as for Dahome, so far from yielding to the petition of this great country, and to its bribe of a carriage and horses, he made a counter-complaint, viz., that slave-ships in which he had an interest had been captured by our cruisers off his coast. It would not astonish me, if some day we received a mission from Dahome requesting us to withdraw the squadron from the coast; and people would then understand how ridiculous our mission must appear to them.

“Upon the second subject, human sacrifice, Gelele declared that he slew only malefactors and war-captives, who, if they could, would do

the same to him; that his own subjects were never victims: that in the accounts reported by 'mutual' enemies, there had been, as he had told Captain Wilmot, a gross numerical exaggeration; in fact, he repeated the statements of a hundred years standing, as the history shows, and his assertions were partially true."

These missions are the offspring of one great error. Diplomats entirely mistake the nature of African constitutions; they believe that Dahome is a real despot, with no limits to his power, and with no chains to his caprice. But in reality he is like the King of Ashanti; like the Kaffir chieftains; like the Emperor of Morocco; and, I believe, like all so-called despots who have ever lived, himself the slave of prejudice and law. In some parts of Africa, for instance, the king may never be seen; he is therefore a simple slave; a toy in the hands of his priesthood and his ministry. In the same manner, Dahome is compelled by *custom* to sacrifice human victims at certain religious fêtes; and—

"It is evident that to abolish human sacrifice here, is to abolish Dahome. The practice originates from filial piety, it is sanctioned by long use and custom, and it is strenuously upheld by a powerful and interested priesthood. That, as our efforts to abolish the slave export trade are successful, these horrors will greatly increase, there is no room to doubt. Finally, the present king is for the present committed to them; he rose to power by the good-will of the reactionary party, and upon it he depends. There is a report, that his grand-sire (Wheenoohew) was poisoned, because he showed a propensity to Christianity, and the greatest despots are in Yoruba easily told to 'go to sleep,' or are presented with the parrots' eggs. Gelele, I am persuaded, could not abolish human sacrifice if he would, and he would not if he could. The interference of strangers will cause more secrecy and more decorum in the practice; but the remedy must come from the people themselves."

However, these Foreign Office missions, useless as they are respecting the objects which they have in view, yet contribute their mite to the great treasury of civilisation. They establish relations of a friendly nature between these barbarians and ourselves; they are the means of furnishing the world with such narratives as the one which we are now considering; and they may be made the means of opening up the country behind the regions of the coast, which at present are kept so jealously by Dahome and others under lock and key.

We now come to a sensational topic which Captain Burton has treated in the least possible sensational manner. Those who know West Africa, can very well guess what the Amazons must be without having ever visited Dahome. In Europe, woman is the ornament of society; in Africa, she is its tool. In the agricultural districts, she

tills the ground; in the gold regions, she washes and digs; and in warlike countries, she joins the army. "It is evident," says Burton, "that such an organisation presents nought of novelty." It is probable that many readers of this book will be greatly disappointed with his chapter "Of the so-called Amazons and the Dahomian Army." But those who prefer fact to fable will be pleased to read a true and plain account of this female corps, and which they will find far superior to the unreal and romantic sketches of Commander Forbes.

The author of *Dahome* devotes a chapter to the "Negro's Place in Nature." It is perhaps the best written in the work, and demands a most careful perusal, not only from anthropologists, but from politicians. The matter is logically arranged; the style is simple and clear; there is no unnecessary parade of scientific terms, nor of coined polysyllables, which is this author's chief foible: it records facts which are all of them derived from personal observation, and draws inferences which, whether they accord with our own views or not, demand our attention and respect since they proceed from the only scientific explorer of the day.

At the meeting of the British Association at Newcastle last year, Dr. Hunt read a paper upon the Negro. I have read it carefully, and find it the best summary of evidence upon the Negro which has yet been published in the English language: it professed to be nothing more than a compilation; and, as such it deserves the highest praise of the anthropologist. Now, it must appear all but incredible to foreigners that, at a meeting, which we regard as our grand annual scientific reunion, a man of science reading extracts from such anatomists as Gratiolet, or from such anthropologists as Waitz, should be hissed by an ignorant mob; and that those whose business it is to feed the sentimental appetites of this rabble should have platformed a Mulatto named Craft, and palmed him off upon them as a Negro. The Negro now-a-days is the darling of a public who cannot tell a Negro when they see him; and authors or orators who desire to be popular must not venture to assert that the convolutions of his brain are less numerous and more massive than those of the European. It is needless to say that Captain Burton has not pandered to the herd; with that courageous honesty which some accuse of being rough and bitter, but which none have ventured to impeach, he has drawn the Negro as he is. In England he justly observes there are at least "two distinct creeds:—1. That of those who know him; 2. That of those who do not. This may be predicated of most other moot points; in the Negro's case, however, the singularity is, that ignorance not knowledge, sentimentality not sense, sway the practical public mind."

Captain Burton points out four popular errors "which are amply sufficient to confuse the whole subject." The first is the confusion of the mulatto with the full-blooded negro. In England, "nigger" is a generic term for all the dark races, pure or half caste. In America, a single drop of black blood constitutes a man a nigger and a slave; whereas a single drop of white blood should constitute him a free man and a citizen. This is the one great evil of American slavery, and one by which Mohammedan slavery has never been tarnished. And it is owing to this in great measure that Toussaint l'Ouverture and others have been cited as samples of the true negro.

"The second error is the confusion of the negroid, the Semiticised, or the noble African with the ignoble pure negro." I have been always most anxious to impress upon men of science this fact, that the woolly-headed, black-skinned, fetid, prognathous negro is by no means to be regarded as the typical African. That he inhabits regions which are in themselves large, but which, compared with the area of this immense continent are comparatively small; and that the real African is copper-coloured, and superior in every respect to the negro, mentally and physically. I went farther than this, and asserted it as my belief that the negro inhabits only the maritime districts, or the marshy regions of the interior; that he originally belonged to the copper-coloured race, and that his degradation of type is due entirely to the influences of climate and food. Simply repeating this belief, I will say no more in its favour at present; the interior of Africa must be better known before the geography of the negro can be mapped out, and science must make prodigious progress ere we can arrive at a satisfactory solution of that great enigma—the *Negro's place in Nature*.

The third fallacy cited by Burton is the belief that white men introduced slavery into Africa. We regard it as an exotic, but it is really an indigenous plant. Domestic slavery is an institution which is indispensable in such a country as Africa. It is indeed a species of serfdom; there is less degradation attached to slavery in Africa than to servitude in England; slaves often rise to great wealth and power; and, in short, it would be difficult to make them understand that they are ill-treated men. As for those who are sold (and this touches the fourth popular error), they are generally criminals or prisoners of war, who if not exported would be killed. In many parts of Africa, especially among the Mandingos, it is considered disgraceful to sell one's slave unless he has committed some very serious fault.

The slave trade may now be considered as almost extinct; and, during the next fifty years it will be definitely settled whether the export of negroes on a new basis will be legitimatised or not. A famine of

labourers in our colonies would possibly bring this about; and, on the other hand, a scheme for cultivating Africa would render it advisable to retain the working population. In such a case, nothing can be done without compulsory labour; the negro must be driven up the ladder of civilisation, at the foot of which he will always lie naked and starving if left to himself. But these prospects are very distant; we are now in a transition state between the old system and the new. We have almost destroyed the old slave trade and slave labour system which tilled the New World and assisted so greatly the progress of the age, but the abuses of which have disgraced humanity. And we have not yet constructed that new system by means of which the negro shall be made a useful instrument in our hands, and by means of which also his happiness and advancement shall be secured.

It has been made a frequent source of complaint against Captain Burton that he derides the efforts of Christian missionaries to civilise the African race. Those, however, who have studied the negro in Africa without prejudice must be of the same opinion as himself. If the Christian religion could really be adopted by a savage and uneducated people, it must have had among the Africans a complete success. They have really no religion: they have certain ceremonies and certain traditions which appear to be the vestiges of a ceremonial and a creed; but they are not bigoted; they are perfectly tolerant; they look upon the God of the white men as a Being superior to their own; and they show no great reluctance to place themselves under his protection. In the first place, however, they are quite unable to understand—not only the Trinity, and other Christian mysteries, which are above the feeble comprehension even of this advanced age—but the whole catalogue of Christian virtues—such as fatherly love, conjugal affection, mercy, pity, etc.—virtues which they do not possess, and for which, in most of their dialects, they have no equivalent words.

It is, therefore, impossible to make these savages embrace that abstract system of metaphysics, which is called the Protestant religion. The Catholic ritual having preserved much of the pious artillery of Paganism is better suited for them, and at one time Roman Christianity actually flourished in the great kingdom of the Congo. But it was only for a time. Polygamy was, and always will be, the stumbling-block of our religion in Africa, and the Bishop of Natal in proposing that Christian converts should be allowed to enjoy this institution, displayed great knowledge of Zulu character, and great ignorance of English prelates. The public will never be competent to judge of African affairs as long as they regard them from an European point of view. It is almost impossible to make them understand that polygamy and domestic slavery and other institutions which in Europe

would be detestable, are in Africa not only venial, but actually indispensable. Christian missions, then, can never succeed in Western Africa, and the most one can say is, that when the missionaries are good men (which is not invariably the case) they do a certain amount of good to those about them.

While we are making these dilettanti efforts to convert a continent by sprinkling a handful of men along its coast, a great work of proselytism is rapidly going on beyond the ken of Christian eyes. The Mohammedan Marabouts, with their spears and their Korans, are over-running Africa; they not only destroy but they construct; they build a school in the smallest village which they conquer; and while they sanction polygamy and slavery (under grave restrictions) they prohibit gambling, drunkenness, human sacrifices, idolatry, and enjoin the worship of the One God.

The civilisation of Western Africa is at present merely a conjecture, and many years will pass before it merits to be termed an experiment. For the mere physical explorer, for such men as Livingstone and Speke, Africa is the land which of all others demands their labours. But Burton, who has not earned a reputation equal to theirs as an African explorer, is far superior to them as an explorer in the aggregate. He has performed a feat which though less sensational, is far more difficult than that of the supposed discovery of the sources of the Nile, viz., his pilgrimage to Mecca. He has travelled across the States and the Rocky Mountains to the Mormon City, and he is now about to turn his back on Africa to enter the vast world of the Brazils. If his health be preserved he will probably gain as great a reputation as a South American traveller as he has gained in Arabia and in Africa. It is, perhaps, not too much to say, that Captain Burton is the only Englishman living who could do this. He is in the truest sense of the word a cosmopolitan. He is versed in the cardinal languages of Europe; he is skilled in all the accomplishments of a soldier and a sportsman; he is a good classical scholar, a profound Orientalist, and has considerable knowledge of the natural sciences. With all this he is a thorough man of the world; unlike the travelled barbarians one so often meets, he is as much at home in Paris as in Dahome. The same inordinate thirst of knowledge which made him wish for these acquirements, the same industry and resolution which have won them for him, will most probably cling to him for some years to come, and if so, there can be little doubt that he will complete his experiences of human nature in all quarters of the globe, and gain a Humboldt-like reputation as philosopher, traveller, and author.

Miscellanea Anthropologica.

The Kirkhead Cave, near Ulverstone. [Extract of letter from Capt. Barrie, R.N., Swarthdale, Westmorland, 15th Sept., to W. Bollaert.] "I went yesterday with a party to grub in the soil of a cavern at Kirkhead, near Ulverstone, of which some notice has appeared in the *Anthropological Journal*. We found several bones of fowls and some of recent animals, all the *marrow*-bones broken. Only one human relic, part of the tibia of a small, but adult, man or woman. There is an immense quantity of mud in the cave, and the explorers have not reached the true bottom yet. The stuff that has been thrown out has nearly choked the mouth; so that to have fair play at it, you would require the services of half a dozen navvies to clear away the rubbish. I have seen bones of badger, rat, wild cat, wild pig, goat, goose, etc., also a bone bored through the side, as if for wearing for an ornament, a piece of the rudest pottery bearing marks of the hand on the *inside*, and a Roman coin: the latter was found close to the surface. There are no marks at present of any stream having flowed either in or out; but in the cave district of Yorkshire it is very common for these subterranean drains to change their course. Much more may be found with hard work; but the season is now so late, that I doubt whether another party will be got up."

Human Hybridity.

88, Cambridge Street, Pimlico, August 27th, 1864.

Sir,—With respect to the question of the existence of half-breeds between Englishmen and the natives of Australia, whose frequency has been denied in the strongest terms by M. Broca, I should like to call attention to the following passage taken from a book entitled *Reminiscences of Thirty-one Years' Residence in New South Wales and Victoria*, by R. Therry, late one of the judges of the Supreme Court of New South Wales. London, second edition, 1863, p. 293. "Even the half-caste natural children of convicts and native women, some of the male portion of which class, on arriving at the prescribed age, are now, under manhood suffrage qualification, *registered on the electoral roll of the New South Wales constituency*, evince a tendency to prefer a savage to a civilised life."

This testimony seems both undeniable and decisive; and we see how it is these half-breeds have no special nick-name, a point on which M. Broca lays great stress. Being generally of convict blood, they are included in that class, as thereby already sufficiently distinguished from the free emigrant.

I am yours, etc., T. BENDYSHE.

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NOVEMBER 3RD, 1863.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

The minutes of the previous meeting were read and confirmed.

The following *Fellows* were announced as having been elected since the last ordinary meeting of the Society. James Reddie, Esq.; Dr. A. Joannides, L.R.C.P; Henry William Wickes, Esq.; John Bailey, Esq., B.A.; Dr. Buchanan Washbourne; G. R. Croxford, Esq.; Edward Clodd, Esq.; Walter Flight, Esq.; A. Ramsay, Esq., jun.; Dr. C. D. Hammond; John de Horne, Esq.; James Rock, Esq., jun.; George E. Roberts, Esq.; Henry Matthews, Esq.; John Mason Hepworth, Esq.; J. King Watts, Esq., F.R.G.S.; Captain Fleming; Joseph James Forrester, Esq.; J. R. Gregory, Esq.; George S. L. Hunt, Esq.; E. Sturman, Esq.; Eric Williams, Esq.; Sidney Faithhorn Green, Esq.; Montgomery Campbell, Esq.; Dr. Mackenzie Skues.

The names of the following *Corresponding Members* were announced. M. d'Omalius d'Halloy; Prof. Buschmann; Prof. Kaup; Prof. C. G. Carus; Dr. Karl Scherzer; Prof. Rüttimeyer; Dr. C. W. F. Uhde; Prof. Raimondy; The Marquis de Vibraye; Hermann de Schlagintweit; Prof. Daniel Wilson; Count Marschall; Prof. Hyrtl; Prof. Hochstetter.

The name of the following *Local Secretary in England* was announced. R. T. Gore, Esq., F.R.C.S.

The names of the following *Local Secretaries abroad* were announced. J. G. C. Ross, Esq.; Capt. W. Parker Snow; William Lockhart, Esq.; W. E. Stanbridge, Esq.; Paul B. du Chaillu, Esq.; Capt. A. H. Russell; A. G. Cross, Esq.; J. S. Wilson, Esq.

The Secretary read a list of presents, for which the thanks of the Society were voted to J. Jones, Esq.; Prof. Busk; Dr. W. Bell; M. Boucher de Perthes; the Anthropological Society of Paris; M. Paul Broca; M. Pruner-Bey; George Tate, Esq., F.G.S.; Prof. R. Owen, F.R.S.; M. Camille Dareste; Prof. Nicolucci; M. d'Omalius d'Halloy; Prof. J. D. Dana; the Smithsonian Institution of New York; A. Stair, Esq.; David Carrington, Esq.; Prof. Eckhard.

Mr. C. CARTER BLAKE presented the following Report on the An-

thropological Papers read at the Newcastle Meeting of the British Association for the Advancement of Science, in August and September, 1863.

In pursuance of a resolution which was arrived at by the Council in August last, your reporter proceeded to Newcastle, and now reports the chief results of his labours.

The delegates from the Anthropological Society, consisting of Dr. James Hunt, F.S.A.; Mr. J. King Watts, F.R.G.S., and your reporter, have, in the first place, to express their thanks to the local authorities for the hospitable manner in which they were received on various occasions, and for the many facilities which were placed at their disposal. The following is a list of the Committee of Section E, to which the delegates of the Anthropological Society were attached, and in which the majority of the Anthropological papers were read.

SECTION E.—GEOGRAPHY AND ETHNOLOGY. *President*: Sir Roderick I. Murchison, K.C.B., G.C.St.S., D.C.L., F.R.S., President of the Royal Geographical Society, Director-General of the Geological Survey. *Vice-Presidents*: J. C. Bruce, LL.D., F.S.A.; J. Crawford, F.R.S.; Francis Galton, M.A., F.R.S.; Sir John Richardson, M.D., F.R.S.; General Sabine, Pres. R.S. *Secretaries*: Clements R. Markham, F.S.A. F.R.G.S.; R. S. Watson; C. Carter Blake, F.G.S., F.A.S.L.; Hume Greenfield, Asst. Sec. R.G.S. *Committee*: Colonel Sir James E. Alexander, K.C.L.S.; Prof. Ansted, F.R.S.; Colonel Baker, R.E.; C. H. Bracebridge, F.R.G.S.; Rear-Admiral Sir Edward Belcher, C.B., F.R.G.S.; John Clayton; George Collinson, C.E.; Ralph Carr; R. R. Dees; Robert Dunn, F.R.C.S.; Dr. H. Falconer, F.R.S.; Captain Goodenough, R.N.; Captain Grant, R.I.A.; Rev. W. Greenwell; John Hogg, F.L.S., F.R.G.S.; Dr. James Hunt, F.S.A., F.A.S.L.; Rev. Edward Hincks, D.D.; J. Beete Jukes, F.R.S.; Colonel Lefroy, R.A. F.R.S.; Commodore Maury, C.S.N.; James McClelland, F.A.S.L.; P. O'Callaghan; Captain Bedford Pim, R.N., F.R.G.S., Assoc. C.E.; Sir Harry Parkes, C.B., F.R.G.S.; Captain Ratcliffe, F.L.S., F.R.G.S., F.A.S.L.; George E. Roberts, F.A.S.L.; Samuel F. Solly, F.R.S.; Mutu Coomara Swamy, of Ceylon; Dr. Julius Schvarcz, F.G.S., F.A.S.L.; Prof. Piazzi Smyth, F.R.S.; G. Edward Salmon, C.E.; William Spottiswoode, F.R.S.; Colonel Sykes, M.P., F.R.S.; Sir Walter C. Trevelyan, Bart.; Rev. H. B. Tristram, M.A.; Alfred Wallace, F.R.G.S.; Prof. Daniel Wilson; J. King Watts, F.R.G.S., F.A.S.L.; William Wheelwright, F.R.G.S.

A negotiation had taken place with the General Secretary of the British Association, having for its object the establishment of a distinct subsection in section E, in which anthropological, including ethnological, papers should be read. This negotiation not appearing likely to produce any scientific result, it was decided that the anthropological papers should be read in section E, and be associated with the geographical and ethnological papers therein discussed. He has now to report on the papers which were read in section E. Forty-one papers were so read; eighteen treating on geographical subjects, to which no further reference need be made in this report; fourteen

on anthropological subjects, and nine on ethnological subjects. A list of these follows.

Anthropological papers read :—

A. Brought up by the delegates of the Anthropological Society.

1. Hunt. On Anthropological Classification.
2. Hunt. Physical and Mental Characters of the Negro.
3. Blake. Craniology of South America.
4. Charnock. Celtic Languages.
5. Lee. Extinction of Races.
6. Roberts and Busk. On the opening of a Cist.
7. Schlagintweit. Ethnological Casts (taken as read).
8. Jacobs. Vancouver's Island (taken as read).

B. From independent sources.

1. Lovaine. Lacustrine habitations.
2. Duckworth. Cranium from Amiens.
3. Turner. Cranium from Amiens.
4. Petrie. Antiquities of Orkneys.
5. Hall. Social Life of Celts.
6. Wilson. Runic Description.

Ethnological papers read :—

A. Brought up by delegates of Ethnological Society.

1. Crawford. Commixture of Races of Man in New World.
2. Do. Eastern Asia (previously read in London).
2. Do. Antiquity of Man (previously read in London).
4. Do. Celtic Languages (previously read in London).
5. Do. Origin of Gypsies (previously read in London).
6. Swinhoe. Ethnology of Formosa (previously read in London).

B. From independent sources (so far as known).

1. Mutu Coomara Swamy. Ceylon.
2. Wallace. On Malay Archipelago.
3. Fleming. Ethnology of Manchuria.

Summary of above results :—

Anthropological papers sent by Anthropological Society, and read	8
Anthropological papers from independent sources	6
Total Anthropological papers read	14
Ethnological papers sent by Ethnological Society, and read	6
[of which four previously, and one original paper.]	
Ethnological papers from independent sources (so far as known)	3
Total Ethnological papers read	9

The above figures are perhaps sufficient to show the care which your delegates attempted to exercise in order that the Anthropological Society of London should be efficiently represented at Newcastle; and your reporter is most strongly impressed with the conviction, that the simple fact that the sister ethnological society, after twenty years

of more or less active existence, could only produce one original paper to be read at the great scientific congress of England, while the Anthropological Society sent eight such original papers, is an omen indicative of the rapid increase in strength and scientific position of the younger and larger society.

Your reporter, whilst he calls attention to these facts, at the same time must express his regret at the state of thought in which the public mind was observed to be at the British Association; it was not such as to encourage anthropologists to believe that their science will become a popular one amongst the middle-classes of England for many years. It will be, however, the duty of any representative whom the Anthropological Society may select to forward their interests at future meetings of the British Association, to lose no opportunity of impressing sound elementary facts, with a view to remove those misconceptions respecting the true objects of anthropology, which proceed from unscientific prepossessions.

The task of giving a detailed analysis of each paper read is one which your reporter will not here attempt. The fact that the *Anthropological Review*, which although entirely independent of the society, is in the hands of every member, has devoted a large space in its columns this quarter to a report of the meeting, will be to a certain extent an excuse for this omission. Your reporter will, however, briefly allude to a few of the more important papers.

Dr. James Hunt, our President, contributed a highly valuable paper on "Anthropological Classification", in which the whole range of the subject was considered and discussed in the most complete manner. This paper will be laid before the society during the present session, and it is to be hoped ultimately inserted in its memoirs, for which its great length will render it peculiarly appropriate. Your President also delivered a paper on "The Physical and Mental Characters of the Negro", on which a long discussion arose, during which, although much feeling was displayed, no scientific fact was elicited. The author will read a paper on a similar subject before the Anthropological Society on the 17th November.

Mr. R. S. Charnock, our Treasurer, sent an exceedingly learned paper respecting the "Celtic Languages", in which the opinions of Mr. J. Crawford were severely criticised. The absence of Mr. Charnock from the Association was an event much to be deplored for philological science, he being at the time absent in the Pyrenees; I understand that he will lay the results of his investigation on the dialects spoken in Andorra before the society at no distant day.

Mr. Lee's paper on the "Extinction of Races" was read, and will also be laid before our society at an early day.

Mr. George E. Roberts and Prof. Busk described a skeleton from Bennet Hill, on the Moray Firth. Their paper will be read at a later hour this evening.

Papers were sent by Hermann de Schlagintweit and by Captain Jacob, which were taken as read.

Lord Lovaine, Messrs. Duckworth and Turner, the Rev. R. Hall, Mr. Petrie and Prof. Wilson, contributed valuable papers to the sec-

tion. Mr. Hall's paper especially called forth a most lucid exposition relative to Celtic antiquities from our local secretary at Alnwick, Mr. George Tate, F.G.S.

Amongst the ethnological papers the most valuable one, without exception, was that contributed by Mr. Wallace on the "Ethnology of the Malay Archipelago", in which the questions relating to the antiquity of man were discussed in the most philosophical aspect.

The discussions which took place in section E, and in which Sir Charles Lyell, Prof. Jukes, Dr. Falconer, Mr. Godwin-Austen and Prof. Wilson took part, were often of the most interesting nature. Your reporter cannot conclude this allusion to section E without offering the thanks which anthropologists undoubtedly owe to Sir Roderick Murchison, the president, who, by his suavity in the chair, and efficient control over the feelings of the audience, as well as by the undeviating desire which he so constantly manifested to be strictly impartial, especially merits an expression of the obligation of your delegates.

The pressure of your reporter's duties in section E precluded him from attending the other sections so much as might have been advisable. In section C most interesting discussions arose respecting the "Antiquity of Man", on papers read by Prof. Phillips and Mr. Godwin-Austen respectively, and on which Sir Charles Lyell and Dr. Falconer offered most valuable observations. In section D, Messrs. Wallace and Tristram read a paper on "Geographical Distribution", which contained general conclusions which at no distant date may be successfully applied to anthropology. An exceedingly valuable paper was contributed by Dr. William Turner, on "Cranial Deformities, more especially the Scaphocephalic Skull", in which the author reviewed the labours of Virchow, Welcker, and Von Baer, while original critical observations were offered. A valuable and important paper was read in subsection D, by Dr. Embleton, on the "Anatomy of a Young Chimpanzee". Many other papers were read, which are not alluded to here, although in many cases they were of the highest general interest.

Upon the whole, it may be considered that anthropology has gained considerably in the estimation of scientific men by the proceedings of the last meeting of the British Association. Your reporter, however, out of a desire not to wound the feelings of his fellow Englishmen, refrains from drawing any unfavourable or invidious comparison between the scientific tone which prevailed at the meeting, and that which prevails at similar *réunions* in France and Germany. He hopes that steps will be taken, by the inculcation of facts necessary to be known, to remove this stain on the scientific reputation of the English nation, whose position in other branches of human knowledge should induce us no longer to be content to allow anthropology to occupy so ignominious a position in the thoughts of educated men. The proposal which stands on the minute-book of the general committee, in the name of Dr. James Hunt, that section E in future shall recognise the existence of anthropological science, is a proposition which in any other country but England would be considered one self-evident, and

of which the ordinary grammatical meaning of words would preclude the possibility of the denial of such an apparent necessary improvement. Opposition will, however, no doubt be offered, coming from a scientific party as ignorant of the meaning of the word "anthropology" as they are blind to the important signification of the science, which the word, empty in itself, represents. But if the Fellows of the Anthropological Society and their friends unite strongly to attain this, the first step in the formal recognition of their science in the annual scientific congress of England, and attend at Bath next year in such numbers on the general committee as to impress on the minds of the authorities the desirability of any necessary change, your reporter has no doubt their efforts will be ultimately crowned with success.

Your reporter regrets that many important topics are omitted in this brief report, in which he has been actuated by a desire to give the broad results of his observation at Newcastle in such a form as to indicate the objects for which we must all strive, and not to disguise the amount or nature of the labour which English anthropologists must undergo before their science can be usefully or practically advanced.

C. CARTER BLAKE.

The thanks of the society were given for this report.

Dr. HUNT said he thought there was cause for anthropologists to feel satisfied at the advance that had been made in the scientific tone of section E. It could not be denied that the delegates of the society had a very difficult duty to perform, and were obliged to listen to many most frivolous objections against the recognition of anthropology by name, although in practice the section was obliged to do so. He was glad to know that the chief opposition which they had received did not come, as many might suppose, from Fellows of the Ethnological Society, but rather from persons who had not the least knowledge of ethnology, and were quite incompetent to judge what was required for the progress of a true science of Man.

Professor JOHN MARSHALL, F.R.S., then read a paper on the "Superficial Convolutions of a microcephalic Brain".

[The publication of this paper is postponed.]

Notes upon the Opening of a Kist of the Stone-age upon the Coast of Elgin. By GEORGE E. ROBERTS, F.A.S.L.; with a Description of the Skeleton, by Professor BUSK, F.R.S., etc.

SINCE this subject was brought before the notice of the British Association at Newcastle, I have received, through the kindness of my Scotch friends, some notes relating to a prior investigation of the kist, which it will be necessary to mention before proceeding to relate my own observation of it. For it appears most desirable that the fullest record of its discovery and the examination of its contents should be preserved. The Rev. Alexander Leslie writes to me as follows from the Manse of Burghhead, in which parish Bennet hill, where the kists are, is situated:—

—"In the month of July last year (1862) I went with my schoolmaster to the Bennet Hill (likely so called from St. Bennet of Pluscar-

dine), to examine the stone kists there, three in number; one, however, had been destroyed by the railway cutting. The remaining two were quite contiguous to each other, and on the same mound. In the one we found nothing but the remains of some bones, but in the other nearly the whole human skeleton. These we removed from the kist, and examined them, then replaced them all (but without any attempt as to their proper or natural position), except the lower jaw, which I took home with me, and which I have now sent to the Rev. Dr. Gordon, of Birnie, for transmission to you. Both kists gave evident tokens of having been previously opened. It is rather strange that there should as yet have been discovered just three kists and three middens, and all these so contiguous to each other as to be only a few yards apart."

The coadjutor of Mr. Leslie in this exploration, Mr. Alexander Jeffrey, of Burghead, thus writes to me respecting his share in the enterprise, and the present (October 24th) condition of the kists:—

"The stone kists now in existence are two in number, and are situated at the extreme eastern end of the hill. They were accidentally discovered some eight or nine years ago. The stones forming the side of the larger kist are respectively 3 feet 10 inches and 3 feet 5 inches in length. This is the kist from which the human skeleton was recently taken. I am not aware that any bones were found in the neighbouring grave. A third kist was come upon by the workmen employed in the railway cutting about twelvemonths ago. It was about the same size as the other two, and was quite empty. The kjökkenmöddings are also two in number, the largest measuring upwards of 50 feet in circumference. Another lies upon the opposite side of the railway cutting. As far as can now be ascertained, no pristine weapons of bronze or iron were ever picked up at Bennet Hill, although flint arrow-heads of beautiful workmanship were found in abundance. Unfortunately, all efforts made towards the re-discovery of these have hitherto failed."

I have also received several communications bearing upon the kist and the middens from the Rev. Dr. Gordon, who remarks that, although there are only three large kjökkenmöddings on the Bennet Hill, there are several smaller ones, a fact which my own observation also proved.

Mr. Leslie transmitted the lower jaw, as stated in this letter, to Dr. Gordon for me, accompanying it with a note, in which he says:

"It is wonderfully complete, with the exception of two or three of the teeth; but their loss is little to be wondered at, considering the voracious appetite of their owner, as proved by the enormous accumulation of a mussel-midden at his door."

The jaw reached me safely, and I have now the pleasure of laying it before you. Mr. Busk, in whose hands I have placed it, does not detect any conformation differing from that of a jaw belonging to a normal brachycephalic cranium; it is apparently that of an individual of twenty-two or twenty-three years of age, corresponding in this particular with the age assigned by him to the skeleton. It may be remarked, however, that indications of considerable antiquity are

stamped upon it, in the large amount of wear which it has suffered. In commenting upon the valuable communications of the Rev. Mr. Leslie and Mr. Jeffrey, I am inclined to doubt the exactness of the measurements of the slabs which formed the walls of the kist, the estimates formed during my visit to it, severally by the party, four in number, giving measurements which I shall afterwards have occasion to mention. Mr. Lubbock has so exactly described the kjökkenmödings in a late paper (*Natural History Review*, July 1863), that I will not engage the time of this meeting with any detailed account of them. I am glad, however, to be able to add somewhat to his notes. The absence of pottery he comments upon as remarkable. Since his visit two small fragments have been obtained by my friend Dr. Taylor, of Elgin, and Dr. Gordon picked up another during the visit paid with me. This I now exhibit. It is very coarsely burnt, and of the rudest manufacture. The flint weapons referred to by Mr. Jeffrey have again been met with. The indefatigable exertions of Dr. Gordon have resulted in the discovery of five, which he has been good enough to send me, picked up in the midden *nearest* to the kists.

The skeleton left with such singular abstinence by Mr. Leslie was obtained by me while exploring the district in the company of the Rev. Dr. Gordon, his son, and Mr. Harvey Gem. We visited the shell mounds situated upon the sandy dunes of Bennet Hill, a mile from Burghead, and, after examining their contents, we turned our attention to the small cairns of rudely-piled stones, which lie a few yards (inland) from one of the shell-middens, and which evidently mark the burial places of the tribe. Two of these were piled around small inclosed spaces formed by the junction of four upright stones. A fragment of human jaw lying in the sand outside one of these led us to search among its sandy contents for other bones, but unsuccessfully. The second cairn, however, with its central kist, yielded us better evidence. This, like the neighbouring tomb, was a rude erection of four flat sandstone slabs, placed vertically so as to enclose a space 30 inches long by 20 in width. The depth of the stones, which nearly corresponded with that of the grave, was 22 inches. Three of the stones had been slightly smoothed before use.

The cavity thus formed was filled with sand, into which we dug, and presently succeeded in discovering a skeleton, which had apparently been buried in a crouching position, the legs below the knee being bent beneath the hams, and the head bowed towards the knees. The skull was strongly brachycephalic, and presents other peculiarities, which Mr. Busk has described in the valuable note attached to this paper.

From the position of the skeleton, I was at first inclined to consider that no disturbance of it had taken place, but the communications of Mr. Leslie and Mr. Jeffrey are of course conclusive on this point. Unluckily, the box in which the bones were packed suffered a breakage during its transit from Elgin to London, and some of the vertebræ, with other smaller bones, were lost.

The following note upon the skeleton has been contributed by Mr. Busk, F.R.S. :—

"The human bones found by you at Bennet Hill have belonged apparently to a young individual, about 5 feet 8 or 9 inches in height, of slight make, and no great muscular development. At first sight, from the comparative delicacy of form, and want of muscular impressions, one would be inclined to regard them as those of a woman, but if so, she must have been of more than the usual stature. Unfortunately, no part of the pelvis, which would enable a correct judgment as to this point to be formed, is found among the remains. If the owner were a man, he must have been of small size, and, as I have said, not of a strong build, and with a remarkably small head for a male. The cranium is decidedly brachycephalic, the proportions of length to breadth being as 1·00 to ·823, and, for its size, rather unusually high, the proportion of that dimension being to the length as ·808 to 1·00. The forehead is narrow, and the superorbital ridges very slightly projecting, although the frontal sinuses are well developed. Compared with other ancient crania, the present may be regarded, I think, as belonging to the same class as those which have been considered as appertaining to the stone period of the north of Europe. Amongst these, I have selected a few whose dimensions approach nearest to the Bennet Hill skull, and these will perhaps suffice to show how far they all approximate to one type. I have also added the length, and least diameter of the long bones; beyond this they call for no particular remarks. As regards the chemical condition of the bones, it seems to me in some degree remarkable that they should have retained so much as 35·5 per cent. of animal matter. The amount of carbonates is about the same as in recent bone, or perhaps rather more, viz., 10·000, and the bones appear to contain about the usual amount of fluorine found in recent bone. They are slightly impregnated with iron."

I may mention, in conclusion, that a similar kist was opened by Dr. Davis, of Stafford, many years ago, at Roseile, about a mile to the S.E. of the Bennet Hill, and a human cranium and leg bones obtained, probably referable to the age of this skeleton. No doubt others will, ere long, be met with, for kjökkenmöddings are being discovered in numbers along the N.E. seaboard of Scotland, and it is natural to suppose that the graves of the ancient mussel-eaters should accompany the evidences of their occupation during life.

	Length.	Breadth.	Height.	Least frontal width.	Greatest ditto.	Parietal width.	Occipital ditto.	Zygomatic ditto.	Frontal radius.	Vertical radius.	Parietal ditto.	Occipital ditto.	Maxillary ditto.	Nasal ditto.	Circumference.	Longitudinal arc.	Frontal ditto.	Parietal ditto.	Occipital ditto.	Frontal transverse arc.	Vertical ditto.	Parietal ditto.	Occipital ditto.	Proportion of breadth to length.	Do. of height to do.
Bennet Hill ..	68	56	53	36	45	51	43	..	44	435	43	355	..	85	194	137	48	46	43	11·7	12·3	12·5	11·	828	·808
Danish stone 1	696	545	58	38	45	48	45	53	48	48	50	34	40	37	194	143	50	50	43	11·8	13·0	13·2	11·4	795	·850
Female 2	685	55	53	37	465	53	44	49	45	49	48	58	42	39	204	139	49	47	43	13·0	12·6	13·0	10·4	802	·802

Dimensions of Cranium, compared with those of two belonging to the Stone Period in Denmark, of nearly the same size.

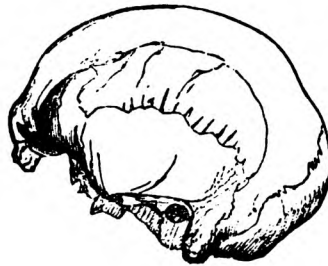
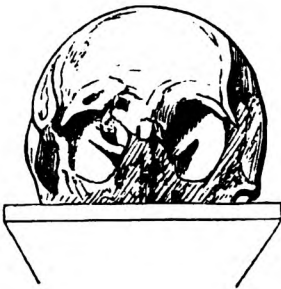
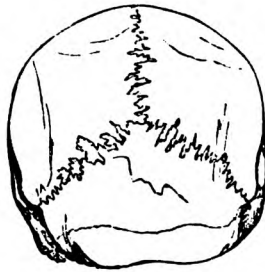
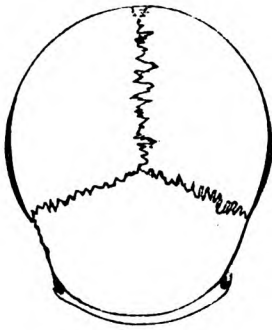
	Length.	Least Diam.
Femur	17.25	0.95
Humerus	12.0	0.7
Radius	9.25	0.45
Clavicle.....	5.5	..

Mr. CARTER BLAKE congratulated the Society on having so lucid an account of these remains placed before them, in which the specimens which Mr. Roberts had obtained with such industry and energy had been described by Professor Busk in the most complete manner. As some confusion, however, appeared to exist respecting the signification in which Professor Busk used the words, "strongly brachycephalic," when speaking of a skull whose proportions were $\frac{82.8}{1000}$, he would hint that it would be very convenient if a more minute subdivision of skulls, classified according to length, on the plan of M. Paul Broca, could be adopted. M. Broca, while adhering to Professor Retzius's general classification, arranged certain skulls which he obtained from a cemetery in La Cité, as follows:—

- 1. *Dolichocephali*. Index smaller than 77.7 per cent.
 - A. *Pure Dolichocephali*. Index smaller than 75 per cent.
 - B. *Subdolichocephali*. Index ranging from 75 to 77.6 per cent.
- 2. **Mesaticephali*. Index ranging from 77.7 to 79.9 per cent.
- 3. *Brachycephali*. Index of 80 per cent. and beyond.
 - A. *Subbrachycephali*. Index ranging from 80 to 84.9 per cent.
 - B. *Pure Brachycephali*. Index of 85 per cent. and beyond.

It would be seen that this skull would be classed amongst the subdolichocephali by M. Broca, who reserved the term, pure brachycephali for such skulls as those from Kellet, † in Lancashire, $\frac{85}{1000}$, or from some of the Danish tumuli of the stone period. With respect to the skulls which had been derived from undoubtedly Celtic burial places, ‡ by Mr. George Tate, F.G.S., and others, one of them had been described by Dr. Barnard Davis. Its cranial proportion was $\frac{80}{1000}$. To such a skull as this it would be scarcely accurate to apply the term brachycephalic in any other sense than as implying that they presented a short-headed type, which Mr. Tate identifies on evidence of the highest archæological value with that of the Northumbrian Celts. He, however, did not interpret Mr. Tate's observation as implying any hypothetical resemblance between the cranial type of the Northumbrian Celt and that of the more markedly brachycephalic Danish mound builder. He felt confident that the evidence which such observers as Mr. Tate and Mr. Roberts had discovered would speedily

* From *mesátios*, average. † Geologist, 1862, p. 424.
 ‡ Anthrop. Review, vol. i, 425. Trans. Berwickshire Naturalists' Field Club, p. 412.



G. Busk del.

THE BENNET HILL SKULL.

place a series of accurate, well-ascertained facts before us, which may hereafter enable us to generalise on the subject, a task we cannot as yet accomplish.

Mr. ROBERTS offered a few remarks on the bones on the table, which had been procured by himself. Three or four kists have since been discovered along the sea-board of the Tarbotness promontory.

PROFESSOR MARSHALL inquired the exact date of the skull?

Mr. ROBERTS replied, that, as the oldest and most indeterminate form of flint implement (the simple flake) was met with, the exact date could not satisfactorily be ascertained.

Mr. A. A. FRASER inquired, whether any larger or better worked flints have been obtained from the same locality, to which Mr. Roberts replied in the negative.

PROFESSOR MARSHALL remarked, that the foramen jugulare was much larger on the right than on the left side, in the Bennet Hill skull, a fact to be accounted for by reason that the right jugular vein went direct to the heart, whilst the left one crossed over indirectly. As the viscera in the body have often been transposed, so that the heart was found on the right side, it was interesting to find that in the Bennet Hill skull no departure from the normal type was visible.

Indian Tribes of Vancouver's Island. By CAPTAIN EUSTACE W. JACOB.

Vancouver's Island is chiefly, if not altogether, inhabited by the Nootka Sound Indians (Flat-heads), speaking the Wakarh language, and falling into the following tribes:—Naspatl; Nootkans proper; Ilaquatsh; Nittenat; Shuswah, or Atna; Kitunaha.

Like other Indian tribes, the Nootka Columbians are a dirty race, living in poor huts formed of planks or logs. The men are slow in their movements, lazy. The legs of the squaws are crooked, giving them when walking a waddling gait, anything but graceful. They are black haired, the locks worn long and flowing; stunted but muscular, both sexes of nearly equal height, with good teeth and fine eyes—treacherous in character. The complexion is a copper-brown, not very dark, some of the women, indeed, are little darker than Europeans: of a far lighter complexion than English gipsies. The language is remarkably guttural, sounding like the clicking of a clock, the voice proceeding entirely from the throat. The travelling dress is usually a blanket, purchased at the Hudson's Bay Company's store, the women carrying their kettle or large round cauldron at their back, attached by a hempen band passed round their forehead. Chinook, a jargon composed of English, French, and Spanish words, strung together without the smallest attempt at grammatical construction, is the medium of communication between these Indians and the white races.

The Nootka Columbians, like other Indian tribes, have no pretension to morals. Many of the women are married, at least to all intents and purposes, to the older residents. Those who live in the neighbourhood of Victoria by concubinage and prostitution, imitate Europeans in dress,

wearing gowns, generally of some very bright colour, such as chrome-yellow, crinoline, hair-nets, with straw mushroom-shaped hats with large rosettes in front, or otherwise tie a coloured cotton or silk handkerchief round their heads, as Chinese women. These semi-civilised Indians delight in having their *cartes de visite* taken, and the women possessing exuberant spirits and not the smallest trace of *mauvais honte*, are especially vain. The face, in most of the photographs which I saw, wore a sullen, melancholy air, calculated to give a stranger an erroneous idea of the general expression of countenance. The boys are fond of gay crimson and blue ribbons, with which, like the young recruit, they deck their caps. When trained by Europeans, the boys make capital and smart servants. Naturally they are of a nomadic disposition, and dislike being tied down to employment of a permanent character. The heads of the children of the free men and chiefs are flattened by means of a stone tied to the head of the new born child.

I fancy that many of the Indian curiosities, supposed to be of great antiquity, are merely made for sale. The rude wood carvings and imitation jewelry show an aptitude for handicraft. Queen Charlotte's Island, inhabited by the Haidah tribe, is the great manufactory. Mr. Pemberton has stated in his "Facts and Figures," that he has known an Indian stock a gun; that in addition to carving their pipes, and constructing their canoes, they raise enormous weights in the construction of their dwellings; that they are eminently commercial, and can generally make a rude map of the country that they travel through; that they distribute periodically their wealth, divide legacies, and bear pain heroically. It is to be regretted that Mr. Macdonald, C.E. and others, should have drawn such highly coloured portraits of the native tribes. Long may the Colonial Government, while protecting the rights and mercantile interests of the settlers, remain "supine." Considering that the native tribes in Vancouver's Island outnumber four times the foreign settlers, a harsh policy, bringing the natives into collision with the settlers, would be greatly to be deprecated, to say nothing of the higher ground by which the matters should be weighed—the cause of justice and humanity. The nearness of the American coast, and the number of American settlers in Victoria, promotes in great measure the hostile feeling. No attempt is made by the settlers to ameliorate the condition of the native tribes, whose behaviour, on the whole, is good. I have seen both men and women, despite the stringent laws respecting the sale of intoxicating drinks, lying drunk in the streets of Victoria. The number of the natives is estimated at 18,000. Those in the immediate neighbourhood of Victoria have been transported to the north of the Island, were driven away, or have been decimated with small-pox, which proves almost invariably fatal. The disease is attributed to the Europeans by the Indians, and tends to increase the bad feelings which exist.

There are Indian remains of rock and stone which are deserving of notice, and are thus described by Dr. Forbes, R.N. in his "Prize Essay," published on the spot by the Colonial Government in 1862:

"Scattered in irregular groups, of from three or four to fifty or more, these stone circles are found, crowning the rounded promontories

over all the south eastern end of the island. Their dimensions vary in diameter from three to eighteen feet : of some only a simple ring of stones marking the outline now remains. In other instances, this circle is not only complete in outline, but is filled in, built up as it were to a height of three to four feet, with masses of rock and loose stones, collected from amongst the numerous erratic boulders which cover the surface of the country, and from the gravel of the boulder drift, which fills up many of the hollows. These structures are of considerable antiquity, and whatever they may have been intended for, have been long disused, for through the centre of many, the pine, the oak, and the arbutus have shot up and attained considerable dimensions—a full growth. The Indian, when questioned, can give no further account of these stone circles than that ‘ they belonged to the old people,’ and an examination, by taking some of the largest circles to pieces and digging beneath, throws no light on the subject. The only explanation to be found is the hypothesis, that these were the dwellings of former tribes, who have either entirely disappeared, or whose descendants have changed their mode of living, and this supposition is strengthened by the fact that a certain tribe on the Fraser river did, till very recently, live in circular bee-hive shaped houses, built of loose stones, having an aperture in the arched roof for entrance and exit, and that in some localities in Upper California the same remains are found, and the same origin assigned to them.”

Possibly Dr. Forbes may be wrong in his deductions as to the antiquity of these primitive houses. One can imagine the use of these underground tenements in a cold and inclement climate like that of British Columbia, viz. : to ensure warmth, but the climate of Vancouver's Island approaches that of Italy, and severe winters, like that of 1861, are the exception. All Indian tribes are warlike, but some are more peaceable than others, and we may suppose that a peaceful tribe inhabited these circular barrows, which served two purposes, that of a concealed abode and a fort, impregnable to rude native weapons of war. Granting that this was the case, what more likely than that these circles were purposely built up round the trunks of trees, whose foliage and shade would contribute towards concealment. The word of the Indian is not to be depended upon, and there are few nations which do not, like the Chinese, magnify the antiquity of their institutions and discoveries. The disappearance of the tribe would of itself be no proof of antiquity, as in the year 1862, the tribe living opposite to Victoria, numbering 2,500, may be said with truth to have disappeared through the ravages of small-pox. The rapidity with which Indian tribes in both hemispheres melt away before the advances of civilisation, or rather, to drop fine words, before intoxicating spirits, immorality and its concomitant disorders, is a matter about which there can be no dispute. May we not ask what the Aborigines Protection Society has done in respect more particularly to the colony of Vancouver's Island, to give vitality to those admirable doctrines which it has inculcated at home ?

A colony was formed at Cowitchan in August 1862, and a gun-boat took the Surveyor-General and others, who finally arranged matters

with the Indian chiefs. The native population of this district—comprising 57,658 acres of wood and pasture land—is estimated at from 800 to 1,000 souls. These powerful native tribes have always shown a friendly disposition towards the white settler, and their language is either spoken or understood throughout the west coast. All appear to delight in paint and feathers, and although proud for a time when equipped in European clothes of domestic service, return, through sheer love of an unsettled life, to the bush. Wild fruits, as the cluster cherry (*Cerasus Racemosa*), sallal berry (*Gualthrubria Shallon*), cranberries; crustacea, chiefly crabs and mussels, camass, or the native onion (*Scilla esculenta*), and the potato, form their food. The hemp-nettle grows wild and is made into twine for fishing-nets. The natives naturally claim the land as their own by right of inheritance, but are happy to part with it for what they term “a little big price,” which may be considered tantamount to as much as the settler can conscientiously pay. The English missionaries appear to be popular, as, with the exception of the Governor of the colony, they seem to be the only persons who do not think that the natives “ought to be rooted out like tree-stumps,” etc.

A story told by Mr. Macdonald shows that the Nootka Columbians are not wanting in parental affection. “An old Indian and his wife were seen bitterly weeping in front of the prison at Victoria. When asked the cause of their distress, they said they were crying for their son who was sick in prison, his ailment being a spitting of blood. On being told that they might see him in the court-house, they instantly arose and went thither. The scene was very affecting. The weather-beaten and worn-out old warrior bent over his unfortunate boy, his breast heaving with sorrow, and streams rolling down his furrowed cheeks. The sight quickly reached the lad’s heart; he hid his face and poured out a flood of tears. He was sentenced to twenty days’ hard labour. In the afternoon of the same day, the old man, his wife, and a middle-aged Indian stood before the magistrate’s house. The father’s plea was: ‘Our hearts are filled with trouble for our son. We cannot cease to weep continually. We cannot sleep. Our son is spitting blood. He will die in prison. He cannot work.’ The old man then petitioned, pointing to his equally anxious friend: ‘Let this man take the place of our boy in prison. He is strong. He can work. Our son will die.’ The proposed substitute then entreated that he might suffer instead of the boy, asserting his own willingness and power to work, and the boy’s inability.”

On the motion of Dr. Hunt, seconded by Mr. Bollaert, the thanks of the Society were voted to Mr. J. Frederick Collingwood, for the able manner in which the translation of Waitz’s *Anthropologie der Naturvölker*, published by the Society, had been edited by him.

Mr. Collingwood briefly responded, after which the Meeting was adjourned.

NOVEMBER 17TH, 1863.

Sir CHARLES NICHOLSON, Bart., V.P., in the Chair.

The minutes of the previous meeting were read and confirmed.

The following new members were announced: Augustus S. Wilkins, Esq.; Alfred S. Rogers, Esq.; George Boulton, Esq.; George Nesbitt, Esq.; Spyridon Glaucoptides, Esq.

Corresponding Members. Dr. Carl Vogt; Prof. George Pouchet.

Local Secretary, England. Dr. Farquharson.

Local Secretaries abroad. S. Stafford Allen, Esq.; D. Bogge.

The Secretary read a list of the presents received by the Society, for which thanks were voted to Hekekyan Bey, the Royal Institution of Cornwall, Dr. Beke, Sir W. Jardine, F.R.S., Dr. Cuthbert Collingwood, the Royal Geographical Society, and the Imperial Academy of Sciences of Vienna.

The following paper was read:—

*On the Negro's Place in Nature.** By JAMES HUNT, Esq., Ph. D., F.S.A., F.R.S.L., F.A.S.L., President.

Dr. HUNT commenced by stating that facts relating to the physical, mental, and moral characters of the Negro have never been brought before a scientific audience in London, while in France, America, and Germany these subjects had been fully and freely discussed. There existed a considerable amount of literature on the subject, but it was unfortunately distinguished by an acrimonious tone. It was hoped to bring forward facts which would dispel some of the delusions which now existed respecting the character of the Negro race. A comparison was drawn between the anatomical differences existing between the Negro and the ape on the one hand, and between the European and the Negro on the other. It was stated that the Negro was generally of shorter stature than the European, but that the difference was greater in proportion than in form; that the bones were thicker and heavier; the trunk short and the arm long in proportion, reaching to the middle of the knee. The hips were represented as narrow; the thigh laterally compressed; the fingers of the hand long and flat, and the thumb long and very weak; the foot flat, and the heel both flat and long; the pelvis narrow, especially in the male; the teeth hard, and the molars usually very large. On all these points there appeared a nearer approach to the ape than was seen in the European. The brain of the Negro had been proved to be smaller than in the European, Mogul, Malay, American, Indian, and Esquimaux. The facial angle was generally between seventy and seventy-five degrees, and sometimes as low as sixty-five degrees. The frontal sutures closed much earlier in the Negro than in the European. The brain both of Negro and ape more resembled that of the European when the latter was in an infant state than when older; at puberty all development in the brain of the Negro ceased, and the form of the

* This paper has been published for the Society by Trübner and Co., pp. 60, price 1s. It will also appear in the volume of Memoirs which have been read before the Society, and which are now in the press. EDITOR.

skull became more ape-like as he increased in years, while the ape became more brutish as he got old—a circumstance which entirely accorded with the psychological fact that all increase of intelligence after the age of puberty was impossible. The hair of the Negro was represented as distinct in structure from that of the other races of man. The structure of the larynx and palate was also different to that of the European. It had yet to be established whether the offspring of the European and Negro were indefinitely prolific—many facts, together with the researches of Broca, leading to the conclusion that these mixtures were only temporarily prolific, and died out after the lapse of a few generations. The Negro had had the benefit of all the ancient civilisation, but there was not a single instance of any pure Negro being eminent in science, literature, or art; nearly all those who had become reputed for their talents could be proved to have had European blood in their veins. The circumstance of European features being found amongst Negroes, as has been frequently asserted, has been denied by M. Pruner Bey, who has examined many thousands. What civilisation they had was imitated, and they had never invented an alphabet, nor reasoned out a theological system. The Negroes in Africa were subject to the cruellest forms of superstition, and were the victims of the most frightful cruelty and torture. Domestic slaves were not generally sold except for some crime, and a large portion of the exported slaves were criminals. Numerous opinions were quoted to show the low mental character of the Negro. The following general deductions were made: First, That there is as good reason for classifying the Negro as a distinct species from the European as there is for making the ass a distinct species from the zebra; and if we take intelligence into consideration in classification, there is far greater difference between the Negro and Anglo-Saxon than between the gorilla and chimpanzee. 2nd. That the analogies are far more numerous between the Negro and apes than between the European and apes. 3rd. That the Negro is inferior, intellectually, to the European. 4th. That the Negro is more humanised when in his natural subordination to the European, than under any other circumstances. 5th. That the Negro can only be humanised and civilised by Europeans. 6th. That European civilisation is not suited to the requirements and character of the Negro.

Sir CHARLES NICHOLSON, Bart., V.P., said: We must have all listened with immense satisfaction to the very able, elaborate, and graphic paper read by our President. Reserving to myself the privilege of offering a few remarks before the conclusion of the debate, there is one point to which I would wish now to invite attention. It is a point not adverted to by my excellent friend the President, but it is of some importance as determining the fact as to the distinct character of the Negro and the Negroid races from the higher European or Aryan type. The question I would invite attention to is this: Whether the parasitic animals which belong to the Negro are distinct from those which belong to the European type? A very

distinguished friend of mine, Mr. William Sharpe M'Cleay, with whose name many here are familiar, resided for many years in the West Indies, having filled the office of Commissioner in Cuba. He had very decided opinions on this subject, and I may say that they are in entire accordance with those propounded to night by our President. It is, perhaps, known to many persons that Mr. M'Cleay is very distinguished as an entomologist, and I have heard him affirm with great confidence that the parasitic animals—the entozoa and those troublesome parasites that infest all animals—are distinguished in the Negro from those which infest Europeans. Probably some one will be able to give information on this point, because, no doubt, if it could be shown that the parasites that infest the body of the Negro are different from those which infest the European, it would go a long way towards establishing the specific difference which I think most persons present are prepared to admit between the European and the Negro.

Mr. S. E. BOUVERIE PUSEY said: I feel rather reluctant to address you after the excellent paper which has just been read, especially as there are many present who are much better qualified to do so than myself. I have, however, a few words to say on the subject. In very many examples, when the Negro has come in contact with European civilisation, he has been what he is in Cuba now, a slave for at least five or ten years, worked to death and then replaced by other slaves. In the Confederate States, where he has fallen into the hands of what I would call a noble people, he is unquestionably better treated; but till recently, owing perhaps to overcaution, any progress in knowledge has been much discouraged. However, the inhabitants of the Confederate States are many of them convinced that the Negro can be made a skilled artisan—an artisan of any kind. My authority is Mr. Pratt, of Carolina, a Louisianian delegate. It is true that they do not distinguish accurately between the Negro and the Mulatto; and it is remarkable how many examples of clever coloured men are Mulattoes. But it is not exclusively the case. I think we can point to one example of a pure black man, eminent both as a statesman and warrior—Toussaint l'Ouverture. When we consider how Toussaint played the French and the Spanish one against the other—when we consider his self-control and wise legislation—we cannot doubt that, though he was by no means the chivalrous hero represented by the Abolitionists, he was a man of splendid abilities. It is essential to know what tribe of Africans he belonged to. The slave says, "As stupid as a Congo nigger." Now, I am curious to know if he was a Congo Negro, or whether he was born of parents belonging to a higher tribe of Africans who accidentally got there. The superiority of the white man is admitted by the Negroes. The Mulattoes form the aristocracy, and the creed of the Negro is, that "a hundred black girls won't make one Mulatto yellow girl." I quite concur in the whole with what our President has stated, that the Negroes are a different species from the white man.

Dr. SEEMANN. I can only say that I agree in most of the principles that have been advanced tonight. I fully agree with Dr. Hunt in

considering the white man and the Negro distinct species. There is one thing that is very curious, that, while in the Negro children we always observe a very great sharpness up to a certain age, the most clever Europeans frequently turn out to be dunces up to a certain period. With regard to the colour of the Negroes, I think the darkest Negroes I ever saw were in Egypt, and they came from Nubia.

The CHAIRMAN. You would not consider the Nubians Negroes?

Dr. SEEMANN. No; but they came through Nubia. With regard to their not being prolific beyond a certain crossing, I am quite of that opinion. I made observations myself, and often inquired into the subject while staying at Panama and South America. I think the Negroes are very prolific up to the first or second cross, but after that the children are apt to die. I believe they are incapable of exercising any leading position in the world, and that they are best off when slaves or in an analogous position. I do not think that any amount of education will make them anything but what they are.

Mr. WINWOOD READE: I may be, perhaps, allowed to mention, that I spent fifteen months on the west coast of Africa, in equatorial, south-western, and north-western Africa. I have, therefore, had opportunities of seeing a great many types of Negroes, though not perhaps of studying them very deeply. Western Africa is divided into highland and lowland, the latter running along by the sea coast. On the highlands are found the Africans; on the lowlands the Negroes. The typical Negroes inhabiting the sea-board have always been carried away by slavers or sold to them, and therefore those persons who have not visited the interior of Africa have always supposed that the Negroes truly represent the inhabitants of the continent, but that is not the case. They inhabit, comparatively speaking, a small area. It is a difficult subject, but I believe that the Negroes belong to the African races and are simply degraded. They possess among themselves traces of a civilisation that cannot be ascribed to the influence of Europeans. Dr. Hunt has said that several mechanical arts have been found among those Negroes that have been visited by Europeans. That is so; but on the other hand, though those arts are sometimes retained, the general effect of the importation of foreign articles is to destroy native industry. If you take cloth over there they do not make their own cloth any longer. The same with regard to their implements of iron, their weapons, and those sort of things. If you take over the iron they will simply forge the heads of the arrows, but they will not fetch down the native iron from the interior. And so with regard to everything else. I am, therefore, inclined to believe, that the Negroes are simply degraded Africans. With respect to the mental powers of the Negroes, nobody who has ever been in Africa will suppose for a moment that the Negroes approach the Europeans in any respect. If the Negroes are equal to the Europeans, the Africans are superior to the Europeans; for the Negroes are far inferior to the other Africans. The Negroes may be said to resemble schoolboys; it is impossible to make them work. They will not learn anything unless you make them. You must flog them occasionally. It is not necessary, of course, to treat

them badly, but corporeal punishment is absolutely necessary. With respect to the means of civilising the Negroes in Africa, nothing, I think, will ever be done by missionaries or by sending out people to Africa. The Mohammedans at present are civilising a great part of Africa by converting the inhabitants to their own religion, and by teaching them Arabic (for wherever the Mohammedans go the Koran goes with them), and by elevating their character in every possible way. For example; they forbid drunkenness, which is the great vice of the Negro, but which the laws of the Mohammedan religion forbids. With respect to the slave trade, it must certainly be abolished now, because there is no demand for the Negroes in America; in fact, they do not know what to do with the Negroes they have, and I fancy they would rather have them out of the country than in it. The only real demand for slaves is in Cuba, and Cuba doubtless will be ruined when the slave trade is abolished. We must not forget that it was owing to the slave trade that America and the West Indies attained to their prosperity. What would those countries have been without the assistance of the Negroes? We know what the West Indies are, and yet we did Africa no harm by their exportation. The most distinguished of our early navigators were slave traders, and a few hundred years ago a man was knighted for doing that for which he will now be hanged. If we were to consider the question from a philanthropic point of view only—that considers only the happiness of the Negro—I should say, certainly, “Don’t abolish the slave trade.” To take a Negro from Africa and carry him to America is the greatest benefit that can happen to him. It is like taking him out of hell and putting him in Paradise. With respect of the capabilities of the Negro for future improvement, I see no reason to despair of making something of him; but we must not try to feed the baby at the breast with strong meat. We must not suppose that the Negro is equal to ourselves, or else, what is the use of educating him? If the Negro is equal to us now, let him show it. Let us try to elevate his character and to educate him. Let us modify certain laws of slavery; for instance, we might imitate the Arabs. The Arabs of Africa allow any slave to redeem himself by paying a certain amount of money, and they give him a certain portion of time to work in, so that if he is really industrious he can always liberate himself. There is no reason why that should not be done in America. Perhaps that would be the best means of liberating slaves, because then only the industrious ones would be liberated, while the idle ones would remain in slavery, which is the proper place for them to be in.

Mr. PUSEY: Are any of the tribes commonly known specimens of the African as opposed to the Negro? For instance, the Mandingoes or Foulahs.

Mr. W. READE: They are Africans.

Mr. PUSEY: The principle of allowing Negroes to redeem themselves has been carried out in Brazil with the best results.

Dr. MURIE: I have listened to the paper with great interest; and I think we should look upon the subject in a twofold view. The authorities Dr. Hunt has given go so far as to prove that the African

does not possess the same mental and moral attainments as the white race. But there is another question that he entirely omits. Whatever may be the effect of the one race or the other possessing less or more brain, or physical development, the question arises, "Have the white race any right whatever to enslave their brother?" Even in Europe there are physical differences of race, and doubtless it is the same in Africa. You see in Africa tribes which differ materially from one another in colour and physical development. You have the west coast and you have the inner tribes; but I cannot see what the difference is between the African and the Negro. If the Africans are not of Negro blood, that involves a question of variety of race, which is rather a ticklish one to deal with. I think upon the whole that the authorities quoted by Dr. Hunt are quite sufficient. They are all authorities that have weight, because most of the persons in question have travelled in Africa, and have collected considerable anatomical and physiological data. We are much indebted to Dr. Hunt for having collected so many authorities on the subject. With reference to the different class of parasitical animals in the Negro, I can assure you that the fact mentioned by the chairman is quite established. A professor in the school of Mehemet Ali at Cairo, has made observations as to the entozoa of the Negroes that came under his inspection, and he states that the entozoa of the Africans are different from those of the European. But though that may be true, I do not see how we are to infer that they are distinct races because of that alone, for the species of parasite may depend partly on the climate.

Mr. J. REDDIE: I rise rather to ask for information than to venture to criticise, either the admirable paper or the observations that have been made upon it. I think that the question as left by Dr. Hunt, has been somewhat altered by the observations of Mr. Reade as regards the very great difference between what he distinguished as the African and the Negro. I should like to know, if that difference is so very marked, whether he considers them as different species as well, because it rather complicates the question. He went so far as to say that if the Negro was equal to the European the African was superior to the European. Now, I suppose, no one will maintain that he is equal *de facto*, but only *in posse*—that he is of the same humanity and can be educated up to the European. I should like to hear that point explained. Before I sit down I would beg to make another observation as regards one part of Dr. Hunt's paper. It seems that the slaves that are sent to America and elsewhere are the very lowest of the population of Africa. They are that very inferior race that the proper African is so superior to, according to Mr. Reade. Well, in that case, I think that we have scarcely allowed the Negro a fair chance, because I should like to know what success we have had in educating our own refuse population? The events of the last few months, as regards ticket-of-leave men, to go no further back, show that it is a very difficult thing to alter the moral and intellectual developments of a human being. And unquestionably, if the race of Negroes that are in the Southern States of America are from the very lowest criminal population in Africa, I think it would be a very interesting subject for phil-

anthropists to know what effect the same treatment, pursued with regard to Europeans of a higher education, would have upon the better classes of Africans—those who are not, so to speak, hereditary thieves and everything that is bad. We know that even among our own criminal population there is supposed to be a sort of hereditariness, so to speak, and therefore we may have an easy explanation of the proverbial thievery of the Negro.

MR. READE: The "Africans" inhabit the interior of Africa, and are therefore not so commonly known to the traders, missionaries, and military men who visit the coast, as the "Negroes." The coast of Africa is formed of terraces which gradually mount from the sea. On the sea-board are found typical Negroes; on the first terrace an intermediate race. On the terrace beyond that is found the race which, as far as I have been able to discover, are something like the ancient Egyptians in their habits—more like them than the Arabs. Certainly the specimens of Africans which have been received in America are pretty much the same as if the inhabitants of Whitechapel had been sent out to any country as specimens of Englishmen. But those Negroes that have been sent to America have been judged of by phil-anthropists who have had no opportunity of judging of them in their own country, and they say that these Whitechapel Africans are the men who are equal to ourselves. I may observe that these delicate distinctions between the Africans and the Negroes have not yet been established. I believe I am almost the first to draw the attention of Anthropologists to them. I believe that what is called the typical Negro—the black-skinned, woolly-headed, Negro—is so distinguished on account of the moist and deleterious climate.

MR. PUSEY: Among the slaves imported to the West Indies, and in former times to the Southern States of America, the Mandingoes formed a principal feature, and Mr. Reade tells us that they are Africans as distinguished from Negroes. It would be a mistake to suppose that the slave trade has not prevailed in the Southern States of America for the last fifty years.

MR. READE: On what authority do you know that the Mandingoes were the Africans who were chiefly exported?

MR. PUSEY: They were the principal—one tribe among many. My authority is Long's *History of Jamaica*. Mr. Long was a slave owner in the time of the slave trade. Another authority is Bryan Edwards, one part of whose work is devoted to giving an account of the different tribes exported, and their different characteristics. I cannot remember all the different tribes, but the Mandingoes were one principal one, and the Kroomen were another.

MR. READE: The Mandingoes were Mohammedans, and as they were not allowed to sell slaves to foreigners, I should think Mr. Long must be mistaken.

MR. PUSEY: In Dr. Manton's and other writings, you will find mention not infrequently of Molammedans among the slaves, and persons that could write Arabic.

MR. LEWIS FRASER: I have not been able to find those distinct races that Mr. Reade says are to be found so easily. I have

been some hundreds of miles in the interior on more occasions than one, and certainly the natives are Negroes right away through; but as you get into the interior they get mixed with the Mohammedans, and there you find that they are Mohammedans and not Negroes, though they may have black blood in them. There are distinct races and tribes, and you can know what tribe a man belongs to by his marks. As to those exported to the West Indies being the refuse of society, I must certainly differ from Mr. Reade there, for you can go and buy any body you please when you are in the country. Women sell their children, and I know one instance at least of a woman selling her child before it was born. Everytime she was with child she went and sold it. In fact, they will give their children away. The specimens that Captain Forbes brought to this country were given to him. They give a child away just as in this country you would make a lady a present of a pair of gloves. I might have had any quantity of them. And I may state that when girls are given, it is with a perfect understanding of the use to which they will be put, and not with the idea of their being brought to England. And as to their being black, it is a great rarity to see a black man. They are considered handsome when they are very black. It has been said that in North Africa they are generally black. I believe the other colours will not sell when they are brought north. They are all picked men. I am very glad to see that Dr. Hunt has brought this subject forward, for in nearly every point it represents what has been my feeling for years. I should like to have an interleaved copy of the paper that I might be able to make a few notes on some parts.

Mr. CHARLES WORTH: There is one point in this paper about which I should like to make a suggestion. It relates to the physiological view of the subject. I refer to the sense in which the author uses the term "species." I have no doubt that the paper will attract attention both in this country and on the Continent; but so much attention has been directed to the views of naturalists in relation to the term "species," that it is important that Dr. Hunt should, in a note, or in some other form, indicate in what sense he uses it. Dr. Hunt told us that he considered the different types or modifications of humanity in the Negro race, as contrasted with the European, to be as entitled to specific distinctions as the different tribes of the equine race. That is, if you call the zebra and ass—and, perhaps, Dr. Hunt will add, the horse—if you call them different species of the genus *Equus*, you are also entitled to call the Negro and European different species. Now without meaning to call that in question, I would call the attention of this meeting to the fact, that in the popular and ordinary sense in which we use the term "species"—the sense, too, in which our highest authorities have used it up to the present day—we have considered these rather as varieties than as species, or races opposed to species—those animals, however, various in external character, which do readily intermingle and breed together, and in which the first two or three races are generally fruitful. Now the different species of the genus *Equus*, we know, are only fruitful during one or, at most, two generations, but, as it respects the Negro and European,

though there is a great deal of evidence to show that the intermingled races do ultimately die out, yet there can be no question whatever that they do breed together as readily as the native races among themselves. That is to say, that the Negro and European, when brought together under favourable circumstances, do as readily procreate as either of the races among themselves. I think that that is an important point to be considered in the definition which should accompany this paper as to the author's views of "species." One fact of great interest was brought forward by the chairman—perhaps I ought to call it an hypothesis. I mean that in reference to the parasitical animals. Now the real importance of that would, I think, altogether depend upon whether these distinct parasites accompany the Negro when moved from his native country to a different quarter of the globe. If we find in Negroes' heads when in this country the same species of pediculi that we find in the Negroes in Africa, and if that species is distinct from that which infests the heads of Englishmen, then the fact would doubtless be strong in favour of their being entitled to a specific distinction. These two points I believe to be of great importance, and well worthy the attention of this meeting.

The discussion was then formally adjourned till December 1st.

ORDINARY MEETING, DECEMBER 1ST, 1863.

R. S. CHARNOCK, ESQ., IN THE CHAIR.

The minutes of the previous meeting were read and confirmed.

The following new members were elected :—Dr. Berthold Seemann, F.L.S.; William Cort Wright, Esq.; A. T. Bledsoe, Esq., LL.D.; G. McHenry, Esq.; Frederick Lawrence, Esq.; John Edwin Mayall, Esq.

The SECRETARY read a list of the presents received by the Society, for which thanks were voted to the Society of Antiquaries, Dr. F. Royston Fairbank, and George McHenry, Esq.

Mr. C. CARTER BLAKE: At the last meeting of the Society a paper was read by Dr. Hunt "On the Negro's Place in Nature," in which the author communicated the conclusions to which he had been led by his own researches, and by the study of those French, German, and American authors who have treated upon the subject. Certain conclusions were advanced by Dr. Hunt, on which, with your permission, Mr. Chairman, I will comment at some length. I will restrict my remarks chiefly to those topics to which I, as a student of the anatomical relations of the various relations of men among each other, and of the relations which the totality of the races of men bear to the inferior animals, have paid attention. I shall, I say, restrict my remarks chiefly to the anatomical part of the question, and to those physiological and psychological remarks which directly flow from the anatomical facts which must be admitted by the majority of comparative anatomists. I hope there will not be introduced

into this discussion any opinions of a political nature, which are foreign to those objects for which this society is founded, that of ascertaining the physical facts respecting the races of man—respecting man as a whole—apart from any conclusions which may be engrafted on the mistaken or possibly true interpretation of those facts. Dr. Hunt, in a most able paper, in which he gave due prominence to the memoir which M. Pruner Bey contributed to the Paris Society of Anthropology, gave us a most lucid and complete account of the physical facts relating to the Negro race. Nevertheless, there are a few other facts, and as these, in the main, support his conclusions, I will further direct attention to them. Professor Owen, whose duty it was to complete a catalogue of the osteological collection of the College of Surgeons in 1853, observed, that the great character in which the Negro skull differed from the skulls of the majority of those Europeans with which he was acquainted in his experience, is, that the plane which the supra-occipital bone formed with the plane of the foramen magnum formed a far more obtuse angle than in any of what he termed the leucous races of man. That is one fact to which our special attention should be directed. Now this fact, like all other facts which have relation to the constitution of the occipital segment of man, has a higher value than any which we may be disposed to place upon it in a mere teleological sense (merely, as we may perceive, it may have relation to our acceptance of the doctrine of final causes), that has a deep significance in a morphological value. And as that significance has been brought out in a book that has been laid before the scientific world of England, during the past six months, by one of our most eminent comparative anatomists, I will, on this occasion, for once adopt the conclusions of Professor Huxley, and point out the wonderful relations which the angle of the occipital foramen in man bears to a line drawn along the basicranial axis. I shall point out to what a remarkable extent this angle differs in the various races of mankind. Professor Huxley, and other cranioscopists before him, among whom is Von Baer, have drawn a line from the anterior end of the sphenoid to the end of the basi-occipital; and they have drawn such line as a normal line, from which the axis of the cranium shall be measured. This line is a line comparable with a line drawn along the plane of the cranium, from the posterior edge of the basi-occipital to the lower end or edge of the supra-occipital bone, in point of fact, to the plane of the occipital foramen. And in the lowest individuals of the class mammalia, being such animals as the rat or hare, the angle which the plane of the occipital foramen forms to the plane of the basi-cranial axis is exceedingly acute, and so onward and upward it goes along a series of mammalia, whose direct ramifications I shall not attempt to trace before the Anthropological Society. When we come to the lower races of man—when we come to the Negro—we have a different angle of the plane of the occipital foramen with that of the basi-cranial axis; and such plane of the occipital foramen differs from that of the higher or white races in an appreciable degree. I have preferred to take this broad point of difference between the Negro and the higher and white races of mankind, because this is a point of difference which cannot

depend upon climate, civilisation, or upon any of those agents by which some people seek to regulate what they can conceive of the action of the laws which have operated in altering the races of mankind. Here is a broad, distinct, and marked difference between the dark races of mankind, of which, for the nonce, we may take the Negro as a type; and the white races of mankind. And here only I would be disposed to base a great distinction between the Negro and the White man. Then there are other differences, some of which have been pointed out by those anatomists in the Southern States of America—Dr. Nott for instance—which also have a great value, especially to the anatomist, inasmuch as they show, on the part of the anatomical configuration of the Negro, such a decided approach to the structure of the lower animals—in fact, to the apes—as comparative anatomists must adopt. All those who have had the pleasure of inspecting the skeleton of some of the anthropoid apes are aware of the slender shape of the iliac bones, or of the bones of the pelvis in those apes. And those who are inclined to accept what I deem to be scientific views as to the position of the Negro, will be also satisfied to learn that, upon the testimony of Dr. Nott, the average circumference of the pelvis of the Negro is so far off the average of the European, that it is usually from 26 to 28 inches, that of the White being from 30 to 36 inches. Another character which separates the Negro from the European is, that the scapula of the Negro is much sharper and broader than in the white races of mankind. If any of our members will take the trouble to examine a recent number of the "Transactions of the Zoological Society," and will follow out the minute comparisons which Professor Owen has there made of the relation of the bones of the upper extremity in the white, the Australian, the gorilla, the chimpanzee, and the *oran-útan*, I think that such a comparison will be productive of most beneficial effect to the progress of anatomical science. Other facts have been stated by Dr. Nott, although not resting on an osteological basis. Thus he has ascertained that the muscles in the Negro have shorter bellies and longer tendons. The bulk of these researches have been confirmed by later inquirers into the myology of the Negro. Burmeister has told us that the ear of the Negro stands off to a greater distance from the head than that of the White race. That is another fact, in which the character of the inferior animals is indicated, though it may be distantly. M. Pruner Bey, in his *Memoirs* contributed to the Paris Society of Anthropology, has pointed out, I believe, a characteristic mark of the Negro dentition. Those persons who have thought to separate the human species from the inferior animals—and we at the present position of our science are not entitled to pronounce whether they have not acted on good ground—those persons have based their classificatory remarks on the dentition of the human species upon the fact that the alveoli (those sockets which contain the teeth in man) form a uniform semi-circular parabolic arch extending all round the upper jaw. They compare such structure with the admitted homologous structure of the gorilla and chimpanzee, in which the jaws, so to speak, are squared; in which the large sockets of the canine teeth have given to

the animal a most terrific expression, especially in the male, and they have proved that this is a broad and striking mark of distinction between man and the inferior animals. Nevertheless, the conscientious anthropologist will feel no regret when he learns, if he does not already know—and some of the members of this society who have read M. Pruner's memoir well know—that the alveoli in the Negro do not present the same round or parabolic curve as in the typical European, and that the curve of the Negro teeth is an ellipse instead of a parabola. There are lower races of mankind than the Negro, as Dr. Hunt has pointed out; and to my knowledge there is an Australian skull in a public collection, in which the canines, both in the upper and lower jaw—both in the maxilla and the mandible—are so arranged as directly to square the jaws; and they depart from the common assumed type of human dentition to at least as great an extent as that which is presented by the young chimpanzee under four months of age. So far, then, with those anatomical facts which have occurred to my mind. With respect to the physiological facts I would feel most diffident in going over them. Some of our members have so ably expounded from their personal observations that which they deem to be the character of the Negro, and I place myself such full and entire credence in their observations, that I shall not attempt to repeat, on this occasion, what Mr. Winwood Reade and Mr. Fraser urged at the last meeting of the society. The fact that the Negro race under all circumstances has never been able to originate a civilisation of its own; the fact that it has never devised an alphabet or architecture of its own; that all the great civilisations of antiquity, of Egypt, Carthage, Rome, have passed unheeded, unregarded over it. These are facts, to which I attach the greatest possible value. With respect to the origin of the Negro race I will also pass over that. My friend, Mr. Charlesworth, alluded to some metaphysical distinctions as to the word species. He said that the Negro could not be deemed to be a distinct species from the White man, for that the Negro and the White produced a Mulatto, whose offspring was fertile. Now, in the first place, I deny the fertility of the offspring; and in the second place, I deny the validity of the argument. And, with respect to any definition of species, which may be attempted to be accepted by scientific men at this time—especially when our knowledge of species rests upon the vaguest of all possible bases, I will prefer to quote the words of my friend, Professor Owen, on the subject. Professor Owen has told us, that “Few naturalists now-a-days, in describing and proposing a name for what they call a new species, use the term in the same sense as zoologists of twenty or thirty years ago—namely, that of a new creation. The proposer of the new ‘species’ now merely means to state what he actually knows, namely, that the differences on which he founds the name ‘species’, are, so far as observed by him, constant, and not attributable to domestication, or any outward influence within his cognizance.” I think that, taking such a definition as that, the Negro is a markedly distinct species to that of the European. As regards the “creation” of the Negro, I will prefer not to offer any hypothetical explanation of the

genesis of the Negro race, for I believe that some of our members might give to us what is the native tradition of the Africans themselves respecting their origin; a tradition I can assure you of far higher value in a zoological sense than that which has been offered by one who has been termed the father of British ethnologists, the late Dr. Prichard. I will pass over the question of the genesis of the Negro race, therefore, as one to which, in the present state of anthropology, we cannot make any reference whatever. I will also pass over these generalisations, which various zoologists have placed before us, as to the relative scale of the Negro race among the various species of the genus *homo*. Among these classifications, those of Bory de St. Vincent and Desmoulins are the most philosophical; but I will not here discuss them, as I trust they will be placed at full length on the notes which will be attached to our president's paper. And I will also pass over those classifications of the Negro race which seem to me of fully as equal value as that which assigns to the Negro and the White, to Malay and Australian, to the man of Tierra del Fuego and to the Tartar of Siberia, the same value as of one species. The Comanche Indians of Texas have given us quite as philosophical a theory, if not more so—quite as philosophical, though it may be rather a more rough classification. They put, as might naturally be expected, the red man himself first, and the white man next. Be it remembered that this is a classification of the races of man. The horse they put third, the squaw fourth, and the Negro fifth (laughter). Such a classification is based upon equally philosophical grounds as that which assumes the unity of the human race. And as I do not wish to introduce any political or hypothetical matter into this discussion, I will rest all my argument upon the pure facts. I will say that the pure Negro race has never produced—throughout all the many thousands of years in which civilised life has been connected with the race—it has never produced a poet, a historian, a general, a lawgiver, an orator, a mathematician, a naturalist, a mechanist, a traveller, a priest, a painter, an architect, a musician, a linguist, a physician, a philosopher, nor, I fear, any clever thinking men under any circumstances whatever. There seems to be a kind of mental or moral blight over the Negro race which is utterly inexplicable upon our present interpretations of mental or of psychological laws. Now, then, we come to the moral character of the Negro. Mr. Fraser and Mr. Winwood Reade have so adequately described this, that I, who have no personal experience in the matter, would willingly pass it over. No doubt to most of the fellows of the society the narrative of Herodotus is perfectly familiar. He is describing a race which some of his commentators have declared to be the Negro, and which showed their utter abnegation of that which we consider to be moral law. He describes the promiscuous concubinage of the Negroes throughout the whole nation, and the convenient arrangement by which, every three months, the children of the Negroes were adjudged to those who most resembled them. Such was the testimony of the old classicist. Such alike is the testimony of modern travellers on the banks of the Gaboon or on the Gold Coast. Then,

to continue our narrative of the facts, I think there has been proved to be a natural antipathy between the two races—the white and the Negro—a natural antipathy, which also, to a certain extent, bears out the hypothesis of distinct species. The same law by which the different species of wild animals refrain from breeding together in a savage state, prevails to a great extent in the operation of the relations between the White man and the Negro. No white man in America, and no white man, I believe in England, would willingly give his own child in marriage to a Negro; and I think that such relations as that serve to shew us also a moral law working in the case. The white woman—least of all in the Southern States of America—will not willingly mate with the Negro, nor the pure Negro with the white woman; unless in cases where the political relationship between the various states of society has been overset by means of a violent revolution. So far for the pure Negroes. I would not willingly waste your time with speaking of the mulattoes, especially as our president did not allude to them in his paper. I will not, therefore, allude to the state of the mulattoes in Hayti; nor to the fact that mulatto civilisation, now that it is erected in Hayti, has produced one of the most degraded states of social condition under which it is possible that two races which, from their close relationship, we could not have supposed to be so decidedly antagonistic, could live together. We have witnessed in Hayti revolutions by turns. In the first we saw the mulattoes massacring all the Negroes they could catch, and in the second the converse law was adopted. Geffrard, a mulatto, is the present president of Hayti, and he has turned out Soulouqué, a Negro, who was also a barbarous and blood-loving potentate. But while speaking of these mulattoes and mixed breeds of Hayti, I would call special attention to the very vague notion which prevails, even among the masses of intelligent English society, as to the relations between the Mulattoes and the Negroes. I have often heard individuals, whom I know not to possess half or a quarter of Negro blood, pointed out as typical specimens of the African race, whatever that may be. I, as an Anthropologist, will not attempt to define that race, and I hope that in this discussion we shall exclude the Mulattoes entirely from our consideration. Roberts, the President of Liberia, was pointed out as a Negro, and he possesses one-eighth only of Negro blood. Nevertheless, the Negrophilists, as my friend Mr. Pusey calls them, have selected him as an example of what civilisation might produce if the Negro could be the subject of such civilisation. And so I will entirely pass over the Mulatto races. On the last occasion a few remarks were made by our Vice-President, Sir Charles Nicholson, respecting the distinction between the entozoa and epizoa of the various races, as deduced, that is to say, from the tape-worms and flukes, from the pediculi and other parasites which infest them. Now, after some examination of those authorities to which we attach a high value on that subject, especially to Quandt and Küchenmeister, I have such doubts on the subject, that I am fully inclined to recur to the opinions which I expressed at the first meeting of this Society, that our deductions on the subject

are not complete. I hope, however, that diligent and sound researches will be made by the Society. Then, again, if it were shown that the fluke, or tapeworm, or parasite of the Negro is distinct from those infesting the white man, such difference would not logically involve a difference of race. It might involve a difference of the geographic distributions of parasites. Thus, although the Russians on the eastern side of the Vistula, and the Europeans on the western side, belong to the same great subdivision of man, yet, strange to say, the parasites on either side of the Vistula, taking that river as the broad boundary, differ most markedly. This surely shows a geographic and not an anthropological division. Thus I have passed over those broad anatomical and physiological facts that occurred to me on reading and hearing Dr. Hunt's most valuable paper, a paper which, at no distant time, I trust will be freely circulated among the members of this Society. And since the duty has devolved upon me of opening the debate this evening, I would trust that the discussion will be strictly confined to the facts which anatomy and physiology have made patent before us—to facts which observation can ascertain; and that any moral, any ideal, any philanthropic, any supposititious, any extratiditious notions may be rigorously excluded. I have no sympathy with those commentators upon any observations which Dr. Hunt or myself may have made, who have assigned to them a value apart from their anatomical or purely scientific nature. To such objectors I would say that the anatomist who is willing to declare the facts which research has placed before him, does not pay the slightest attention to any extrinsic considerations whatever. Men who are willing to declare the truth as it is manifested in the facts which science has placed before us—as it is manifested by the general laws which science has placed at our disposal—

Men of long enduring hopes,
And careless what the hour may bring,

will not be prepared to enter into any political discussions, but will be prepared to meet their adversaries in the Society upon the purely anatomical bearings of the question of the relations which the Negro bears to the white or other races of men.

Mr. PUSEY. I quite agree with our Secretary in thinking that the fertility of mixed breeds has no bearing on species; and I nearly agree with our Secretary in thinking that the Negro race has never produced any very great men. There appears, however, one exception—Toussaint l'Ouverture. I don't know his history so well as I might, but I think that subsequent investigation will only confirm this statement. There can be no doubt he is a pure Negro, for by the French law all Mulattoes were free, and Toussaint was a slave.

The Rev. J. DINGLE* said: I wish to enter my earnest protest against the manner in which the author of the paper under discussion has handled his subject. In a scientific point of view I can conceive

* These remarks are printed from Mr. Dingle's notes.

nothing more faulty. We have been asked to look upon the Negro race as of a species distinct from the rest of mankind, but scarcely any attempt has been made to show that this is in accordance with any principle of subdivision that has hitherto been recognised among scientific men, nor has the author laid down any system of his own which would justify such an admission. Science is likely to be little helped by such arbitrary and hap-hazard propositions as this, and we might have looked for more impartiality, and a deeper sense of responsibility, in propounding doctrines which aim to cut off a large part of the human family from the common rights of humanity, and have become stale in the service of avarice and tyranny, having been in use now for a century or more to justify the most outrageous oppression, and to palliate the most disgusting cruelty. I have been deeply grieved to witness the resuscitation of theories which have been so completely exploded, and which even the blacks themselves have long since learnt to treat with contempt. The lecturer promised to rely upon facts. How far he has redeemed that promise I leave every hearer of his paper to judge. A large part of it unquestionably consists of the mere unsupported opinions of other individuals, and these in positions from which, at all times, we have had abundant proofs of ignorance and prejudice; and as to his facts, by bringing forward only those on one side, the author has acted as special pleader, rather than as a faithful investigator of truth. I need not do more than advert to the question of scientific classification. It is well known that fertility among each other has been very generally recognised as the mark by which the members of the same species may be known. There are very strong *a priori* reasons in its favour, and Dr. Prichard has elaborately shown that it is the true mark, and that all the different races of mankind answer to it. I may leave the matter, therefore, upon his testimony, only expressing my surprise that as the statement, that God "has made of one blood all nations of men for to dwell on all the face of the earth," rests, as a scientific principle, on such high authority, the lecturer should have spoken so slightly of the expression of it. The lecturer has mentioned some individual who gives it as the result of his observation that hybrids between the blacks and other races are not continuously prolific; Dr. Prichard, taking a broader and more philosophic grasp of his subject, gives a mass of statistics to prove the contrary, and even mentions a peculiar race of men in South America (the Cafusos) which has been established by a cross between the American and African races. I go on to the mention of some leading and important facts which directly contravene the lecturer's position as to the incapacity of the Negro for benefiting from his contact with Europeans. Allusion has been aptly made by Mr. Pusey to the case of Toussaint l'Ouverture; it is, however, by no means sufficient for us to advert only to his particular case. At the outbreak of the French revolution events took place in St. Domingo which were enough to subvert all the lecturer's positions as to the inferiority of the blacks. The development of energy and talent among them was as decided as it was in any other country in that remarkable era. Toussaint, Christophe,

and Dessalines were all thorough-bred Negroes—[Mr. CARTER BLAKE: Certainly neither Christophe nor Dessalines; probably not Toussaint l'Ouverture.]—and they were unquestionably great men—men who had raised themselves from the most debased position by their intellectual power. Rank and its responsibilities had, before the revolution, been conferred on them under the auspices of the French and Spaniards, and in the lofty eminence to which they afterwards attained, two of them showed themselves able to appreciate the highest influences of morality and religion. I do not say they obeyed those principles in their own persons. We all know more of morality than we practise, and our character, as moral and intellectual agents, does not rest upon our always obeying the principles of reason and morality, but upon our capacity for understanding them, and recognising their obligations. No one can read the code and proclamations of Henri Christophe without acknowledging that he was a sovereign who recognised the value of wise and good laws and principles of government. I do not go into the question as to whether these acts of state were actually framed by men of Negro blood, though there is testimony to the fact, and doubts have probably been raised without foundation. It is sufficient for our argument that they were the adopted measures of the Negro sovereign, who would not have accepted the accessories of civilisation if he had not recognised their value. We must remember, also, that the community over which he ruled was, to a great extent, a Negro community, and that many of his ministers were of that race. Whatever may be the ultimate result of this experiment in Negro independence, enough has already been done to show that the Negroes are not incapable of civilisation, and we know that the causes which operate against them, especially the unavoidable establishment of a military despotism, have tended to the ruin of the most civilised states. The kind of intercourse which the Negroes had with Europeans in Africa sufficiently account for the little benefit which, till lately, they had derived from their contact with European civilisation. We learn from Mungo Park what strong prejudices had been generally excited among the Negroes against the Whites by what they had seen of them. Never witnessing among them any acts of Divine worship, they supposed that they were destitute of religion, and, observing their insatiable eagerness to possess slaves, they thought that they were cannibals. Few men have had better opportunities than Park of being acquainted with the Negroes, and his statements are in direct contravention of the lecturer's representations. The latter would have us believe that they were utterly given over to lying and lust; Park shows us, by a touching anecdote, that they have the highest appreciation of truth, and that, so far from being given over to indiscriminate lust, they were remarkable for conjugal fidelity. In this latter respect what he says of the Moors is in strong contrast with his account of the Negroes. He tells us, too, that the Negroes were eager to secure the intellectual advancement of their children; he denies that they should be considered an idle race when due allowance is made for the climate in

which they live; he shows that care was taken for the general education of the people in certain important arts of life, especially weaving and agriculture, and that they had skilled artisans in the manufacture of iron and leather. Apart from the vices of their rulers, and the evils introduced by their contact with Europeans, they were, as barbarians, more than usually disposed to be a contented and happy people, needing only the illumination of a purer faith, and the protection of a powerful and beneficent government. That their vices have been more prominent than their virtues, may readily be admitted; it is no more than has been true of the barbarous aborigines of every country under the sun. Prichard assures us, that the aborigines of Europe were in a more degraded state than the Negroes now are, and that they emerged more slowly from their pristine barbarism than many of the native African nations have done; and with reference to the superior influence of Mohammedans over that of Europeans, to which Mr. Fraser has alluded, I may mention that Prichard agrees with Park in deploring the debasing tendency of that kind of intercourse which the Africans have had with Europeans, and the utter ignorance in which they had generally been left, not only of the teaching of Christianity, but even of the existenee of any religion at all among the Europeans. Where the Negroes have fairly come in contact with civilisation, they have shown themselves capable of great improvement. Those whom we sometimes meet in our own streets are not savages. The slaves in the Southern States of America are acknowledged to have visibly advanced in civilisation, and their tendency to rise to the level of other men is sufficiently attested by the fact that the slave-holders, from jealousy of it, do, as a rule, prevent them when young from receiving any instruction. I state this upon the testimony of Mr. Russell, the correspondent of the *Times*, who putting in vain the most elementary questions in religion to some children of twelve or fourteen years of age, was told by the overseer that it was not thought advisable to instruct them in such matters. The idea that Negroes are quick as children, but grow more stupid when they arrive at adult age (an idea very difficult to verify) is, I am apt to think, a mistake arising, like many others on this subject, from inadequate knowledge of what is true of men in general. Something of the same kind would probably be found true of men of every race. The indications of talent among young people are common, while in after life very few raise themselves above the average of their fellows. Under all circumstances, the vivacity of children is unrepressed, but among barbarians, and especially among slaves, there are not the motives in riper years to urge a man forward in life. I am informed by a lady, who belonged to an old Jamaica family, and who spent eleven years of her life there in the times of slavery, that it was usual to give the slaves the chance of emancipating themselves, by allotting them ground in the interior of the country, and giving them the Saturday to cultivate it on their own account. In this way many obtained their freedom. She knew slaves who, from their superior attainments, were valued by their masters at ten times the price allowed by the government at the time of

emancipation as the average value of slaves. From her intercourse with them, she had received a favourable idea of their capacity, especially for the cultivation of mechanical arts, and she had met in society a Negro gentleman from Hayti whom she describes as a person of very polished manners. I was much pained by the slighting way in which the lecturer referred to the efforts of the philanthropists, as he called them, in behalf of the Africans, especially as it was accompanied by the entire suppression of facts which really had a most important bearing on his subject. He had undertaken to help us to form a judgment as to how far the Negro might possibly benefit by contact with European civilisation, and all he could tell us of the result of the efforts that have been made on their behalf on the West Coast of Africa (the only place where the experiment has been earnestly tried) was, that the Negroes there were a lying set, or some expression of that sort. This is about as fair a judgment as if a countryman, who had found it hard to avoid being robbed in London, were to report in the country that the Londoners were all rogues. If, sir, we are to be guided by facts, in this matter, the following ought to be of some weight with us. There has been an attempt made at Sierra Leone to form the slaves released from the slave ships into a Christian community upon the European model, and the result of this experiment of about half a century, upon the vilest refuse of Africa is, that there is a respectable Christian community there. A tract of country of about three hundred square miles has been laid out, as in England, in parishes, throughout which there are numerous devout congregations well instructed in the Christian faith, and remarkable for sober, orderly, and Christian conduct. In a population of nearly fifty thousand, there are in connection with one religious body upwards of seven thousand attendants on divine service, four thousand communicants, twelve ordained native clergymen, and fourteen native lay agents; more than one quarter of the whole population is at school, a larger proportion, perhaps, than in any other country in the world, and only about six thousand remain Pagans and Mohammedans, the rest being divided pretty equally between the Methodists and the Church. Dr. Livingstone, in a letter to Sir R. Murchison, expresses in the highest terms his admiration of the result of the experiment, and affirms that the Sabbath is as well observed as it is any where in Scotland. Moreover, the people collected at Sierra Leone have become desirous of making their countrymen in the interior partakers of the same benefits with themselves, and, in this way, a mission was undertaken to the Yoruba country, among other places, in 1845. The people were so well disposed to receive Christianity, that already there is a church with upwards of one thousand communicants, with five native clergymen, many other native agents, and a large number of scholars. I could bring abundant testimonies to the soundness of the work which has been thus done for Africa; and surely, sir, it is better to have been instrumental in forwarding this great practical result, than to have been striving to revive the absurd and exploded theories, under the shelter

of which a mass of crime has been perpetrated which has filled the world with disgust.

Mr. T. BENDYSHE, M.A.,* said: I should like to make a few remarks upon Dr. Hunt's able and interesting paper, with the conclusions of which I cannot altogether agree. And first, it does not seem to me so clearly made out, as it does to many, that the Negro differs in what is called species from the European. For example, the African crania in the Chatham Museum are in number 128, and Dr. Williamson in his remarks upon them, after dividing all the skulls into four classes, goes on to say: "The characters stated as marking the four classes of skulls, and the division into races, are those usually found; but there are no characters which are universally present in every race. For example, in the Negro race the Mandingoes' skulls are well formed and approach to the European, and show few of the Negro characters: on the other hand, the Kroomen display these characters in their exaggerated form." And again, "In general the superior maxillary bone of the Negro does not project, nor is the skull compressed laterally; this occurs only in the exaggerated specimens of the Negro race, and out of 128 African crania, these strongly marked peculiarities are only found in two instances." He asserts, also, that the situation of the foramen magnum, is the same in Negro as in European skulls, and that the lower jaw is in general neither thicker nor stronger, and the angle the same as in Europeans. There are seven skeletons also in the museum, one of a Negro, of which he says, "The bones of the pelvis, and those of the skeleton generally, do not differ in the slightest degree, with regard to form or texture, from the English or Greek." And "the points of the fingers in the Negro, Hottentot, as also in the two Greek and English male skeletons, reach as low as the middle of the femur." Some of the differences, therefore, which have been relied on as specific, do not seem constant enough to compel us to come to that conclusion. Some attention, too, must be paid to the statements made by qualified observers, that both the European and the Negro in the Southern States of America, show signs of an alteration in their physical type, and both in the direction of the Red Indian type, or as it is said, that of the Iroquois. Now, if both the European and the Negro are so much acted upon by the climate and other local causes, that there is some prospect of their eventually being distinguished as a race with many of the characteristic features of the Red Indian, it is but fair to assume that they must have a common specific basis from which to start. For if not, then we must admit that climate is so strong an influence, as to be able to destroy what were originally specific differences; in which case it cannot be positively asserted that two races occupying very different climates, as the European and the Negro, are not of the same origin, or at least species. M. Bouté, in a paper read at the meetings of the French Anthropological Society, has tried to throw ridicule on this statement, by saying that it is reported that the Negro is observed to get more like the European, and the Euro-

* These remarks are printed from Mr. Bendyshe's notes.

pean like the Red Indian, and this is quite incredible, for he asks how the European type, which has such a marvellous power over the Negro, is influenced by such an inferior type as the Red Man? But the answer is very easy. Both are influenced, not by the Red Man, but by the climatic action which has made the Red Man what he is; and as both approach the Red Man, they will, of course, more and more resemble each other, and this it is which has really taken place. Indeed, I am inclined to think these apparently contradictory statements are a confirmation of the assertion, because they are made by independent observers and can only be explained in the way I have suggested. I have also a question to ask our learned President, to which I do not expect to get a satisfactory answer; but which, I think, demands some attempt at explanation, before we can be called upon to admit this diversity of species between ourselves and a being we all agree to recognise as man. Let us suppose that somewhere in the interior of Africa the intermediate beings should be found, which, according to the Darwinian theory must once have existed, if they do not still, between the highest ape and the lowest kind of man we are at present acquainted with,—I should be glad to know how it would become an enterprising member of this Society to act under the influence of such a discovery. At present, however much we may differ theoretically, we know practically what to do. Mr. Reade shoots and presents us with the skin of a Gorilla—and will no doubt tell us shortly the particulars of his exploit. Dr. Hunt presents us with the skull of a Negro: our consciences are satisfied, and we don't ask how he became possessed of it. But when brought face to face with the intermediate creature, how should we act? How should we distinguish between the animal we ought to shoot with triumph, and whose skin should be sent home and stuffed, and the man whose skull and skeleton would be equally interesting: but the manner of whose decease we should not care to know. Are we prepared to lay down any practical rule by which we could easily distinguish between the most anthropoid ape and the most pithecoïd man we may one day be acquainted with? Is it the test of language? That I believe has been given up. Is it that of mind or instinct? That distinction is now thought to be equally untenable. I am only acquainted with one test myself, with one faculty which appears to exist in the very lowest specimens of humanity, and which is wanting, not only in the apes, but in all animals whatsoever,—I mean the faculty of representing, or at least being able to comprehend the representation of natural objects when drawn upon a plane surface; the art, in fact, of drawing. That no race of men have hitherto been found ignorant of some faculty of drawing, or at all events understanding drawings, is, I think, undoubted. The Veddahs, who are asserted by Sir E. Tennant to be destitute of language, by his account trade by means of drawings. The Esquimaux understand and can correct the outline of a coast. But I know of no animal who has ever been supposed capable of comprehending the meaning of any representation at all. But if this constitutes a specific difference, then the Negro cannot be shut out from ourselves. But however this may be, until the question I have

put, namely, where we should draw the line, be solved, I do not think we can be sure that we have yet hit upon the true specific differences between ourselves and other races of men. Such differences may exist; but we ought not to assert that they do, until we can demonstrate what they are. Nor can I agree with Dr. Hunt in his position, that the Negro ought to be subordinated to the European, or that he can only be humanised and civilised by the European. The Negro, he said, has had the benefit of all the ancient civilisations, and had derived no good from them, or no permanent improvement. As to the latter statement, I will consider it in two ways: first, as being correct, and secondly, as being asserted without sufficient proof, and in contradiction to recent investigations. Assuming, then, that the Negro came in contact with the ancient civilisations and derived no benefit from them, there can be no doubt that it was as a slave that he felt their influence, and it seems to me singular to argue that because previous civilisations treated the Negro as a slave without effect, therefore the present civilisation is entitled to treat him as a being subordinated to them by nature. I think it would be quite as fair to say that it was precisely because he only knew the European as a slaveholder that the Negro has derived no permanent benefit from him. But even admitting that the Negro may present a more favourable side of his character to those who observe him under the influence of European slavery, I cannot allow that to be a reason why he should necessarily be considered a fair subject for such an experiment. I do not mean to rest my argument upon any moral grounds. I am of opinion that true expediency and true morality must ultimately be the same; but as it is more easy to pronounce an opinion on what is expedient than on what is abstractedly and morally right, I shall confine myself to the former considerations alone. With respect, then, to the effects of slavery there are two parties to be considered: the master and his slave. And even if a slight improvement in his daily life may be traced in the Negro, that cannot counterbalance the deadly influence that the dominion over slaves has always had upon every variety of man. However superior the European may be to the Negro, he certainly is infinitely superior still to the domesticated animals. Yet I need not remind you that though man in the abstract may be said to exercise absolute dominion over the animal, yet as an individual it is found impossible to trust him with absolute power. Nor does ill-treatment of animals prevail among the lowest ranks alone. It is only recently that we have all been shocked by the terrible accounts of the practices carried on by men of a liberal profession and of high position in a neighbouring country. Indeed, the animal may be said scarcely now to be in the position of a slave; for his rights are matter of legislation, and though his life may be in the hands of his master, the law provides for him an immunity from torture, and regulates the amount of labour to be demanded from him. But there is another and a large class of beings who are in some respects as inferior to man as Negroes are to Europeans. I speak of women. Woman is shorter in stature and far inferior in strength. Her faculties are more precocious and decay

sooner, nor do they ever arrive at the same extension of development. From the age of twenty to forty, and in a normal state, she is in process of child-bearing; so that during the time when a man is perfecting his education and taking his place in the world, she is principally subject to functional disorder. It would be well for many women if they were allowed to possess no property beyond a sufficient subsistence; and there are many in this country who would rather be the third, or fourth, or fifth wife of a man of large fortune than never be married at all. Accordingly, for many ages the lot of woman has been slavery; and whilst a slave she made as little progress as the Negro, her fellow slave. Nor if might makes right can she complain. But do I then advocate the deprivation of women's rights, or of her property, or the institution of polygamy? I desire nothing of the kind: but not because I feel myself bound to admit any positive rights vested in woman against her superior, man; but simply because experience shows that, in proportion as man abdicates the rights which force gives him, so he improves himself. No one here will probably deny that where woman is most free man is most civilised; and if the slavery of woman has injured the nations who indulged in it, not less has the slavery of the Negro, or of his fellow man. For if the ancient civilisations cannot be shown to have benefited the Negro, it is not difficult to prove that the practice of slavery was highly prejudicial to every ancient civilisation. And whatever the future may have in store, there is as yet no recorded instance of a country destitute of peasantry, and living on the labour of slaves, who have been able to resist in the long run the persistent attacks of a nation of freemen. But whilst I cannot believe that slavery is always to be the lot of the Negro, I do not think we are without reasonable grounds for forming an opinion as to the probable agents and means of civilisation, or improvement of that race. It is not the Bacon or the Newton who are always the best exponents of their own discoveries. That task is better adapted to the middle-class of minds, who have the faculty of popularising and diffusing what, perhaps, they themselves imperfectly comprehend; and in ordinary education the more advanced pupils are frequently the best conductors of knowledge to the young beginners. So we ought not to be surprised to find that the Negro seems more likely to be slowly elevated in the scale by the insensible influence of those who approximate more nearly than the white European races to his own appearance and condition. That this is so I will presently demonstrate; but just now I will give some positive facts for coming to the same conclusion from another point of view. I never attempted to dispute that the Negro has a closer resemblance to the ape than the European; and hence, I should be inclined to suppose, that those races to whom familiarity with the ape is less unpleasant would be the most likely to understand and sympathise with, and therefore to exercise beneficial influence on the Negro. Now there can be little doubt that the dark races of Europe have been more inclined to make a playmate of the monkey than the white. To say that this is owing, partly to our climate, which, perhaps, does not permit the animal to exist so easily, is not a sufficient

answer, though it may be an additional reason. But it is generally the dark Italian, and not the Englishman, who teaches the monkey his tricks, and is as friendly with him as a dog. And if it be true, as there seems good reason to suppose, that the ape of Gibraltar is not indigenous but an importation, we have an additional proof that proximity of geographical area, combined with deeper colour, causes greater sympathy between man and his nearest resemblance; and, accordingly, we find that the Portuguese and the Spaniard have a much smaller disinclination to mix with the dark races than ourselves. Hence their influence must necessarily be much greater. And though in many of their settlements the Portuguese may have degenerated, yet probably had they not preceded us, and made us as it were intelligible, our success, if we have had any, in the Negro, might have been less than it is. I said, in another part of this paper, that I thought the assertion that all the ancient civilisations had produced no effect upon the Negro might be somewhat difficult to prove. The Egyptian civilisation, for example, has so long passed away, that we can only laboriously reconstruct some faint and probably fallacious idea of it. That we ourselves should have been, however, exactly what we are, if the banks of the Nile had never displayed that civilisation, is very doubtful. But it would be very difficult to point out in what consist its effects upon modern Europe. Now if this be so, if this civilisation is so ancient, that what was worth preserving has become our unconscious inheritance, we can scarcely expect to find its traces existing in the Negro. But because we cannot point them out is scarce a sufficient reason, any more than it is with ourselves, for saying that nothing was effected thereby. Vol. iv, p. 426, Dr. Barth says distinctly that the Negroes must have received in more ancient times several institutions from the Egyptians, with whom, says he "I have no doubt they maintained an intercourse by means of the energetic inhabitants of Augila from a relatively ancient period;" and he instances the great care which the Songhay bestowed upon their dead. "The attention thus bestowed upon the dead seems not to have been in consequence of the introduction of Islam, but appears rather to have been traditionally handed down from the remotest antiquity." The Egyptians, therefore, do not seem to have been so powerless over the Negro as has been asserted; and in modern times, again, the religion which Egypt professes, has undoubtedly brought with it in its progress to western Africa a very considerable amount of civilisation, of which the Negro has shown himself by no means incapable of taking advantage. It has abolished human sacrifices and many gross superstitions, and in all places established some kind of learning and a literature. "Mohammedanism alone in these countries," says Dr. Barth, "maintains any sort of government. It alone has succeeded in giving to distant regions a certain bond of unity, and in making the land more accessible to trade and intercourse." It is in my opinion only by following the channel which Islamism has made that any real benefit can be done to the Negro. Through Egypt, and by means of Egypt, the real influence of Europe must be brought to bear. The efforts of missionaries on the western coast have produced

literally no effect whatever. The tide of Mohammedanism is still sweeping on towards beyond the equator; but from this we ought to learn the lesson how to bring in time something better. And if we are but content to follow in the footsteps of the old and the modern populations of Egypt, we may yet be able to engraft upon the savages of central Africa, and upon the Negro in his own land, and unremoved from his own soil, all the advantages he is capable of receiving.

Mr. WINWOOD READE: Such experience as I have had in Pagan and Mohammedan Africa leads me to endorse every sentiment that Mr. Bendyshe has expressed in his paper; and, in fact, I have put the very same ones into print in a work that will soon be published. With respect to intermediate tribes in Equatorial Africa, I have no doubt that the Negroes there are comparative strangers, considered in the geological ages of the world. Though I never saw them, I heard rumours of a race of people which seemed to answer what the Hottentots are among the Caffres, in Equatorial Africa; and I think it very possible that, when the caverns and mountains can be searched, intermediate tribes will be discovered between the gorilla and man. With respect to the Mohammedan known in Africa, I have devoted a great portion of my work to proving that Christians cannot civilise Negroes, and that the Mohammedans can, and are doing so. They are making thousands and thousands of converts, as Mr. Fraser, I have no doubt, can inform you, and such civilisation as the Negroes possess is owing entirely to Mohammedan influence. It is true that the Pagan Negroes have traces of civilisation among them, as Mr. Bendyshe supposes. For instance, in the Congo, where no Arabs have yet arrived, they have the practice of preparing mummies, as was done in Egypt, and also other traces of civilisation. With respect to Mr. Dingle's remarks, the Negroes of whom Mr. Park spoke so highly were Mohammedans.

Mr. DINGLE: Certainly not.

Mr. READE: They were, at least, the Mandingoes and Foulahs.

Mr. DINGLE: Mungo Park makes a distinction between the Mohammedans and the Pagans, and speaks especially of Pagans asking education from the Mohammedans.

Mr. READE: According to Mohammedan laws, Mohammedan priests would not instruct Negroes if they were Pagans.

Mr. DINGLE: He states it as a fact. Of course, the tendency would be to make them Mohammedans, but, nevertheless, they would be children of Pagans. Of Parker, especially, the man he remained with so long, he spoke expressly of his schoolmaster.

Mr. READE: I have no doubt they were children of Pagans; but, of course, they must have been Mohammedans to receive instructions from the Mohammedans.

Mr. DINGLE: Children are not one thing or another.

Mr. READE: I have seen fifty of these schools in Mohammedan Africa, and many children of Pagans that have been taken from their parents and educated by the Marabouts, or Mohammedan priests. They are taught to write and read Arabic, though certainly they are not taught the Koran, and to teach them the Koran is the chief object of

Mohammedan education. With respect to a custom which Mr. Dingle cited as a proof of high civilisation—

Mr. DINGLE: No; I never cited anything as a proof of high civilisation.

Mr. READE: The custom of a Negro refusing to marry a Negress if she is not a virgin I will explain. Virginity in Africa, as in other countries, is considered a marketable commodity. When a man marries, a new goatskin, or piece of white cloth, is put on the marriage bed, and if the signs of virginity cannot be produced, the husband receives back the money paid for his wife. That, I am afraid, we cannot look upon as a sign of high civilisation.

Mr. DINGLE: I did not say "high."

Mr. READE: Respecting the precocity of Negro children, on that there can be no doubt. Mrs. Walker, the wife of the Rev. William Walker, an American missionary, who was ten years in Africa teaching children, and had twelve years' experience in teaching in America, told me that the Negro children were more precocious than the American children, but had not such retentive memories, and that, generally speaking, they came to a state of *in statu quo* about sixteen, and after that slowly forgot all they had learnt.

Mr. DINGLE: I could give you plenty of such instances among our own countrymen.

Mr. READE: I am only speaking of Negroes. For myself, I have learnt something since I was sixteen. With respect to the civilisation of the Negroes of Sierra Leone, I have been there, and have had opportunities of seeing something of the native character. I got there on a Sunday, and had a Negro to carry my luggage to the house where I was going to stay. When I got there I offered him sixpence, which I understood was the proper sum to pay. He said that I must give him a shilling, double the price, because he was breaking the Sabbath. In the afternoon, walking about the town, I saw a Negro woman, with a very pretty child. I said, "That is a very pretty child; is it your daughter?" "Yes," she said, "that my proper daughter. That am very pretty child. Would you like to buy him?" I said, "What?" She said, "Give me plenty of rum and cloth, and I sell you my child." So I thought to myself, this is some woman just come from the interior of Africa, who has never received Christian instruction; but, when the church bell rang, she stopped and said, "You no hear church bell? Stop, I'll go to church; now, after church we palava." With respect to a great number of native preachers in Sierra Leone, the most eminent of them had been in a chain gang. The doctrines they expounded were curious; one specimen I will give you. The native preacher wished to explain to his congregation the origin of the white man. He said to them, "My bredren, you see a white man; he bad too much, he wicked too much. You wonder how God let such a man as that come into the world. Now, I tell you. A berry long time ago, Adam and Eve lived in one beautiful garden; plantens there sweet, potatoes, plum wine,—ah, ah, too much. They had two sons—one Cain, the udder Abel. Cain kill him brudder, Abel. So God He came out from de sky, and says, 'Cain!' Cain go and hide himself in de bush; so

God says, 'Cain, you tink I no see you, you bush nigger! Come here, Cain!' So Cain came out, and said, 'Yes, Massa; I here. What do Massa want?' God said, 'Where your brudder Abel?' Then Cain turned white all over. Him de first white man, bredren." With respect to the Negroes of Sierra Leone having the same rights and privileges as the white man: the Negro certainly is put upon the juries. In fact, there are more Negroes than white men on the juries, generally in the proportion of about nine or ten Negroes out of the twelve. The consequence is, that whenever a white man brings an action against a black man, the white man always loses, added to which there are instances on record to show that black jurymen are in the habit of getting drunk in the jury-box, and sometimes of insulting the judge, and getting committed. I will just give you one instance, to show the kind of *animus* that prevails between the white man and a black servant who insulted him. The white man said, "Get out of my yard;" the black man, "See you damned first." The white man took him by the shoulders, as we should do in England if we were insulted on our own premises, and kicked him out. The black man brought an action; the white man was fined £50. I have nothing to say against the Wesleyan missionaries in Sierra Leone; they are a very good kind of men. They do not always speak good English; but I believe them to be pious, hard-working people. They are liable to be deceived by the West African Negroes, who are the most consummate hypocrites and the greatest liars in the world. But I must say, in favour of the missionaries, that times are very much altered since Major Laing wrote, when he said, "There are three missionaries in Sierra Leone, one of whom is living with a Negro woman, another is in the habit of getting drunk in the streets; and the third has been tried for the murder of a little boy, whom he had flogged to death."

Mr. PLINY MILES: It appears to me as though the arguments tonight have all been on one side; and, partly on that ground, and partly because the other side wants defending, I think I shall take the other side. The statements made in reference to the paper which was read at the former meeting, are, I have no doubt correct. I did not hear it, but it has been intimated to me that, according to the author of that paper, the Negro comes nearer to the Gorilla or Ape than the white man; in other words, he is nearer a brute than a human being. (*No, no.*) Something, at least, of that sort, was the impression produced upon the meeting. Now, I shall endeavour to make it appear that such positively is the case, and will begin *de novo*, to endeavour to prove it. I shall discuss the question physiologically, not omitting facts relating to philanthropy, politics, or religion. I have no doubt that you will agree with me when I call attention to the fact that when we visit the Zoological Gardens, or similar collections, and look at the different animals, of apes, baboons, and monkeys, we feel a great degree of repulsion in consequence of the certain amount of resemblance that they bear to the human race, and yet they are evidently beasts. Now, sir, is it not evident that if we look upon the ape as a beast and not a human being, if it were not created somewhat in the likeness of a human being, we should feel no more re-

pugnance towards it than we do towards a greyhound. It is evident to me that the Almighty, in creating him in the likeness of a human being, has done so in order that we might not think him to be one, and he has given him one of the worst places in the world to live in—the tropics. It must be evident that the Negro is an inferior race, for no one but an inferior race would live in the worst part of the world. There are other facts to show that the Negro approximates to animals. The best cavalry soldiers in the army of Africa in ancient times, were the Numidians—true Africans and Negroes. They actually rode bare back, and in consequence of the aid given by that force, Hannibal was able to conquer Rome. Now, I think it is readily conceivable that the Negro must be somewhat nearer the animal than the man, or he could not make such good use of an animal such as that, and ride without saddle or bridle; and I think that the inference we must draw from my first statement, that the Almighty has given the Negro a profound idea of religion and reverence, in order to repel us from them by showing us that they have a certain amount of resemblance to ourselves. In fact, the argument has proved too much. It proves that the Negro is something above an animal, that he has a high appreciation, not only for character, but for persons that are superior to himself. In the United States of America we get a striking proof that he is not only inferior to the white man, but deserves to be so. He is very humble and submissive. The white man shows the extraordinary talent of being a very great tyrant. We have seen a great many accounts of the white man being very abusive; and the Negro race, with one or two exceptions—such as the case of a white man who got shipwrecked on the coast of Africa, on which occasion the Negroes exhibited something of the same talent—shows a different disposition. The white man, therefore, must be a superior man, because he has exhibited that peculiar kind of ability that tyrannises over his fellows. Now, I shall consider that you will take for granted what I state to-night, without troubling me to bring up any skulls; I shall propound all my facts *ex cathedrâ*. I was going to give you an example of a Negro, whose name I very much regret to have forgotten; but those who travelled in the Southern States of America fourteen or fifteen years ago, must have heard of him. He was an eminent engineer who built all the covered bridges that crossed the streams in the States of Alabama and Georgia, and they are certainly finished specimens of workmanship. In fact, his master made so much of him, that he liked very well to forfeit all his earnings. Now I think that that fact proves that the Negro is incapable of any great degree of improvement. Another fact I remember with reference to the city of New Orleans. There are three distinct races there, and when negroes, whether free or bond, are taken from one of the municipalities—from the English to the French, or the French to the English—only knowing the language they have been brought up in, they actually pick up the other language in six weeks. Of course they do not talk it grammatically; but I think that, having that extraordinary facility of acquiring a language, they must be considered to be a degraded race. I have another argument which will

affect us as Englishmen, for I claim to be a good Englishman, though I happen to have been born on the other side of the Atlantic. You have all heard that, sometime ago, a distinguished general, named, I think, Julius Cæsar, once came to this country. You will not dispute it that they were real Britons who lived here, wherever Julius Cæsar crossed the Thames, whether he did so at Kew or at Hammersmith. Now, the ground I take is, that the Englishman, *per se*, must be an inferior race of being, and it can be proved most clearly. Julius Cæsar brought a pretty large army with him, and undoubtedly there were some females in it as well as males. The successors of that army lived in the island some 400 years. I know this as a matter of course, because, my own name being Miles, I must have descended from them, and as *miles* meant one of a cohort, you must consider me to be one of a thousand also. One would think that that cross would improve the race of Englishmen, and we are told by our secretary that we are bound in the discussion of the ethnological, physiological, and human characteristics of the Negro, to put on one side all the crosses or mulattoes. Well, grant that for the time being. Now I think it must be clear that the original English race must have been a remarkably poor one that required another cross in a period of four hundred or five hundred years, when the Picts and Scots came in, and another when the Saxons came in. Afterwards we had a wicked Frenchman, usually termed a Norman. He brought over some of the best blood in England. Well, this sort of business continued, the English continued to deteriorate, and new blood had to be brought over at various times; so that I think I have proved, not only that an Englishman is an inferior character *per se*, but that at the present day he is absolutely nowhere.

Mr. BURKE: It appears to me that we might go on discussing this question till doomsday, arriving at no result, if we follow it out in the manner in which we have done this evening. I have not had the advantage of hearing Dr. Hunt's lecture, and consequently I can only speak in reference to some remarks made this evening. I cannot precisely agree with my friend Mr. Blake. I do not disagree with him so much in his statements as in the use he has made of them. When we are talking of anatomy and physiology and so on, there are two questions: first, as to the accuracy of the facts; and then a still more important one, as to the use made of those facts. As a general rule, I have little or nothing to object to the facts, but I have every thing to object to the inferences. It is one thing to bring a series of minute observations in reference to some particular part of the skull, to some bone, or something of that kind, and it is quite another thing to assume the importance of that difference. It is one thing to say that there is a difference of an inch in a certain bone, or in a certain angle, and it is another thing to say that that is of such extreme importance as to distinguish one animal from another. I believe that the only importance that can be attached to anatomy, is the fact that it is sometimes capable of being supported physiologically, I believe the only importance that is attached to a piece of mechanism, is that that mechanism is found to perform similar functions, and that unless

you have an idea of the use of the mechanism, you have no right to speak of its importance, or its non-importance. The anatomist who has taken pains to draw these minute distinctions and differences between certain bones and certain parts of the brain, and so on, is working upon materials of which he does not know the value. Anatomists do not profess to be able to tell you the value of any particular part of the brain, and yet they commit the egregious *non sequitur* of saying that this part is important, though they professedly do not know what its functions are at all. There is the absurdity. I do not say they are bad observers, but I say they are very bad reasoners. That is the complaint I have to make. It is the greatest absurdity to be talking of anatomy where you are not able to talk of physiology. It is a pure absurdity to be talking of the structure of the skull when you do not know the value of the brains that are in it. If I want to know the value of a piece of furniture, a musical instrument say, I like to hear it played. Do you think I guide myself simply by the look of the mahogany, or its peculiar shape? So, if I want to know the superiority between one portion of mankind and another, I must look at the man in action. You tell me that the Negro has inferior manifestations. Well, on that ground I can reason with you. But the anatomist is not worthy of the snap of the fingers on a question of that sort. He is a man who is working in a particular channel, but he does not stop to consider whether his means are adequate. Now, I say that the philosopher, if he wants to solve a question, will look all around it, and he will not be such a fool as to talk away on something that will give no result, when, perhaps, by directing his attention still further, he may see another mode of solving a difficulty. That is the fault of the anatomist. It is the old story, each man walks in his particular channel, whatever that may be; but the reasoner does not do it. He looks all around him, and thus he draws his inferences, while the anatomist keeps himself to his own province. This is all very well, but when he becomes a physiologist that is another affair. Physiology here is the observance of men in action—the observance of his intellect and character, and social relations,—that is the physiology of the brain. You do good a step further if you go with the phrenologist,—assuming that he is going right—and find out that particular functions are performed by particular parts of the brain. A variety of remarks have been made in regard to this question of superiority and inferiority, but they have all been exceedingly one-sided; they leave a whole universe of facts untouched, that are equally cognate to this question. Is there no superiority and inferiority except as between the poor Negro and the White man? Is not the Asiatic inferior to the European? I maintain that he is. Are not the inhabitants of the Indian Ocean inferior to the Hindoo? I maintain that they are. Is not the Chinese, in one phase of character, very much inferior to the Hindoo? Is not the inhabitant of Asia Minor, or of Syria, a higher type of race than the Hindoo? Are there not relative inferiorities and superiorities in the different races of Europe, and even in the different races of one country? We talk of antipathies of race: you say that a White man will not give his daughter to a

Negro; I beg leave to ask whether an English nobleman will offer his daughter to an English peasant. Of course there are sympathies and antipathies of race, and I say that there are such among ourselves. If you live in familiar intercourse with the Negro, you find that he is inferior to yourself. You may possibly be a very fine fellow, you may be one among the superiors of a superior race, no matter how you became so. What is the kind of superiority after all? Is it not parallel to that which constitutes you superior to the peasant who tills your garden.

Mr. G. McHENRY: No; it is not.

Mr. BURKE: I differ from you in opinion very widely.

Mr. G. McHENRY: And I do from you. I am afraid you are an abolitionist, sir.

Mr. BURKE: This gentleman is at liberty to have his own opinions, and, of course, he will allow me to have mine. I contend that the difference is one of degree only.

Mr. G. McHENRY: I pity you; you do not know better.

Mr. BURKE: I must call upon the Chairman to prevent these unseemly interruptions. The gentleman can speak after I have done. If I have a servant in my house, I find that that servant has a different order of feelings, and is a different kind of being, in some respects, to the members of my own family. Does it follow that I am to make a particular distinction of species, and cut off that poor creature from us simply because she is a grade lower than we are? I for one maintain that there are gradations. There are such things as ethnic realms. For instance, there is a hierarchy of ethnic realms, and the individuals of one realm are higher than the individuals of another. I say that there are gradations in the subdivisions of those realms; and I say further, that there are gradations in the subdivisions of every great nationality. But if I believe that the Negro is by descent of a different origin from the white, that would compel me to believe that one class of the community in a civilised country is of different origin from another. Arguments have been adduced to prove this broad distinction between the Negro and European, as if there were no other people that had distinctions among themselves. I do not for a moment hold that the Negro is equal to the White, no more than the peasant is equal to the gentleman. I do not mean to say, that out of the peasant may not spring a gentleman.

Mr. G. McHENRY: Out of a black man there cannot spring a white man.

Mr. BURKE: Too much stress has been laid on the conventional distinctions of the Negro. Negro Africa is a large ethnic centre, in which there are a great variety of types. We have become familiar with some of the very lowest of those types, and that has tinged the whole range of our intellectual notions with respect to the Negro. There are places in Africa where the difference between the Negro and the European is extremely slight, comparatively speaking, and there are other places where it is extremely great. As to the question of hybridity, it has been denied that a fertile offspring can proceed from the Negro and White man. Those gentlemen who have the

kindness to settle all that assure us that a fertile offspring will proceed from the intermarriage of any one particular type in our own country ; but, if it is meant to be said that you cannot, by any possibility, have a fertile offspring by marrying a Mulatto with a Mulatto, and so on, I can only say that those facts have not yet been laid before the world in a manner that will justify the conclusions that have been drawn from them. Many observers of facts are very poor reasoners ; they draw their deductions from limited areas, forgetting all creation around them, and are frequently satisfied with one explanation, when, perhaps, if they went a little further, they would be at no loss to find another. This is, perhaps, a little of the *argumentum ad hominem*. But I must say that too much is made of this anatomical *finesse*. There is a tendency to make anthropology to consist of little observations that prove nothing. I say that anthropology ought to be studied in its universality, and that laws are not to be laid down by any special men who have gone through a whole lifetime working in a certain groove, and have not, perhaps, ten ideas out of it. It is a question into which everything is to be taken into account, and, above all things, it is a question of physiology, and not of anatomy.

Mr. L. OWEN PIKE: I have listened with great pleasure both to the paper and to the discussion, particularly as there has been less discrepancy of opinion as to facts than generally occurs in these discussions. It has been admitted that the osteological distinctions which have been pointed out do occur, but there has been great difference of opinion as to the mental capacities of the Negro. I think that, from the very unsatisfactory state in which the science of psychology at present is, there is a probability that we might arrive at a more definite conclusion if we paid a little more attention to those psychological laws which are now tolerably well ascertained. In no case do the advocates of the equality of the Negro give us their grounds for holding that opinion. Only one example was mentioned, and that was the example of Toussaint l'Ouverture. Now, I think that, if those psychological laws, which are well ascertained, were applied to different nations, it would be possible to construct a scale, showing how far each race differs from other races. For example, I think it would be possible, by applying the statistical method, to show what were the occupations of the white man. That might certainly be done in all the European countries ; and, from the researches of travellers we might see what are the occupations of black men. We might then apply to these observations the psychological laws of construction, contiguity, and similarity. We might also take the most eminent specimens of each race. We might take Toussaint as the highest specimen of the black race ; he is one not among thousands, but among many millions. We might compare him with those whites that have distinguished themselves in all branches of science, and think that Toussaint—if we take the most favourable accounts of him—displayed the same power of constructive association ; not a very great power of deducting similarities, and about the usual mind of what Mr. Bain calls adhesiveness ; which is, perhaps, nearly the same thing as memory, though not quite. Among the white men we

find innumerable instances where great powers of deducing similarities are displayed, where the powers of construction infinitely surpass those of any Negro man, and where the powers of contiguity, perhaps, are superior, but certainly equal. It has been said that the Negroes have a great power of acquiring languages, and that, according to Bain, is said to be an evidence of the working contiguity, which is, in short, the faculty of memory. Now, if Negroes acquire other languages with as much accuracy as they seem to acquire the English, I do not think it speaks very much for their genius. They seem to be utterly deficient in what is called the articulate ear. It has been said that the civilisations of Egypt and other civilisations have passed over the Negro without effect. The answer to that, I think, has been, that it was only as a slave that the Negro came into contact with civilised nations. Be it so; but slavery, till the Christian era, and for some time after, was almost universal. How is it that other nations, the bulk of which were slaves, have emerged from that state? When we see the son of a Negro slave displaying the genius of a Horace, we may then entertain the question of the equality of the Negro and the White man. It has also been said that woman is as inferior to man as the Negro is to the White man; I do not consider that this is at all a parallel case, for this reason: that the son of the white women may be the greatest of men, whereas we have no instance of the son of any Negro, either man or woman, being a great man at all. Much has been said about species, but I do not think we can arrive at any distinct conclusions as to whether the Negro belongs to the same species as the White man until we know distinctly what species is. The great argument, the proof that distinctions of species naturally exist, is that the offspring of certain so-called species are not prolific, or that the so-called species, when united, have not offspring at all. But it seems to me that there is no broad line of demarcation whatever; because some of the so-called species are, to a certain extent prolific, where is the line to be drawn? If you say certain species have no offspring, we should know what we are talking about; as it is we cannot draw a line whatever. It seems to me you might as well argue that because the French population in France is now stationary, that that is a sign that the French people have ceased to be prolific. We might, therefore, conclude, that the union of the Franks and the Gauls was a union of two different species, and that the test of species is now beginning to show itself; and that, secondly, they are dying out according to the law that no hybrids can perpetuate themselves. It seems to me also, that, in this case, in which the fertility is said not to go beyond the first generation, or, perhaps, the second, you cannot have any proof whatever that that want of fertility results from the fact of their being different species; because there are an immense number of other cases which have to be eliminated; and because, in all probability, in all these cases only a very few individuals of either species have been tried. I think, therefore, that in the present state of science, we cannot lay down any law whatever about species. As I before suggested, something might be done by working upon the laws of association, the

principles of which, I think, date from the time of Aristotle, and have stood their ground very well until the present day. I think, also, that the science of craniology—if that is a separate science by itself—should walk side by side with zoology and with osteology, and, in fact, with physiology. Cerebral physiology is at the present in so uncertain a state that it is impossible to decide perfectly that the brain is the seat of the mind. It has been stated by Mr. Bain—and he has supported his statements by very ingenious arguments—that the brain is not the *sanctum sanctorum* in which all our thoughts are locked up, and from which new thoughts are evolved. He holds, on the contrary, that the whole of the nervous system, in fact the whole of the system altogether is what constitutes the human mind. Till that theory is disproved, it certainly is incumbent upon us, as an anthropological society, to ascertain how far there is a correlation between the skull, the brain, and other regions of the body; and to ascertain also, if possible, what that so-called temperament may be which enables one man, who appears any larger than another, to do frequently more while he lives, and to do it frequently better.

Mr. HUGH J. C. BEAVAN, M.A.* : I listened with a great deal of interest to the very valuable paper read by my friend, Dr. Hunt, at our meeting, and I also carefully followed the discussion which ensued. Now I am always sorry to find one side of a question alone argued, for it tends neither to instruction nor real utility; but I am bound to say that I have not noticed that any arguments were brought forward tending to disprove the theories advanced by Dr. Hunt. The truth, or an approximation to it, can only be obtained by discussions *pro* and *con.*; and, although it seems that, in the present state of our knowledge, nothing very definite can be determined on the subject, I consider that Dr. Hunt's side of the question has been fairly proved, so far as we can go in our present ideas concerning Anthropology. The theory of two different races is one which caused some attention to be paid to it many years ago, and several well-known masters of ethnology have subscribed to it, with certain reservation, as Dr. Hunt told us. We must look upon it, however, as a purely scientific question, without any touch of sentiment. To say that a Negro is a man and a brother partakes largely of sentiment, and it may be all very well in its place; but we must forget such ideas in an anthropological debate. To a certain extent, the questions we have been discussing resolve themselves into a matter of feeling. I do not say but that they are, and must be considered in a scientific manner, but feeling, and even politics, will unconsciously force themselves upon our minds in speaking of such an important question. As Dr. Hunt said, those who uphold his theory will be charged with encouraging slavery. Perhaps it may be so—I would rather that took place than that we should resign our opinion for the mere sake of agreeing with the abolitionist party, or of appearing to be philanthropic. Scientific truth is to be upheld in spite of all sentiment or party feeling. It seemed to me

* It was Mr. Beavan's intention to have delivered these remarks; but, in consequence of the lateness of the hour, it was only possible to hand them to the reporter.

that, at the last and present meetings, two or three gentlemen spoke as if they thought Dr. Hunt and Mr. Reade wished to make out the Negroes to be worse than they really are; as if they had some curious, unaccountable, and mysterious desire to asperse the character of these ill-used individuals. Now that cannot possibly be the case, seeing we have reliable data concerning the Negro character with which to work, and those authorities can be referred to by all. Those who have experience in the matter state that the Negro character is sensual, tyrannical, sullen, indolent, etc. That their life is a *purely* sensual one, and that it is no use trying to obtain an insight into the mind of the Negro, because he has very little of it, and it is never worth the trouble. Whether character has much to do with races I leave to others to determine; at all events, if it has, we cannot quite consider the Negro to have the same intellect and moral nature as ourselves. I quite agree with our President as to the *horrors* of the slave trade, and, like him, protest against being thought to favour it. Discussing the faults of the natural Negro, however, is far from advocating slavery. But it is curious how our opinions alter. I happened to meet a day or two ago with a pamphlet, dated 1744, and entitled *The African Trade in Negroes, the Great Pillar and Support of the British Plantation Trade in America*. It purports to be written by a merchant to a member of the English ministry, but names are not mentioned. Among other things, the author says, "Are we not indebted to those valuable people, the Africans, for our sugars, tobaccos, rice, rum, and all other plantation produce? And the greater the number of Negroes imported into our colonies from Africa will not the exportation of British manufactures among the Africans be in proportion, they (the Negroes) being paid for in such commodities alone? and as Negro labour hitherto has, so that only can support our British Colonies, as it has done those of other nations. It is that also will keep them in a due subserviency to the interest of their mother country, for while our plantations depend only on planting by Negroes, and that of such produce as interferes only with the interests of our rivals, the French and Dutch (who at that time dealt largely in Negroes), not of their mother country, our colonies can never prove injurious to British manufactures, never become independent of these kingdoms, but remain a perpetual support to our European interest, by preserving to us a superiority of trade and naval power." Again, after observing that it had once been proposed to abolish the slave trade by Act of Parliament, our author continues: "But the consequences of such reflections are of so melancholy a nature to every man who has the least regard to the interest of his prince and his country, that we will drop these gloomy apprehensions of abolition, and rather please ourselves with the agreeable idea of seeing such a glorious spirit appear in a British parliament for the support of this most important commerce and navigation, as will transmit our African and plantation trades with security to latest posterity." These ideas are rather different to those propounded in the present day, and circumstances have slightly altered the "independence" of some of our colonies; but although not quite explanatory of our present subject, I think the

extract interesting, as giving the trader's idea on the subject. In the article "Negro," in the third edition of the *Encyclopædia Britannica*, date 1797, which article, strangely enough, is not to be found in the last edition, we read: "Vices the most notorious seem to be the portion of this unhappy race,—idleness, treachery, revenge, cruelty, impudence, stealing, lying, profanity, debauchery, and intemperance are said to have extinguished the principles of natural law, and to have silenced the reproofs of conscience. They are strangers to every sentiment of compassion, and are an awful example of the corruption of man when left to himself." Concerning the island of Santo Domingo, where the great insurrection is now raging, showing the bloodthirstiness of the Negro in a rather powerful light, Mr. Evarist, a Wesleyan missionary, wrote in 1821: "Every door is shut against us, and we are deprived in every possible way of liberty to act according to the Gospel, our own conscience, or the light of truth. This life is a burden to me, on account of the fearful and horrible things that I see." In an official letter from the same place, date 1823, we also read: "The unsophisticated denizen of the African wilds (and we know what *he* is like) is ennobled by comparison with the wretched degradation of his Haytian brethren, not merely relapsing into barbarism, but sinking fast under an odious combination of the darkness, ferocity, vices, and superstitions of all colours and all nations, unredeemed by the virtues of any." (Hampden *On Clarkson's Letter*, 1824.) I have not made these observations with any view of defaming the character of the Negro; but Dr. Hunt's paper has led me to examine into the subject, and I have satisfied myself on the points which he wishes to prove. Nothing decided can, of course, be discovered on such a point. It will take much time and both long and patient inquiry to do that; but, as I have no doubt Dr. Hunt's paper will be discussed and opposed by many societies, both at home and abroad, I hope we shall be able to obtain reports of their meetings, and be able also ourselves to add, in some slight degree, to the study of Anthropology. I may also express a hope, that the discussions which may hereafter take place on important papers may be to the point, and not ramble over such a wide space of ground as philanthropy, Darwinian, and other theories, instead of answering or upholding the stated views expressed by the author of a paper.

Dr. HUNT. I will not detain you long, but I think that the time has now come when I had better reply to the remarks that have been made. And first I would say that I did not expect that the harmony we had at the last meeting was likely to continue to the end of the debate. The speakers then, without one exception, supported the views I advocated. To-night I have listened with very great interest, in the expectation that I should hear something on the other side of the question. I am sorry, however, that the discussion this evening has not been so much to the point as it was on the last occasion. Indeed, many of the speeches we have heard this evening have wandered very far from the paper which I read. Three of the principal speakers, indeed, do not appear to have heard a word of my paper, and apparently have not even read the conclusions to which I

have arrived; therefore we cannot wonder that they have made speeches that are entirely foreign to the object of my paper and even to its title. I will, however, go over a few remarks that were made at the last meeting. And, first, with regard to the entozoa and other parasites being distinct. As Mr. Blake has said, all our present knowledge is given in a volume, Waitz's *Anthropology*, published by the Society. All observers have noticed that they are distinct, but whether that amounts to a difference of species, is a question to which, in the present state of our information, no answer can be given. Mr. Pusey reminds us that the Negro, when in contact with the European, has generally been in a state of slavery. That of itself suggests the inquiry, whether the whole course of history, for the last five thousand years, has been one gigantic wrong, or whether there has not been more justice in history than we may imagine; whether, really, it is not natural that he should be in subjection to those who are born wiser. I most fully admit the fact that the Negroes have always been slaves when in connection with Europeans, and I cannot admit that history has been one series of wrongs. Mr. Pusey tells us that the Negro can be made a skilled artizan. I doubt this very much of the pure Congo Negro, from the thickness of the skin of the fingers, and the well-known fact that all the skilled intelligent artisans in America are Mulattoes. I will not touch upon that, however, as it will come into another discussion, when we will go into the question of Mulattoes, and when I shall be able to show that the cases produced by the Abbé Gregoire were Mulattoes. With regard to hybridity, I am sorry that those gentlemen who have spoken on the subject to-night were not here on the last occasion to hear Dr. Seemann's observations on the dying out of mixed races. Mr. Reade very properly directed our attention to the fact that Africa is not exclusively inhabited by Negroes. We know perfectly well that it is not so. If we go to the extreme south of Africa we get a perfectly distinct type of man, represented by the Hottentot. The Negro gradually improves till we get about ten degrees above the equator, until we get to the Foulahs and Mandingoes, which are perhaps the highest type of that race. It has been said, and not without truth, that the intellect of all the people below the tenth degree is as dark as their skin. Now, we do not know enough of Central Africa to say much about it. The Nubians, the Ethiopians in the north of Africa, are all distinct from the typical Negro. In East Africa there are some pure Negroes so much lower than those in the West, that they are refused by the slavers. Prichard made a very good generalisation when he said that the darker the colour, and the nearer the approach to the typical Negro of the West Coast, the more brutal and un-intellectual they are. That I believe is one of the best generalisations that Prichard ever made. It is in perfect accordance with what we might expect from their physical organisation, and is, I believe, entirely borne out by all the recent researches in ethnology. Then we have been told that the shape of the brain could be altered, but I have really not heard a single anatomical or physiological fact brought forward in the paper seriously criticised. We know of no facts to

support a theory that any agencies can alter the shape of the brain. I recently had a chance of seeing a native of Hausa. I was told I should find European features, and I went expecting to do so, but, on the contrary, I found that in all the great characters—the projection of the teeth, the colour of the hair, and though the proportions of the limbs were not so bad as in some other African tribes, yet in all these particulars there was the Negro race. We hear anatomy and physiology spoken of as if they were separate—as if they had not always been combined. Now I, for one, have not based my conclusions solely on anatomical grounds. I say that in America years of observation have shown us that, up to about twelve years of age, the Negro children are very intelligent, but that you can make no progress after the second generation; they then arrive at about the highest point you can ever bring them to. It seems to me a much more philosophic view to suppose that there is a certain amount of permanence of type in the various divisions of the human family, to accept the teaching of historical facts, and to believe that the various races which are found are not descended from one another. I shall not go into the principles of classification, because that comes into another question—how many races are there in Africa. I fully admit that there are a large number of races in Africa, but I take the Negro as represented by the Negro of the Congo. I don't consider the classification of African Negroes at all satisfactory. There is no doubt that a great many of those European-featured men that have been seen, have European, or rather Arabic, blood in their veins. With respect to one of Mr. Reade's remarks, I am thankful he was not up at Newcastle when I brought forward some simple facts in anatomy and physiology. I was then met with a considerable amount of hisses, I assure you; but when my friend said that the Negroes should be flogged occasionally, that corporal punishment was necessary, and that taking them out of Africa to America was like taking them from hell to paradise, I thought that if he had been at the British Association, I would not have answered for his life. (Laughter.) I must leave his opinions without any criticism, except that I think we shall not be much inclined to doubt their truth. Dr. Murie, who has travelled very largely in Africa, and is a very good observer, agrees with the opinions I have brought forward. He says, "Have we any right, however, to enslave our brother?" Now, of course, we do not say we have any right to enslave our brother; but the question still remains, "Is the Negro our brother?" I did not say that he was, and it is rather begging the question to assume that he is. The six deductions I brought forward are quite independent of one another. The proposition that the Negro is always happiest in subordination to the European, does not necessarily include slavery, as we understand it. Then Mr. Reddie made some remarks to the effect that the Negroes are supposed to be the refuse of the population. Mr. Reade, I believe, agrees with it; but I must say I do not. I believe that the Negroes represent a race, and not a class; and though there are many Negroes who pass from one tribe to another, yet slavery is an institution that belongs to Africa. Some races are selected for

one thing, and some for another; the Eboes, for, instance, are used for domestic slaves. Mr. Louis Fraser, who I am sorry has not spoken to-night, went several hundred miles up the Niger with the expedition, and seems to have received impressions with the most unbiassed mind—he quite agreed with what I said as to the European features being due to mixed blood. I agree with him, also, that black is a rare colour, and that it was not a character of consequence. There is a popular piece of poetry about “fleecy locks and black complexion.” No doubt skins do differ, especially in their odour; for I believe all abolitionists know too well to their cost the disgusting odour of the Negro, which prevents their associating with them. With respect to the definition of the word “species,” I must leave that to another occasion. I may explain that the present paper was written subsequent to one on classification, which I read at the British Association. Some of these matters, however, will be brought forward again. I have not said that the Negro was a distinct species; I have simply said that, if we are consistent, and carry out recognised principles of zoological classification, he ought to be. That, of course, brings up the whole question “What is species?” and that question is now *sub judice*. And now a few words as to the discussion that has taken place to night. I have nothing to remark as to the first two speeches. Mr. Dingle said that there was a great responsibility in cutting off a large portion of men from the benefits of civilisation. I am not aware that anything I have brought forward has done so. I do not admit the fact. He believes in the unlimited fertility of the intermixture of all races of man. I only hope he will examine the evidence that has been brought forward on that subject by the Secretary of our sister society. If he will examine the book of M. Broca, *Sur l'Hybridité Humaine*, and the work written by the celebrated anthropologist, Dr. Nott, I think he will see that Prichard's views on the subject are no longer held by men of science or by men whose opinions are of any value. Dr. Seemann, will, I think, give him data that will show him that he must not quote Prichard now on the subject. The difficulty of obtaining pure crania is immense. Dr. Nott wrote to Professor Wilson to say that he had the greatest difficulty in procuring him a really genuine Negro skull. Then I am told that I did not give an impartial and fair account of the Negro. I must ask you to judge when you read my paper whether I have done so or not. I have certainly gone over a large amount of evidence, and have been in personal communication with all the Negroes that I could meet. I can appeal to my friend Mr. Louis Fraser, to whom I sent a copy of my paper, and who, with Mr. Ashmall, went through it. They wrote to me, expressing their cordial agreement with every particular with a few exceptions, which they indicated in the margin. When therefore, I am told that I have not given an impartial account, I must ask you to bear in mind what has been said about it by men like Mr. Fraser the naturalist, who accompanied the Niger expedition, and Mr. Ashmall, a Liverpool merchant, who has resided

eighteen years on the continent, and who is so well able to pronounce an opinion on the subject. Mr. Dingle says that the Negro advances in civilisation in the Confederate States of America. I have admitted it. I have admitted that they have made more progress there than in any other part of the world. I admit that up to the second generation the Negro does improve, and I say that we have to thank the Confederate States for this improvement, which shows the enormous benefit they have received from being taken out of Africa. And with respect to my slight of philanthropists, really those who slight philanthropy are those who do not like to see the Negro in that position in which he is most benefited. I asserted that he was best off in his natural subordination, and that while I wished to improve him the abolitionists wished to keep him in Africa. And with regard to exploded views, really, I must put it to gentlemen who are anthropologists to say which are the exploded theories. I have no fear of the result. With respect to Mr. Bendyshe's interesting remarks, he has gone over a wide field, and he did not hear the whole of my paper. If he had, I think he would have reserved his excellent essay till another occasion. He also touched on the improvement observable in the race of America. But with regard to the Negroes approaching the Indian type that is entirely imagination, and utterly unsupported by facts. Then he asked how we should behave to any higher specimen of anthropoid ape which might be discovered, and I must confess that is a subject I have not thought of. I shall be prepared to do so when we discover such a specimen. He said he would not dispute that the Negro was nearer to the ape than the European. That is my proposition, and I am much obliged to him for his support. Then, as to the best way of civilising the Africans—that is a large question, and I hope we may have the advantage of discussing it a future day. Mr. Reade thinks there will be found an anthropoid species between the man and the ape in central Africa. I have nothing to reply to that, although it is a very interesting field of speculation. Mr. Pliny Miles made some remarks, but he had not heard my paper, and I don't know that it is any use to reply to him. He spoke of the Nubians as Negroes.

Mr. P. MILES: No; the Numidians.

Dr. HUNT: The Numidians were certainly not a Negro nation; and he also spoke of the United States of America; I suppose he meant to have said the Federal States. And then with regard to the name of the celebrated Negro engineer, which he forgot—unfortunately it is of very little use for scientific purposes if we forget these data. I think, also, that if Mr. Miles had heard the paper he would have thought it not beneath him to adopt towards it a tone of serious argument instead of flippant banter. With respect to anatomy not being supported by physiology, and the former not being worth a snap of the fingers in a question of this kind, I beg to say that I have not ignored physiology. Mr. Burke, however, did not hear the paper, and therefore necessarily has not understood that portion of it. With respect to antipathy of race I was sorry that my friend, Mr. Blake, brought that forward. I have no antipathy of

race, and I should not encourage it. Mr. Burke tells us that a nobleman will not give his daughter to any one lower in the social grade than herself; but I beg to remind that gentleman that a nobleman's daughter will sometimes run away with a groom—showing that there is no antipathy of race. And now, in conclusion, I will simply read you the propositions I made in my paper, and then you will see exactly what we have gained by what has taken place. The first proposition was this: "That there is as good reason for classifying the Negro as a distinct species from the European as there is for making the ass a distinct species from the zebra; and, if we take intelligence into consideration in classification, there was a far greater difference between the Negro and Anglo-Saxon than between the gorilla and chimpanzee." No speaker has attempted to deny that proposition. Indeed, it relates more nearly to the question of classification than to the Negro. The second proposition was, "That the analogies are far more numerous between the Negro and apes than between the European and apes." I think that this has been universally admitted. I have not heard anything in answer to it; so that there are two propositions gained. Then we come to the third: "That the Negro is inferior intellectually to the European." That has, I think, been carried with scarcely a dissentient voice. The fourth proposition, "That the Negro is more humanised when in subordination to Europeans than under any other circumstances." Now I really was afraid that that would not be carried; at any rate, I thought it would lead to a great deal of discussion; but I have to thank my friend Mr. Dingle and others for their support of it.

Mr. DINGLE: They are free in Sierra Leone.

Dr. HUNT: I say that in Sierra Leone the pure Negro is very much inferior to what he is in the Confederate States of America. In Sierra Leone he will not work, and is not humanised.

Mr. P. MILES: Were we not charged to avoid that as a political subject?

Dr. HUNT: The gentleman has admitted all I want, and I am much obliged to him. The fifth proposition is "That the Negro race can only be humanised and civilised by Europeans." That has not been established, but as it does not matter whether the Negro is civilised by Europeans or from Asia, it is a proposition which I need not insist upon, although I had my reasons for putting it in the paper. The sixth is "that European civilisation is not suited to the requirements and character of the Negro." That I think particularly applicable to our English institutions, where we see the melancholy exhibition in our colonies on the West Coast. Trial by jury there is a perfect farce, and the sooner that and some other things are done away with the better. We have now completed this discussion. There is no doubt a great deal more to be said on everything that has been brought forward, and all I can say, Mr. Chairman, is that I have simply been anxious that the truth should be elicited. I have also to thank those gentlemen who so kindly came forward at the last meeting and supported my conclusions with the weight of their large experience, and the testimony of their travels.

Mr. BURKE: Allow me to put a question. What is your particular

ethnic reason for singling out the Negro as the subject of this particular discussion, rather than many other races which are some of them inferior and some superior to the Negro?

Dr. HUNT: I shall have much pleasure in answering that question. I stated in my paper that there were about six races below the Negro, and six above him, taking the capacity of the cranium in the Negro as the test. I selected the Negro, because I considered the race to be well defined—taking the Congo Negro as my type; and also because I knew of no subject so involved in mystery, and on which there exists such an enormous amount of misconception as about the African Negro. I thought, therefore, that if I could do away with some of this misconception, and also with some of the cant which has been introduced, not only into public assemblies, but also into scientific meetings, I should be doing a duty to science.

Mr. DINGLE: I submit that that word ought not to have been used.

Dr. HUNT: I should be sorry to say anything that would give offence, and, therefore, I withdraw the word "cant," and say that the prevailing erroneous idea respecting the Negro is due to ignorance or want of accurate information on the subject. I thank you for the kind attention with which you have listened to the paper, and I can only hope that my humble effort may be the means of doing some good, and putting the real character of the Negro in its proper light, which will be for his own benefit and for the benefit of society at large.

Mr. MILES: What particular scientific bearing on the question, has the opinion of the individual Dr. Hunt calls an abolitionist on the odour of the Negro's skin?

Mr. G. McHENRY: Before that question is answered, I want to say something for the historical information of the gentleman who puts it, and who, I believe, is a native of Massachusetts. Massachusetts has never passed a law abolishing the slave trade, and it is pure hypocrisy to mislead John Bull on the subject. Moreover, every Southern State has laws against the African slave trade, and there is not one Northern State that has passed such a law.

Dr. HUNT: I am sorry that Mr. McHenry, who is well qualified to speak on this subject, did not address us before, for he is well known and respected for the great attention he has paid to the subject of the Negro. I believe the remarks he has made are entirely in accordance with the facts of the case.

Mr. PLINY MILES: So far as regards myself they are wrong. I am not a native of Massachusetts, and I am not a Yankee.

The Chairman then declared the discussion ended, and the meeting then adjourned.

DECEMBER 15, 1863.

JAMES HUNT, ESQ., PRESIDENT, IN THE CHAIR.

The minutes of the previous meeting were read and confirmed. The following new Fellows were elected: John Lister, Esq., Bayswater; Francis Drake, Esq., Leicester; J. W. Walton, Esq., 21B, Savile Row.

The thanks of the Society were voted to the following gentlemen for donations to the Library and Museum:—Proceedings of the Soc. Antiquaries, London, by the Society; Flint Arrow-heads, by Dr. Royston Fairbank; McHenry's Cotton trade, by the author; Proceedings of the Geologists Association, by the Society; Memoire de la Chevelure, etc., by Dr. Pruner-Bey; Transactions of the Geological Society of Glasgow, by the Society; Sir C. Nicholson on the Australian Colonies, by Professor Tennant; Memoires de la Société d'Anthropologie, by the Society; Owen on the Aye-aye, by C. Carter Blake; one hundred and nineteen works on Anthropology, by the President of the Society, Dr. James Hunt.

The following papers were then read:

On Crystal Quartz Cutting Instruments of the Ancient Inhabitants of Chanduy (Near Guayaquil in South America). Found by Mr. Spruce. By CLEMENTS R. MARKHAM, Esq., Hon. Sec. Royal Geographical Society.

The three ancient cutting instruments of the former inhabitants of Chanduy, at the mouth of the river Guayaquil in South America, (now exhibited) are chips of transparent quartz crystal. One of them is broken.

These crystal lance heads and knives are found all over the country, from the point of Santa Elena to the town of Guayaquil; but it is near the latter place that they occur in greatest abundance, chiefly on certain low mounds, laid bare by the winter rains. A French apothecary, named Reyre, took scores of them to Paris a few years ago.

The present specimens were found by Mr. Spruce near the little town of Chanduy, on the sea shore, in *middings*, or refuse heaps similar to those in Denmark. These *middings* consist chiefly of fragments of pottery, and of sea shells of four species, an oyster, a mussel, a cockle, and a large heavy bivalve, beautifully fluted, and with a remarkably thick bevelled edge, called by the inhabitants *pié de burro*. The latter shell is not now found on the coast near Chanduy.

The formation of the land round Chanduy, is precisely the same as that of the coast of Peru—land recently upraised from the sea—the uppermost strata being shell marl, lower down calcareous grit, but all containing only recent shells.

The point to which I would wish to draw attention, in regard to these quartz crystal cutting instruments, is that the people of this country, when the Spaniards first discovered it, were using bronze

cutting instruments. That mentioned by Humboldt as having been found near Cuzco, is composed of metal, containing 0·94 of copper, and 0·06 of tin; and, in describing it, he remarks that everywhere in the old continent, also, at the beginning of the civilisation of nations, the use of copper mixed with tin (*χαλκος*) prevailed over that of iron. The old inhabitants of South America, at the time of the Spanish conquest, were, therefore, passing through their age of bronze, and had not yet entered upon their age of iron. In the present state of our information, it would be unprofitable to discuss their origin; but they may fairly be considered to have been indigenous to the American continent, to be, by many ages, a younger race than any of those in the old world, and to have been, by slow unsteady steps, working their way towards a higher civilisation when the Spanish invasion suddenly destroyed their separate existence.

Three centuries ago, then, they were in a stage of development analogous to that through which the old world races had passed many centuries earlier, and which is now called the *bronze age*. But these quartz crystals seem to prove that at some much earlier period, when the refuse heaps of Chanduy were made, there had been a *stone age* preceding the *bronze age* of the South Americans, just in the same order as these successive epochs are believed to have occurred in the history of the European races; and it is from this circumstance that, I believe, any interest that may be attached to these relics, will arise.

It is worth while to mention that the district where these quartz crystal instruments and refuse heaps are met with, including the point of Santa Elena, is famous for having been the locality where huge fossil bones have been found from time immemorial. Among the ancient inhabitants, these bones gave rise to a tradition, that a monstrous race of giants once landed at the point of Santa Elena, and were afterwards destroyed by God for their wicked enormities. In the middle of the sixteenth century, when the adventurous young traveller and chronicler Pedro Cieza de Leon visited this part of the country, he heard the tradition of the giants from the mouth of Indians. He adds, in order to prove the truth of the story, that he knew Spaniards who had seen part of a tooth weighing half a butcher's pound, and a shin bone of marvellous size, both found near the Point of Santa Elena. Mr. Spruce tells me that the bones of large mammals are still found near Chanduy, chiefly along the coast, where portions of the cliffs are continually falling in; and that a French naturalist, named Berthier, carried off some large teeth a few years ago. There is a deposit of similar bones on the banks of the Chambo, a league from Kiobamba, in the Quitenian Andes, where an English naturalist, named Fraser, made excavations in 1858, which were continued by Dr. Garcia Moreno, the President of the Republic of Ecuador; and amongst other fossils a *scapula*, quite entire and of gigantic size, was dug up. These bones of extinct mammals are probably of the same genera as those found in the analogous diluvial deposits at Tarija in Bolivia, which have been described by Castlenau and others, namely, of mastodons, glyptodons, megatheria, &c.

The fossils of Point Santa Elena have not, to my knowledge, been scientifically reported upon; but it will be very interesting if, as is probable, evidence should be hereafter adduced to show that these gigantic mammals existed on the recently upraised beaches of the west coast of South America, contemporaneously with the people who made the refuse heaps and quartz crystal knives of Chanduy. Such a discovery would throw back the *stone age* of this people to a far more distant period than the other evidence before us would seem to indicate.

I may remark, in passing, that an author named Ranking, who wrote in 1827, founded his fantastic theory that Peru and Mexico were conquered by Mongols accompanied by elephants, chiefly on the fossil bones and tales of giants in the neighbourhood of Point Santa Elena.

That in the earliest ages of man's history all advances in the useful arts were extremely slow and gradual; that incredibly long intervals of time elapsed before even a slight improvement was made in the form of an arrow head, is, I believe, a generally received opinion. It is not until civilisation has reached an advanced stage, that discoveries begin to follow each other rapidly; while, in man's more primitive state, he remains almost in the same condition for many centuries, and advance is slow and almost imperceptible. Archbishop Whately, indeed, goes so far as to declare that the evident inability of savage nations to make any progress in the arts, is a perfectly satisfactory proof that man would never have become civilised but for a special revelation.

There is nothing improbable, therefore, in the supposition that the descendants of the people who sat on the refuse heaps and used quartz crystal knives while megatheria and mastodon still wandered over the South American continent, had only, after the lapse of countless centuries, reached a civilisation which is represented by bronze chisels, grotesque pottery, and rude gold and silver ornaments, when the Spaniards first landed on their shores.

That the skill and taste of these people, the inhabitants of the coast near Guayaquil and of the neighbouring islands of Puna and Muerto, was far from contemptible at the latter date, is proved by a very interesting discovery made on the latter island about three years ago, an account of which has been sent me by Mr. Spruce. The remains which were then found would certainly indicate no mean degree of civilisation, and I propose to conclude this paper with a very brief account of one or two of them. It will show to what point the descendants of the chippers of quartz crystal had attained, when they were overwhelmed by the Spanish conquest. One of the objects was a small statue, six or eight inches high, of pure gold, and very creditably sculptured. But by far the most curious was an ornament, consisting of several thin plates, almost like a lady's muslin collar in size and shape, and covered with figures. One of these ornaments has perhaps a hundred figures of pelicans, the sacred bird of these people according to the local tradition. Every figure represents the bird in a different attitude, and, as they have been stamped, not engraved, a separate die must have been used for each figure. They are all of gold, but some of them with a considerable alloy of silver.

These interesting relics were found by the lighthouse man on the island of Muerto, in an ancient burial place, and sold by him to Mr. Reiss, the Prussian Consul at Guayaquil, who is since dead.

The PRESIDENT said, that these crystal quartz instruments were of considerable interest, and he believed that similar ones had never before been described. It was most important to endeavour to correlate these instruments with those used in other countries. He thought that they represented some of the flint implements found in the Old World, and if the substance of which they were composed was taken into consideration, they would bear a great analogy with the obsidian knives of Mexico. He agreed with the author of the paper, that the finding of these implements in America did not in any way favour the relationship of the races of the Old and New World. He was, however, inclined to believe that the identity in the shape of these implements showed a connection of ideas between the Old and New World. When Cortez visited America the inhabitants were, no doubt, using bronze implements; but had they arrived at this civilised act by their own innate development? Was it not more likely to suppose that they held communication with Europeans during the bronze age, but had no communication since? As to Dr. Whately's theory, that it required a special revelation for science, he was ready to admit that some savage races were quite incapable of dragging themselves out of their barbarous condition, or of inventing any of the arts of civilised life: but he contended that there are races who *are* capable of inventing a civilisation, and who are able to give "special revelations" to some of the inferior races.

Mr. S. E. B. BOUVERIE-PUSEY agreed with the statement of Archbishop Whately, that there was no case on record of any race ever having civilised themselves. Had we any right to suppose there ever existed a race who were capable of doing so? He saw that it was quite impossible for any of the existing savage races to become civilised, except by continued contact with the superior races.

Dr. BERTHOLD SEEMANN would prefer not to introduce Archbishop Whately's argument. He thought that the broken pottery alluded to indicated a state of civilisation far above the state of the lowest savage. The art of preparing food so as to be cooked was one which required some time for its development, and he was not surprised that the aborigines of Ecuador had the same detestation of "cold dinners," which was possessed by higher races. Even the most simple culinary operation, like the preparation of the Australian "damper," required much care throughout the process, and such comparatively complicated operations as the acts of steaming food, or preparing soup, necessitated the attainment of an average degree of civilisation. He alluded to the descriptions by Mr. Bollaert of pottery from Tarapacá, which resembled the pottery from Ecuador.

Mr. JAMES REDDIE remarked, that the object in question might possibly have been used for sacrifices, or for some other religious purpose. The act of first preparing the iron or bronze must have required a vast interval of time before it could have been successfully brought into operation.

Mr. G. E. ROBERTS stated that there was no historical or geological evidence of the contemporaneity of man with *Megatherium* and *Megalonix* in South America. The evidence on that point appeared to him to be very weak.

Mr. CARTER BLAKE called attention to the tradition of the existence of various mythological beings, the giants of Ecuador and of Bolivia, as *e.g.* at Tarija. The tradition of the *cayporè* of Brazil might possibly indicate a dim remembrance of the *Protopithecus* of the Postpliocene. Careful ascertainment of the past history of individual tribes was a desideratum. At Chiriquí the "stone age" had possibly passed through several stages of development.

Sir CHARLES NICHOLSON, V.P., remarked, that the existence of the tradition *per se* really went for nothing, until we had more determinate evidence. He described the shell mounds of the Malays at length, of which the historical age was uncertain.

Notes upon the Discovery of Mammalian Bones Cut and Sawed by Impurements of Flint at Audley End (Essex). By GEO. E. ROBERTS, Esq., F.A.S.L.

In the course of railway works between Audley End and Saffron Walden, it became necessary to divert the course of the River Cam into a part of the meadow land bounding the stream, which was traditionally known as "the old river bed." A cutting about 20 feet deep through this, necessitated for the foundation of a wide and large culvert, to give passage to the river through the railway embankment, disclosed the following section:—

Section of the Ground at the River Cam.

Soil; 1·0 deep.

Clay; 3·0 deep.

Peat; 12·0 deep.

* * * * * Bones.

Gravel.

Near the bottom of this "peat," and at a depth from the surface of 16 feet, an astonishing quantity of mammalian bones were found. Mr. Hanson, the contractor of the line, informed me that, out of the excavation—an area of not more than 20 feet by 60—two cart-loads of "large bones" were taken away, and sold, to be converted into bone manure. I am exceedingly sorry that earlier information of this discovery did not reach me, and that no competent person made an examination of these bones before they were thus turned to a practical agricultural account. My friend, Mr. Middleton, visiting the site of the discovery shortly afterwards, was struck with the remarkable character of some bones of *Bos* shown to him, and, with praiseworthy zeal, collected a considerable number from the heaps of peat lying on the banks of the excavated channel. The bones to which I have specially to direct your attention were among those collected by him, for though I have since visited the spot, I was able to do little beyond a verification of the section, and the collection of a few fragments of the bones of *Bos longifrons*.

The peat is, more properly, a blackish clay, with numerous fragments of wood, and a few logs of considerable size bedded in it. It is everywhere full of fluviatile shells of species common to the district, and contains many naturally-formed chips and flakes of flint, and a few rolled pebbles.

Evidently the deposit, with its organic contents, is one which has accumulated in the river-bed, both by ordinary current action, and during flood-time. Neither do I think it can be of any antiquity, beyond from two to three thousand years.

The bones which bear the artificially-made markings are the lower jaws of a small ox, probably *Bos longifrons*, though I am not aware of any remains of this well-known species having been found so small in size. From examination of the skull, it would appear also that this individual was hornless. The markings upon the lower jaw are of two kinds—broad sawn cuts, extending in two series of connected markings, from the upper end of the coronoid process to the angle of the jaw, and in one well-marked example upon the opposite side of the bone, near the broad outer end of the condyle; and, upon the other jaw, one deep cut, having clean edges, the result of the removal of a long and thin slice of bone by two cuts, just below the condyle. Another portion of bone, part of the shaft of a tibia (?) also exhibits cuts, and, as suggested to me by Dr. Falconer, bears evidence of having been split by the introduction of a chisel-shaped tool, it being impressed with such a marking as would be made by an instrument of this kind driven wedgewise into the bone. Upon the broad end of a rib (also of *Bos*) a sawn cut also appears. The whole of these cuts are undoubtedly as old as the bones themselves, the surface of the depressions caused by the removal of the pieces of bone being coloured of a brown tint corresponding with the colour of the bone. When these bones reached me they were covered with the peaty clay, in removing which, a process done very carefully by myself, the cuts became exposed. Dr. Falconer examined the whole of the bones before they were washed, and first detected the two.

parallel lines of broad cuts upon the one jaw while in their uncleaned condition. One of the jaws has been extensively gnawed by small carnivores, the inferior outline being broken, and the sides of the fracture scored with teeth-markings.

A single tooth of badger(?) was found at the same level in the cutting. I regret that my search among the thousands of flint-flakes contained in the deposit for any which could be considered as artificially formed was unsuccessful, not a single one occurring which could be referred to human handicraft. My companion, Mr. Middleton, also searched with no better result.

A remarkably fine horn of the great elk, *Cervus Megaceros*, was also found in association with these bones; I believe this was saved, and is now owned by a Mr. Woods, a farmer near Saffron Walden. The basis of my opinion, that the cuts and sawings upon the bones were produced by flint implements, is their dissimilarity from markings which would be made by iron or bronze weapons upon such a material. I am supported in my belief that these incised markings and scrapings were made by an edge of flint, by Mr. Christy, who has studied these bones long and carefully. He detects in the delicate ribs left upon the surface of the scoring by a flint edge the peculiar curve in the direction of the rib which corresponds with the curved outline of the edge, and which he has found existing in all cuts and sawings made upon bone by implements of flint.

After the usual vote of thanks, Mr. ROBERTS called attention to the state of the museum at Saffron Walden, which contained many valuable remains from the collection of the late Mr. Wombwell, who was a native of that town.

Mr. HUME GREENFIELD pointed out the difficulty of assigning any definite age to the remains in question, as the geological evidence was indeterminate and vague. The presence of *Cervus megaceros*, however, appeared to indicate a higher antiquity than could be inferred from the mere stratigraphical evidence.

Mr. CARTER BLAKE commented on the interesting fact that we had evidence of the existence of a hornless breed of oxen at a period of time historically distant, though geologically recent. He congratulated the scientific world that Dr. Falconer had taken up this most interesting subject, which in such hands would be productive of results of the highest value to English Anthropology.

Sir CHARLES NICHOLSON inquired whether the differentiative points between *Bos longifrons* and *Bos primigenius* and *giganteus* were distinctly made out so far as regards the dental evidence.

Mr. CARTER BLAKE replied that the difference in the molar teeth could, he thought, be detected between *B. longifrons* and *primigenius*. The late Mr. Turner had contributed valuable memoirs to the Zoological Society on the distinction between the teeth in the various genera of ruminants. He (Mr. B.) had been for many years accumulating facts on this subject, which had an important, although indirect, bearing on Anthropology.

On some Arrow-heads and other implements of Quartz and Flint from the Bin of Cullen (Elginshire). Extracted from letters received from Alexander Bryson, Esq., F.R.S.E., F.G.S., &c. By GEORGE ROBERTS, F.A.S.L.

THE immediate neighbourhood of the Bin of Cullen, more especially near to Cullen House, has long been noted for its antiquarian associations. Thereabouts the great battle was fought between King Indulfus and the Danes, in which that monarch was among the slain. My brother, who is factor to the Earl of Seafield, has lately found the resting-place of the king beneath a cairn, some thirty yards long by fifteen broad, made up of rounded stones, not cemented by lime, but rudely piled together. We intend disturbing the remains of this ancient Scottish king shortly, without the slightest fear of disturbing his slumbers.

About a mile from Cullen House, in a north-west direction, lies the great manufactory of flint arrow-heads and spear-heads, where probably the "ancient arrow-maker" held out a way-side sign. However this may be, nothing is to be found within an area of twenty yards square but flint *flakes*; I have met with hundreds, but with only one finished arrow-head—which is the small one exhibited.

Finished arrow and spear-heads are abundant round this "workshop," and are often turned up by the plough. They have been also found at a somewhat greater depth, as the following section shows:—Peat, 0·6 inches; sand, 0·6 inches; shingle made up of local quartzites, with many flint arrow-heads and a few flakes, 6 inches. "Flakes" are seldom or never found upon the surface, away from the "manufactory."

Note by Mr. George E. Roberts.—I have submitted the flint implements sent to me by Mr. Bryson to Mr. Christy, who recognises in the white quartz lance-head a *North-American* form, and comments upon it as one probably new to the British Islands.

On some Flint Arrow-heads from Canada. By FREDERICK ROYSTON FAIRBANK, ESQ., M.D., F.A.S.L., Loc. Sec. A.S.L. for Manchester.

THE accompanying arrow-heads, which I beg to present to the Society, were ploughed up in one of the valleys along the shores of Lake Erie, Canada. They were lying in the mould a few inches from the surface, and appeared to have been covered by sediment washed by the rain and by the overflowing of a small stream from the sides of the hills skirting the valley. Similar implements are found scattered over most of the valleys in that locality. It is believed that they were formed and used by the Eries, a tribe of Indians, who, numerous in 1623 when visited by Father Joseph de la Roche d'Allyon, were exterminated in less than thirty years from that date, by constant and sanguinary strife with their kinsmen the Hurons, Petuns, and Neuters, and also with the powerful Iroquois, their common enemy. We need not, then, be surprised that the weapons which they used are found in great numbers.

The arrow-heads may be divided according to their shape into three classes.

I. Almond shaped, $1\frac{1}{2}$ inches long, $\frac{7}{8}$ inch broad, and $\frac{1}{4}$ inch thick. The whole circumference sharp and serrated.

II. Triangular, $2\frac{1}{8}$ inches long, $1\frac{1}{8}$ inch broad at the base, and $\frac{1}{4}$ inch thick. Base sharp and serrated like the sides. The angles at the base project slightly beyond the level of the centre, so as to make this edge slightly crescentic.

III. In this class a process extends backwards from the centre of the base. The angles also at the base extend slightly backwards. Size various; the largest presented is 3 inches long, $1\frac{2}{3}$ inch broad, and $\frac{1}{2}$ inch thick.

The first class resembles in general characters the implements found in the drift known as "langues de chats." The second class, besides making a good arrow-head, would make a good, useful hatchet, fastened by its apex at right angles into the end of a staff. This instrument is very carefully made, and must have required a considerable amount of dexterity in its formation, being unusually thin for its size. The process extending from the base of Class III. would enable the head to be more firmly fastened to the shaft. The projecting posterior angles would prevent the arrow being withdrawn after piercing the body. Most of the heads of this class are slightly curved, probably from the conchoidal fracture of the flint. One of them possesses a remarkable double twist. Thinking that the head was intentionally made in this form to produce rotation during the passage of the arrow through the air; I formed an arrow with a head similar to this, and found that the curve, though slight, was sufficient to cause rotation during its flight. This movement did not occur when the head was straightened.

It is interesting to compare these implements, made by a tribe so recently extinct, with those obtained from the drift of France and England. Though in some respects they are superior to the latter, their general character is the same. Like the drift implements, they are rough hewn, and exhibit no signs of friction. The makers of them may therefore be considered to have been much on a par with the inhabitants of Europe during the early and middle portions of the "Stone age."

On the Vitality of the Black Race, or the Coloured People in the United States, according to the Census. By Count OSCAR REICHENBACH.

STATISTICS reveal to us mistakes and exaggerations on both sides of the Negro question.

The increase of population within the United States has been—

From 1790—1800	Whites.		Coloured.	
	85	....	32.23 per cent.
1810	84	....	37.38
1820	84.3	....	28.38
1830	84.5	....	31.44
1840	84	....	23.41
1850	87	....	26.62
1860	40.4	....	21.90

Increase of whites in the Free States from 1850-60....	42·7 per cent.
„ in the Slave States „ „ „ „	35·7 „ „

Texas first figured in 1850 with 58,558 coloured, originating from the United States, but of whom part had been imported before 1840. If we judge from the increase in newly settled parts, the number exported from the United States before 1840, amounted to 1 per cent. of the coloured in the United States in 1830. The real increase within the States was, therefore, from 1830 to 1840, 24·41 per cent. and the increase for 1850 only 26·13.

In the two first decennia, the blacks were increased by the importation of slaves and the acquisition of Louisiana. The territories obtained with the latter, appear for the first time in the census of 1810 with 45,863 coloured, or with 4·3 per cent. of the coloured in the United States in 1800. Of these 4·3 per cent., probably 123 per cent., originated from the United States as imported since the acquisition; the real increase by the acquisition amounted, therefore, to only 2 per cent. The black population had then increased, between 1800 and 1808, by importation of slaves, 3 per cent. more than between 1790 and 1800, or, taking into account the natural decrease in the increase of the blacks at that period, 8 per cent.

Florida was for the first time counted in 1830 with 16,343 coloured, or 0·9 per cent. of the coloured in 1830. In this case Negroes had been brought from the States since 1820, and even earlier; it will be therefore, sufficient to put the natural increase within the United States for 1833 with 31·2 per cent.

The natural increase per cent., including importation from Africa, therefore, is 1790-1800, 32·23; 1810, 35·23; 1820, 28·58; 1830, 31·2; 1840, 24·41; 1850, 26·13; 1860, 21·90. Probabilities without regard to the effects of war or of complete emancipation: 1870, 22·1; 1880, 19·4 per cent.

Neither the Census bureau nor writers on this subject could see a satisfactory reason for the fluctuation observable. I explained them in a manner to which Mr. Kennedy, the superintendent of the Census bureau, assents.

Before the close of the slave trade in 1808, speculation increased the importation of slaves to 8 per cent. of the coloured people within the States, over and above the usual per centage of importation. The imported were mostly adults in full vigour—they soon produced a generation. As the black race is of early virility, this generation became prolific in the decennium after the next, and in this way an alternation of increase continued. But gradually, and as the increase of the blacks generally declines, the differences wear off.

The war will most likely diminish the increase of the blacks. If peace is restored, and if liberty and immigration should return, the whole country will become more or less settled and occupied till 1880, and whilst immigration will still augment the natural increase of the whites, the Negroes will only increase in a rapidly decreasing ratio.

For the general result is, that the increase of the whites, inclusive of immigration, has had an upward, and the increase of the blacks without slave trade a downward, tendency. In 1850, the proportion of blacks to whites was 15·69 to 84·31, in 1860 it is only 13·69 to 86·31.

In the Slave States the proportions were :—

	Whites.	Blacks.
1800	64·8	35·2
1810	63·3	36·2
1820	63·13	36·87
1830	62·60	37·40
1840	63·41	36·39
1850	64·6	35·4
1860	66·7	32·3

The ratio of the blacks increased in the South till 1830 : by importation of slaves and by the acquisition of Louisiana and Florida : by a greater natural increase, and by a relative surplus of white emigration from South to North over emigration from the North and other parts to the South. After 1830 the proportions change by the decreasing fecundity of the blacks, and because, with the development of steam navigation and of railroads, and with some manufacturing industry in their train, commences a greater immigration into the South.

Excepting from the Slave States : Maryland, Delaware, Missouri, and New Mexico, (the latter possessing no slaves), the blacks increased, from 1850 to 1860, 22·6 per cent., and the whites, 29·9. In the excepted States the whites increased 63·6, the blacks, 12·3 per cent. In Missouri alone, the whites increased from 592,400 to 1,058,332, or 75·9 per cent., and the blacks only 30 per cent. ; in the other named parts the blacks increased 3·9, and the slaves amongst them decreased 4·3 per cent., or fell from 96,343 to 92,128.

Increase of the Inhabitants of the Slave States from 1850-60.

	Whites.	Coloured.	Proportion of whites&coloured	Absolute increase, coloured.
Maryland, Delaware, and Dis.				
Columbia	26·3	3·9	1 : 1·14	7,874
Virginia	17·06	4	1 : 0·23	21,746
Kentucky	20·76	6·9	1 : 0·33	15,175
North Carolina	14·12	14·3	1 : 1	45,176
Tennessee	9·24	13·8	1 : 1·49	32,238
South Carolina	6·13	4·4	1 : 0·71	17,276
Georgia	13·42	21·3	1 : 1·54	81,978
Florida	64·70	36	1 : 0·84	22,460
Alabama	23·43	38·3	1 : 1·3	94,667
Missouri	79·64	31	1 : 0·39	28,469
Mississippi	19·68	41	1 : 2·1	126,399
Louisiana	39·96	34	1 : 0·85	88920
Arkansas	99·88	132	1 : 1·3	63,533
Texas	173·31	209	1 : 1·2	122,270
New Mexico	34·73	—	1 : 0	—

Proportions of Whites and Coloured.

In Louisiana in 1850..	49·34 to 50·66	in 1860..	50·5 to 49·3
In Arkansas	77·6 to 22·3	„	73·3 to 23·7
In Texas	72·4 to 27·8	„	70 to 30

The more the States are situated north-east and north, the smaller is the absolute and proportional increase of the blacks. In Missouri the increase of 30 per cent. exceeds the average, but it is absolutely small, only 28,469.

The absolute and proportional increase is next smallest at the south-east; even in Florida the proportional increase of whites exceeds that of the coloured. Georgia alone shows an exception in the proportional increase; but its south-western part has been only lately become more open for cultivation, and the increase does not exceed the average. In Alabama, further west, the surplus in the proportional increase is only 1·1 to 1 of whites; the absolute increase of the coloured is, however, greater than in Georgia; for the per centage of the whole population is for 1860, in Georgia, 59·9 whites to 41·1 coloured, and in Alabama, 54·7 whites to 45·3 coloured.

The further we go south-west, the greater we find the proportional increase of coloured. In Mississippi, Arkansas, and Texas, along the Mississippi with its tributaries and bayous, and along the Gulf, we see the slave-owners occupying the fertile lands. After the pioneer comes the slaveowner—the capitalist with his human property.

In Louisiana, however, the whites increased 39·48, the coloured only 34 per cent. In this older settlement, the coloured already exceeded the whites, as 50·66 to 49·34. Or like, as in South Carolina, they had attained that maximum where the opposite movement begins the proportion became 50·8 whites to 49 coloured. A particular cause effected here rapidly, what in South Carolina, with the most illiberal of all institutions, with a small general increase, and without the commanding position at the mouth of the principal river of the country, approaches slowly; the City of New Orleans, a large commercial centre, gained alone 52,300 people, or 43,000 more than the increase of whites over coloured. There remain only two States, where the coloured exceed the whites in numbers, South Carolina and Mississippi.

Diseases, in consequence of a transport from northern to southern, from cultivated to new parts, have probably less effect on the coloured than on the white man. The Negro is prolific in thirty settled States, discipline preserves him against many dissipations, often against a close contact with the whites, and forces him to a healthy and very rarely over arduous agricultural labour. But when the population has reached a certain density, and the Negro is brought into close contact with the vices and virtues of civilisation, his increase soon stays behind that of the whites, even in the southern latitudes of the United States, where the climate is still far more adapted to the whites than to the coloured; the inferior organisation makes room for the superior. As the Indian is killed by the approach of civilisation, to which he resists in vain, so the black man perishes by that culture to which he serves as a humble instrument. To those who doubt the justice of this view, I observe, that in the climate and society of the States, liberty is still more unfavourable to the increase of coloured than slavery. The free coloured population of the Union increased :

1790—1800	....	82.28	per cent.
1810	....	72	"
1820	....	25.23	"
1830	....	36.87	"
1840	....	36.57	"
1850	....	12.28	"
1860	....	12.3	"

The great numbers of the first decennia are the result of the gradual emancipation in the Northern States, which affects the numbers till 1830. From 1850-60, the increase of the free coloured descended as low as 12.3 per cent., or 53,547.

The Ratio of the Free Coloured from 1850-60 is

	Decrease per cent.	Increase.	Decrease in number.	Increase.
Maine	2.14	—	29	
Vermont	1.25	—	9	
New Hampshire	5	—	26	
Massachusetts	—	5.93	—	538
Connecticut	—	12.14	—	994
Rhode Island	—	7.68	—	240
New York	0.13	—	64	
New Jersey	—	6.33	—	1,508
Pennsylvania	—	6.01	—	3,223
Ohio	—	41.12	—	11,367
Michigan	—	163.22	—	4,261
Indiana	—	1.4	—	168
Illinois	—	40.32	—	2,151
Wisconsin	—	3.44	—	536
Iowa	—	231.53	—	771
Kansas	—	—	—	625
Minnesota	—	—	—	239
California	—	310.77	—	2,904
Delaware	—	9.72	—	1,690
Maryland	—	12.35	—	9,020
District of Columbia	—	10.66	—	1,061
Virginia	—	6.88	—	3,456
Missouri	—	36.44	—	965
Kentucky	—	6.72	—	573
North Carolina	—	10.92	—	3,000
South Carolina	—	10.63	—	930
Tennessee	—	13.67	—	850
Georgia	—	19.41	—	568
Florida	—	—	—	
Alabama	—	19	—	423
Louisiana	—	7	—	1,176
Mississippi	16.88	—	157	
Arkansas	81.25	—	521	
Texas	10.58	—	40	

In some Southern States the free coloured had to fly before oppressive laws. In Georgia and Alabama their increase exceeded the average, in consequence of manumissions. Immigration has increased the free coloured at the north; yet here, too, the increase only amounts to 28,140, or to 14.5 per cent. In the northernmost States, the few blacks have decreased; in the State of New York, too, they have

decreased: they flock to the metropolis, and die like the insect that flies towards the fire. The gold-fields have attracted a few thousands. Two States, Ohio and Michigan, are remarkable, the increase amounts to one-third of that within the whole Union. Emigrants from the east and from the south crowded, together with manumitted and fugitive slaves, in these western middle states because other north-western states refused to admit them.

But the natural increase of the free coloured does not amount to 12·8 per cent. in 10 years; for the number of manumitted and fugitives was in the years

	1850.		1860.	
	Manumitted.	Fugitives.	Manumitted.	Fugitives.
Alabama	16	20	101	36
Arkansas	1	21	41	28
Delaware	277	26	12	12
Florida	22	18	17	11
Georgia	19	80	160	23
Kentucky	132	96	176	119
Louisiana	130	90	517	46
Maryland	493	279	1,017	113
Mississippi	6	41	182	68
Missouri	30	60	89	99
North Carolina	2	64	238	61
South Carolina	2	16	12	23
Tennessee	45	60	174	29
Texas	5	29	37	16
Virginia	218	83	277	177
District of Columbia	4	—	—	—
	1,467	1,011	3,078	893

Manumissions have been, however, in reality more numerous, for masters frequently took slaves north and set them free. But, adhering to the above data, the number of manumitted from 1850-60 has been 22,720, and of fugitives, 9,040: together, 31,790.

The whole number of emigrants to Liberia, amounted, from 1820-30, to 9302, of whom 3676 were born free; besides these, some went to the West Indies, and to British America. The whole emigration for 1850-60 did not amount to more than 6,000, or the free coloured were augmented by at least 25,790 manumitted and fugitives; there remain, therefore, at the utmost, 19,830, or 4·7 per cent. as the natural increase of the free coloured within the Union.

The slaves increased 23·23, or five times as much. That the somewhat greater portion of the free coloured live in the Northern States, contributed but little to this disparity.

With liberty, therefore, declines, not only the political, but also the numerical, the social and economical importance of the blacks. It remains, however, not less true, that like white men, the coloured would work and produce more when they were free, after they were

thrown on their own resources, were stirred by the possibility of acquiring property, and had become gradually accustomed to liberty. Their increase is restrained by physiological causes, not compressed in the narrow theory of Malthus; education, schools and political rights, add very little to the vitality of the coloured race in the society and in the climate of the States.

The mulattoes amounted in 1850 to 11·2 per cent.; comparative numbers in this direction are not yet known: we have, therefore, no positive proofs of their greater disability for propagation; but there are certainly more mulattoes amongst the free coloured than amongst the slaves. After emancipation, the now inconsiderable instinct of emigration would increase, relations and friends who preceded would, without hindrance, draw their kindred after them.

The deportation of coloured criminals to some particular region of Africa, I also consider commendable.

In conjunction with these artificial causes, the increase of the coloured would soon become very small; principally if a gradual and a conciliatory emancipation were once effected.

The following data, from the Preliminary Census Report for 1860, are of interest in respect to the increase of the free coloured: "These comparisons imply an excessive mortality amongst the free coloured, which is particularly evident in the large cities." Thus, in Boston, during the five years ending with 1859, the city registrar observes: "The number of coloured births was one less than the number of marriages, and the deaths exceeded the births in the proportion of nearly two to one." In Providence, where a very correct registry has been in operation, under the superintendence of Dr. Snow, the deaths are one in twenty-four of the coloured, and in Philadelphia, during the last six months of the census year, the new city registration gives 148 births against 306 deaths among the free coloured, Taking town and country together, however, the results are more favourable. In the State Registries of Rhode Island and Connecticut, where the distinctions of colour have been specified, the yearly deaths of the coloured and the mulattoes have generally, though not uniformly, exceeded the yearly births—a high rate of mortality, chiefly ascribed to consumption and other diseases of the respiratory system.

Some lessons can be learned from the numbers of manumitted and of fugitives. The number of the latter fell from 1011 in 1850 to 803 in 1860, whilst the slaves had increased 23 per cent. and a successful escape had become more certain by greater facilities of conveyance, and by public opinion at the north. We must therefrom infer, that the treatment of slaves had become more mild, notwithstanding the passing of oppressive laws in some States of the South. In the year 1860, manumissions amounted to 115 per cent. more than in 1850, whilst the slaves had increased only 23 per cent.

The statistics of the two most north-eastern States, fully confirm the existence of a tendency to emancipation, independent of coercive laws imposed by section on section, and the existence of moral and economical powers, working in opposition to the passions excited by political ambition and conflict. In the year 1790 Delaware had 3,090

free, to 6,153 slaves; in 1860 there were 19,829 free to 1,798 slaves. In Maryland the decrease of slaves begins with 1810, there being 39,730 free and 107,397 slaves, against 83,492 free, and 87,189 slaves in 1860. Virginia had once entered upon this movement of emancipation, from north-east north to south and south-west. But here the decrease of 1839 was still less the cause of manumissions than of a migration of slave-owners to the west. This migration was so considerable, that the whites increased till 1840 only 6·07, and the slaves only 4·04 per cent., whilst the free coloured increased 5·28 per cent. In 1850 a normal condition returned, the whites increased 20·77, the slaves only 5·21, the free coloured 8·98 emigrants from the north took the place of departing slave-owners. In 1850 the number of slave-owners amounted to 347,525; for 1860 it has not yet been computed, but having most likely increased less than 23·2 per cent. which is the increase of slaves, and the increase of whites being as high as 33 per cent. we conclude that many of the slave-owners sold out, and that a decreasing proportion of the population has a direct interest in the existence of slavery.

Without the intervention of political commotions, and without the possibility and development of a sectional policy, slavery would have taken a course to emancipation by States.

An orderly and peaceable emancipation would cause a decrease of coloured at the north; for the coloured at the north do not naturally increase, and there would not be any more emigrants, manumitted and fugitives augmenting them; on the contrary, some would emigrate to the South, where climate, economical conditions, and society are somewhat more congenial. In fifty years, hardly any coloured would be found in the present northern States, and over the whole extent of the country their numbers would probably not amount to more than 9,000,000, a number more likely to decrease than increase from that time forward; from causes still more powerful than those operating for the transmutation of people in Ireland.

The PRESIDENT said the paper which had been read was one which the author had compiled with great care, and contained facts and deductions of the very highest importance to those who took an interest in the future of the Negro race in America. One of the evils which had frequently been pointed out as incidental to the slave population of America was the great mortality amongst the children of the African race in Virginia. This, public writers had attempted to show, was peculiar to the Negroes in the Confederate States; but the present paper has clearly demonstrated that the mortality was far greater in the Federal States, where there was absolutely no increase at all, while the Negroes, when under the protection of a master, increased twenty per cent. It was satisfactory also to know that the numbers of escaped slaves were so largely decreasing, and not from increased severity of their masters so much as from an increased affection which the Negro feels to his protectors when treated with discretion. The utter unfitness of the Negro for freedom when in juxtaposition with the European was, no doubt, the chief cause of the rapid decrease of all the Negroes

north of Mason's and Dixon's line. We should, however, not forget that climate also had something to do with the matter. The 40 deg. of north latitude was, perhaps, higher than any Negro could exist in a normal condition. It was absurd to talk of Virginia as a breeding state, for that state was not nearly so well suited to the Negro constitution as the states further South. Everything would lead us to suppose that it would be better both for the Negro and for their masters that they should gradually be withdrawn from the Northern States and sent South, at least the surplus population. The European could work in some parts of Virginia, but further South the labour of the Negro was indispensable to the cultivation of the land.

Mr. ALFRED R. WALLACE said that we must not hurriedly assume that the cause of the non-increase of the Negro in the Federal States was due either to his unfitness for civilisation or from the effects of climate, as it might depend on the different relative numbers of the sexes, and he should be glad of further confirmation on this point.

Count OSCAR REICHENBACH said that he had not omitted to bear this in view, and that, as far as he had been able to discover, there was no difference in the proportion of the sexes between the Confederate and Federal States.

Mr. HUME GREENFIELD thought that there was a gradual migration of the Negro population taking place from east to west, and that Negro labour would be superseded by Europeans wherever it was possible for them to labour.

Count OSCAR REICHENBACH, in reply, said that it was impossible for him to submit all the proofs of his conclusions, but he thought they would be found in his paper. He thought that nature was gradually doing the work which the advocates for emancipation were trying to do. Where the white man can labour there will be no chance for the Negro. Should the Negroes become free, and be sent North, they would soon become entirely extinct.

ANNIVERSARY GENERAL MEETING.

JANUARY 5TH, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

THE minutes of the last General Meeting were read and confirmed.

The TREASURER submitted the following Balance Sheet, which had been passed by the Auditors.

Balance Sheet of the Anthropological Society for the Year 1863.

Dr.	£	s.	d.	Cr.	£	s.	d.		
Received 183 Annual Subscriptions at £2:2:0.....	384	6	0	Paid for printing and lithography.....	228	5	0		
A Fellow, on account of subscription	1	0	0	Stationery and binding....	23	4	6		
One Fellow overpaid	0	0	6	Meetings.....	32	10	6		
Subscriptions in arrear....	63	0	0	Attendance.....	10	10	0		
Two life compositions at £21	42	0	0	Advertisements.....	50	11	3		
Subscriptions to Journals..	2	9	0	Postages, messengers, candles, cleaning offices, tin box, and sundry expenses	56	0	7		
Donations:—				Reporting.....	5	15	0		
Mr. Christy.....	£5	0		Mr. Blake's expenses to Newcastle.....	14	0	0		
Mr. J. F. Collingwood	10	10		Still owing for printing....	155	1	3		
Mr. S. E. Collingwood	5	5		Balance in favour of the Society.....	64	11	5		
		20	15						
For copies of the President's Inaugural Address.....	1	19	6						
Average value of printed stock in hand as follows:									
Longman (Waitz) abt. 100									
Trübner (Journal) „ 20									
„ (Address) „ 5									
		—	125	0					
	£	40	10	0		£	640	11	0

Mr. C. CARTER BLAKE, Honorary Secretary, read the following Report of the Council.

FIRST ANNUAL REPORT OF THE ANTHROPOLOGICAL SOCIETY OF LONDON.

THE Council of the Anthropological Society of London have much pleasure in reporting to the Fellows of the Society that they consider the state of the Society to be satisfactory and most encouraging. The past year has been one of great anxiety to the Council, inasmuch as the scheme proposed by the original circular of the Society was so vast, that the Council at first nearly despaired of being able to carry it out in all its particulars. The Council now beg to submit a few remarks on each of the objects for which the Society was founded, and also to add some suggestions for the consideration of the Society.

Meetings. During the past year, i.e. since February 24, thirteen

ordinary meetings of the Society have been held, at which twenty-four papers have been read, consisting of the following:—

- DR. JAMES HUNT, President, On the Study of Anthropology.
- CAPTAIN R. F. BURTON, Vice-President, A Day among the Fans.
- PROFESSOR RAIMONDI, On the Indian Tribes of Loreto, in North Peru.
- R. T. GORE, Esq., On a Case of Microcephaly.
- ALFRED TYLOR, Esq., On the Discovery of Supposed Human Remains in the Tool-bearing Drift of Moulin-Quignon.
- DR. JULIUS SCHVABZ, On the Permanence of Type.
- C. S. WAKE, Esq., On the Relations of Man to the Lower Animals.
- W. BOLLAERT, Esq., Past and Present Populations of the New World.
- PROFESSOR JOHN MARSHALL, On a Case of Microcephaly.
- PROFESSOR GEORGE BUSK, On the Human Remains from so-called Brick Earth, at Luton, near Chatham, contributed by the Rev. H. F. Rivers.
- T. BENDYSHE, Esq., On Human Remains found at Barrington, in Cambridgeshire.
- R. S. CHARNOCK, Esq., On the Science of Language.
- W. WINWOOD READE, Esq., On the Bush Tribes of Equatorial Africa.
- C. CARTER BLAKE, Esq., F.G.S., On Recent Evidence of the Extreme Antiquity of the Human Race.
- C. CARTER BLAKE, Esq., F.G.S., Report on the Anthropological Papers read before the British Association at Newcastle.
- PROFESSOR JOHN MARSHALL, F.R.S., On the Superficial Convulsions of a Microcephalic Brain.
- GEORGE E. ROBERTS, Esq., and PROFESSOR BUSK, F.R.S., Note on the Opening of a Kist at Burghead.
- CAPTAIN EUSTACE JACOB, Indian Tribes of Vancouver's Island.
- DR. JAMES HUNT, F.S.A., Pres. A.S.L., The Negro's Place in Nature.
- CLEMENTS R. MARKHAM, Esq., F.R.G.S., On Crystal Quartz Cutting Instruments of the Ancient Inhabitants of Chanduy, near Guayaquil.
- GEORGE E. ROBERTS, Esq., F.A.S.L., On the Discovery of Mammalian Bone, cut and sawn by Flint Implements at Audley End, Essex.
- A. BRYSON, Esq., F.G.S., On Human Remains from the Bin of Cullen (communicated by George E. Roberts, Esq., F.A.S.L.)

DR. F. ROYSTON FAIRBANK, On Flint Arrowheads from Canada.

COUNT OSCAR REICHENBACH, Vitality of the Coloured People in the United States.

The Council hope that during the next year some most important and valuable memoirs will be laid before the Society.

The discussions have been satisfactory, and many Fellows and visitors had taken part in them.

Transactions. The Council, at the early part of the year, made arrangements with Messrs. Trubner and Co. to publish the Journal of the Society in connection with the *Anthropological Review*. This has hitherto been carried out, and the Council think that the connection between the *Review* and *Journal* will soon be better understood. At first the *Journal* was printed as part of the *Review*, but the Council have now made arrangements that the *Journal* shall be paged differently, and it will then be seen for which part of this publication the Society is alone responsible. The *Journal* for the ensuing year will occupy a far larger space than it has hitherto done. An offer was made to the Council of the copyright of the *Anthropological Review*, which the Council felt it their duty to decline. The *Memoirs* have not yet been published, but a volume is now in the press. A general wish of the Fellows induced the Council to order the separate publication of the President's paper "On the Negro's Place in Nature," which will, however, again appear in the forthcoming volume of *Memoirs*.

Museum. Many valuable donations have been made to the Museum, and many other presents have been offered when a suitable place has been found for the deposit. The following gentlemen have made donations to the Museum:—James Hunt, Esq., Rev. H. F. Rivers, W. W. Reade, Esq., George Witt, Esq., Erasmus Wilson, Esq., C. Carter Blake, Esq., Dr. R. Fairbank, Captain R. F. Burton, R. T. Gore, Esq., T. Bendyshe, Esq., and A. A. Fraser, Esq.

Library. The Library now consists of more than two hundred volumes. The Council have only recently made an effort to establish a Library; but they trust ere long to have such an Anthropological Library for the use of the Fellows as has never before existed in this metropolis. The Council also beg to suggest to the Fellows that they may all have works which, comparatively valueless in themselves, would yet be of the highest value in an Anthropological Library. Donations have already been received from the following gentlemen:—James Hunt, Esq. (one hundred and eighteen volumes) T. Bendyshe, Esq., J. Jones, Esq., Professor Busk, Dr. W. Bell, M. Boucher de Perthes, the Anthropological Society of Paris, M. Paul

Broca, M. Pruner-Bey, George Tate, Esq., Professor R. Owen, M. Camille Dareste, Professor Nicolucci, Sir Charles Lyell, Dr. Hughlings Jackson, C. Carter Blake, Esq., M. D'Omalius D'Hallo, Professor Dana, the Smithsonian Institution of New York, A. Stair, Esq., David Carrington, Esq., Professor Eckhard, Hekekyan Bey, Royal Institution of Cornwall, Dr. Beke, Sir W. Jardine, Dr. Cuthbert Collingwood, the Royal Geographical Society, Imperial Academy of Science of Vienna, the Society of Antiquaries, G. McHenry, Esq., J. Frederick Collingwood, Esq., Jacob Boys, Esq., R. S. Charnock, Esq., R. T. Gore, Esq., H. G. Atkinson, Esq., M. de Quatrefages, Dr. F. C. Webb, the Upper Hesse Society für Natur und Heilkunde, Rev. W. Houghton, W. Spencer Cockings, Esq., the Royal Society of London, George Witt, Esq., Professor R. Wagner, Professor Tennant, G. E. Roberts, Esq., A. Higgins, Esq., C. von Martius, Dr. Beddoe, and G. Pouchet.

Translations. The Council are glad to report that they have printed the first volume of a translation of Waitz's *Anthropologie der Naturvölker*, and they feel that the best thanks are due to Mr. J. Frederick Collingwood, for the care and attention with which he edited this work. Mr. Collingwood has fully explained the reasons which induced the Council to select this work, and they feel it right to acquaint the Fellows of their determination during the ensuing year to issue works which shall not advocate the same opinions as those put forward by Professor Waitz. The Council are fully impressed with the necessity of their exercising a strict impartiality in selecting works for translation. The Council have entrusted the chief management of the publications of the Society to a Publishing Committee, and they feel the thanks of the Society are due to this Committee for the efficient manner in which they have discharged their duties.

It is proposed that the following works should be next undertaken by the Society:—

Broca. Sur l'Hybridité Animale en général, et sur l'Hybridité Humaine en particulier. 8vo, Paris, 1860. Edited by C. Carter Blake, Esq., F.G.S., Hon. Sec. A.S.L. (In the press.)

Pouchet. Pluralité des Races Humaines. 8vo, Paris, 1858. Edited by T. Bendyshe, Esq., M.A., F.A.S.L.

Carl Vogt. Vorlesungen über den Menschen, seine Stellung in der Schöpfung und in der Geschichte der Erde. 8vo, Giessen, 1863. Edited by Dr. James Hunt, F.S.A., Pres. A.S.L.

Gratiolet. Mémoire sur les Plis Cérébraux de l'Homme et des Primates. 4to, Paris, 1855. Edited by Dr. Tuke.

A. de Quatrefages. *Unité de l'Espèce Humaine*. 8vo, Paris, 1861.
 Edited by George F. Rolph, Esq., F.A.S.L.

Dr. Theodor Waitz, Professor of Philosophy in the University of Marburg. *Anthropologie der Naturvölker*. 1861. Second part. Edited by J. Frederick Collingwood, Esq., F.G.S., F.R.S.L., Hon. Sec. A.S.L.

Gosse. *Mémoire sur les Déformations Artificielles du Crâne*. 8vo, Paris, 1855. Edited by Dr. Thurnam, F.S.A.

Retzius, Professor. The collected works of.

Committees. Two Committees have been appointed. The first to report on the terminology of Anthropological Science; and the second to report on the present state of the Anthropological Museums in Great Britain. The result of the reports will be issued to the Fellows as soon as they are known.

Societies. Arrangements have been made to exchange Transactions with the following Societies in Great Britain:—

- The Royal Society.
- Society of Antiquaries of London
- Royal Society of Literature.
- The Royal Geographical Society.
- Berwickshire Naturalists' Field Club.
- Philosophical and Literary Society of Leeds.
- The Royal Institute of Cornwall.
- The Glasgow Geological Society.
- Cotteswold Naturalists' Field Club.
- Literary and Philosophical Society of Liverpool.

Arrangements have been made for an exchange of publications with the following Academies and Societies, several of which have forwarded to the Society complete sets of their Proceedings and Memoirs:—

- The Anthropological Society of Paris.
- The Royal Academy of Sciences at Amsterdam.
- The Imperial German Academy at Dresden.
- The Royal Society of Victoria, Melbourne.
- The Smithsonian Institute, Washington.
- The Imperial Academy at St. Petersburg.
- The Canadian Institute, Toronto.
- The Imperial Academy of Sciences, Vienna.
- The Royal Bengal Asiatic Society, Calcutta.
- The Upper Hesse Society for Natural and Medical Science, Giessen.
- The Physio-economical Society of Königsburg.

In the foreign department, eighteen gentlemen have been elected Honorary Fellows, thirty-five Corresponding Members, and twenty Local Secretaries. Communications have been received from nearly all of these gentlemen, expressing great interest in the work of the Society and offering to advance its objects in every way in their power.

Honorary Fellows. The Council have felt it their duty to limit the present number of Honorary Fellows to twenty-five. It is proposed, however, eventually to increase this number to forty.

Corresponding Members. Thirty-five Corresponding Members have been elected, and the Council recommend that no more than forty be elected.

Local Secretaries. Twenty-two Local Secretaries have been appointed in Great Britain, of these seven are Fellows of the Society. The Council are still anxious to increase their number, and to have their official representative in every county, and also in every large town throughout the kingdom. They will be glad to hear from gentlemen who are really anxious to promote the objects of the Society. Twenty Local Secretaries have been appointed abroad, but the Council hope during the next year that their number will be largely increased. The Council invite the assistance of the Fellows in nominating gentlemen to fill this important office in different parts of the world. The Council have not yet been able "to indicate the class of facts required," but they hope during the ensuing session to be able to do so.

Donations. Besides the valuable donations which the Society have received for the Library and Museum, they have also the pleasure of announcing the following:—Henry Christy, Esq., £5.; J. F. Collingwood, Esq., £10.; S. E. Collingwood, Esq., £5.; Henry Hotze, Esq., £5 (for the library).

Special Donations. The following sums have been received as a special fund for preparing or stuffing a specimen of male Gorilla, presented to the Society by Mr. Winwood Reade:—J. Frederick Collingwood, Esq., £5.; S. E. B. Bouverie Pusey, Esq., £5.; S. E. Collingwood, Esq., £5.; James Hunt, Esq., £1.; Charles Stenning, Esq., £1.; C. R. des Ruffières, £1.; W. Chamberlain, Esq., 5s.

The Council having made a few remarks on each of the chief objects of the Society, would now beg to invite the attention of the Fellows to the important question of Finance, which will necessarily regulate its future operations. The experience of the past year has convinced the Council, after mature and earnest consideration, that the objects of the Society cannot be fully carried out until there are

Five hundred Fellows. The Council would, therefore, suggest the desirability of not increasing the subscription or of making an entrance fee, until this number has been obtained. It will be readily seen that the objects of this Society include something more than those generally included in a scientific society, and that the expense of printing is very large. The Council are glad, however, to state that the present number of Fellows, two hundred and thirty-six, will enable them to accomplish all they have done during the past year; but they feel that the ultimate success of a Society of this sort will require a larger annual expenditure. The Council feel especially anxious to establish as soon as possible a good reference library. They also look forward with earnest hope of being able to found a reliable Anthropological Museum, and thus remove the disgrace under which this country is now suffering, that with all our colonial possessions no independent Anthropological Museum has yet been established in this Metropolis.

The Council are fully sensible of the important services which the officers of the Society have rendered during the past year, and they feel that it is their duty to again call on all the officers for renewed exertion during the ensuing year. The Council trust that the ample success which their efforts have met during the past year, will be an encouragement to the official representatives of the Council to again use their exertions to put the affairs of the Society in a permanently satisfactory state.

Signed on behalf of the Council,
 JAMES HUNT, *Chairman.*

Mr. S. E. BOUVERIE PUSEY moved that the Report of Council be adopted, which was seconded by Mr. H. J. C. BEAVAN, and carried unanimously.

The PRESIDENT appointed Mr. J. REDDIE and Mr. H. J. C. BEAVAN scrutineers for the ballot, for the election of Officers and Council for 1864.

The PRESIDENT then delivered the annual address.

THE PRESIDENT'S ADDRESS.

GENTLEMEN,—A custom prevails amongst the chief scientific societies in the metropolis that the President should deliver an annual address. Believing such a course to be salutary to the well being of any society, I shall proceed to make such remarks as I think are suitable to the present occasion. The first year's existence of a scientific society is necessarily one not only of great hope, but also a period of great anxiety for those whose duty it is to see the objects of the society fully carried out.

When I addressed you at our first general meeting we had just

formed a Society, consisting of one hundred and twenty Fellows, but the plan proposed has yet to be tried before it could be decided whether the theory advanced was practicable. We shall now do well to review what we have done, with a view of seeing what still remains to be accomplished.

Every new plan is invariably met with certain objections, and our society has been no exception to this rule. We were told that our scheme was both impossible and impracticable. It was also boldly asserted that if we obtained members sufficient to carry out the objects of the Society, we could not obtain enough workers to do what was proposed. We were also told that existing societies with kindred objects could not get sufficient papers to be read at their meetings, and that our scheme must fail, from this if from no other reason. We were met with these and many other objections, frequently coming from men to whom we have a right to look both for support and encouragement; but experience has shown that these discouragements have no real existence. I will not detain you to show that each fancied defect in the constitution of our Society has been proved to be fallacious. I will merely ask you to recall what we have done as the most satisfactory answer to such objections.

We have also been obliged to hear the objects of the Society misrepresented, and have been told that we were antagonistic to existing institutions. On this point I think I shall do well to say a few words, as it might tend to put our position in a clearer light before those who have not yet really taken the trouble to inquire into the objects and aim of our society. In the first place, then, it is an erroneous idea to suppose that this Society is in any way antagonistic to any existing institution, or that there is any society in Great Britain which has ever attempted to carry out the objects for which we have united together. We are, indeed, trying to do something more than founding a new society; we are endeavouring to found a new science. We make bold to assert that no society has ever before attempted in this country to found a science of Man or Mankind. We have long had the different departments composing this science studied; but as long as they were isolated, so long could there be no real science of Mankind. The time has arrived when it has become absolutely necessary that all the different branches of science relating to man shall no longer be isolated, for we now see that it is necessary to bring all these branches together before we can make any real progress. It is our duty to use several sciences in founding our own. Just as the geologists have divided the different departments of their science into Geognosy, Palæontology, and Mineralogy, so the anthropologist sees the necessity of studying something more than Ethnology or the science of races, if he hoped to solve the problem of which that great branch of our science treats.

Many years ago the plan we have adopted would have been an impossibility. Archæology and Ethnology have hitherto been kept separate, to the great injury of both sciences. They both form an integral part of our science. We cannot be too careful to fully understand the meaning that we attach to our science, and, by so doing, we shall

perhaps, be able to remove much of the misconception which exists respecting our objects and aims. The first attempt made to found such a science was in Paris, at the beginning of the present century; but it was a failure. It is only twenty-five years ago that a society was formed at Paris by William Edwards for the study of Ethnology. A few years later an Ethnological Society on exactly the same plan was formed in this metropolis. A similar society was, later still, formed at New York. The Ethnological Society of Paris consisted, at its height, of forty-six members. It still exists in name as one of the Paris societies, but has not published any memoirs since 1848. The London Ethnological Society, for the first two years of its existence, only consisted of twenty-one members. The second report of the Council announced that this number could not be increased. It has published altogether six volumes.

The Ethnological Society of New York consisted at one time of forty-four members. For some time it ceased to publish any Memoirs or proceedings; in 1856 a part of a volume was issued, but nothing has since appeared. Up to this time it has published two volumes.

It is now some four years ago since some zealous students of mankind became sensible of the unsatisfactory nature of existing institutions, and determined, with a wise appreciation of the vast extent of their science, to establish a society in Paris which should meet the requirements of the age, and that should help to establish a *de facto* science of man. Those who have watched the workings of this society must have become convinced that our scientific brethren in Paris have led the way to the formation of a science of man built on an extended and firm foundation. During the four years of their existence they have published nearly four volumes of Bulletins, and one volume of Memoirs. To the end of the first year there were only nineteen enrolled members, but they have been gradually increasing since then, and now we believe number nearly two hundred.* And now we come to a short year since, when we enrolled ourselves together to found a similar society in this me-

* M. Broca has kindly sent us the following details.

"We have at present one hundred and fifty-four subscribing members, liable to an annual subscription of 30 francs. These are:—112 living at Paris; 41 in the departments; 1 abroad—total, 154. When the last one, Professor Rizzetti, chief of the statistical department of Turin, was elected, the Society decided that its regulations did not preclude foreigners from becoming subscribing members; and this question, which had not previously been mooted, has been resolved very recently by a vote which took place prior to the nomination of M. Rizzetti.

"Our honorary members amount to the number of six; i.e. MM. Serres, Milne-Edwards, Boucher de Perthes, Renan, d'Avezac, and Littré.

"We have thirty-six associate and foreign members. Of these are:—England and Ireland, 14; Germany and Austria, 6; Switzerland, 4; Italy and Sicily, 2; America, 3; Spain, 1; Denmark, 1; Holland, 1; Belgium, 1; Russia, 3—36.

"We have, in fact, eighteen national correspondents, belonging for the most part to the army or the navy; and eight foreign correspondents, all established in America.

"Amongst the one hundred and twelve subscribing members living in Paris, we count eighty-four doctors of medicine.

tropolis. But the plan of our society is not a mere copy of our now sister society at Paris. On the contrary, a marked object of our society is the translation and printing of the most important works on Anthropology published on the continent. This alone is an immense and most important undertaking, and rendered it necessary that our numbers should be much larger than our sister society at Paris and than any other society which did not contemplate these important objects. We can barely yet be said to have existed one year, and we now number two hundred and thirty-six Fellows. This surely is a satisfactory beginning, and who will with such a fact again assert our undertaking to be impossible ?

But the translation of foreign works is not the sole peculiarity of our Society. We contemplate the formation of an Anthropological Museum and a reference library for Anthropological students. We have barely yet commenced either of these undertakings, but yet specimens and books are gradually coming in, and by the end of another year let us trust that both our museum and our library will be in a flourishing state of existence.

On this subject I am well aware a very great difference of opinion prevails amongst men of science, and it is generally felt it is best to have no museum at all than a defective one, and that small museums are highly inconvenient, while large museums are only kept up at very great expense. These objections have been fully considered, and the council has been led to the determination to found a really useful, if not a large museum. The Anthropological Museum of Paris is perhaps the finest in the world, but this does not prevent our sister society there from also founding their own museum. Their success hitherto has been very great, and I trust we shall be able to make some exchanges with this society to our mutual advantage.

Our society have recently received the offer of a most desirable suite of apartments for a museum and library. This, if accepted, will incur a much larger annual expenditure than we now have ; but if the present Fellows of the Society will individually assist to increase the number of our ranks with as little delay as possible, we should at once be able to establish our museum and library in one of the most desirable parts of London.

There is also a fourth peculiarity of our society which I should notice, and it is the plan of appointing local secretaries in different parts of the world, to act for the society in their districts in the same manner as our honorary secretaries act at home. When our plan with regard to our local secretaries is fully carried out, we shall have such a staff of officers in different parts of the world, that we shall not be long in obtaining a museum if we only give our officers permission to secure objects of importance for us. Not only will it be the duty of our local secretaries to obtain objects of interest and importance for our museum, but they will also send us an account of any new discoveries in their districts. I also trust that ere long some general questions will be sent to them on which we more particularly require information at this time. The efficacy of this plan will, of course,

very greatly depend on the gentlemen whom we appoint to these offices, and during the next year we shall be able to test this branch of our undertaking.

Having thus traced what has been done by other societies and what we propose to do, let me say a few words on the purely scientific aspects of our Society and on the position of Anthropology.

Let it, in the first place, be clearly understood that our society is not simply an Ethnological Society under another name, and that the name of our Society has a definite meaning which no amount of misrepresentation can ever take from it.

Anthropology includes every science which bears directly on the science of man or mankind, and includes Anatomy, Physiology, Psychology, Ethnography, Ethnology, Philology, History, Archæology and Palæontology as applied to man. Take either of these branches of science away, and we can no longer form a veritable science of man. But it may be asked, "Is it proposed to do the duty that is now attempted by societies that are devoted to some of the objects?" Certainly not; we only make use of these sciences so far as they will throw light on the past, the present, and the probable future of the human family. The philologist has hitherto been working in ignorance of the results of the physiologist; the historian in ignorance of the deduction of the ethnologist; and archæology and ethnography have hitherto been supposed to be two distinct sciences; while the psychologist and anatomist have had a mutual contempt for the deductions of each other. It is to remove these anomalies that we have formed ourselves together, with a determination of hearing all sides of the question, and examining the evidence of each special student in a perfectly unbiassed manner. No one who has devoted much serious attention to the study of man can doubt both the desirability and the necessity of thus bringing all the sciences relating to man together under one head. The departments may do well to go on working at their own branch, but it will greatly assist their inquiries to know of the discoveries that are making in other departments of science. Let it, therefore, be no longer said that we are wanting to split up science into different branches: for the contrary is the fact. We have seen—indeed we see clearly at this day—the injury that accrues to science from their forced separation; it is our object and desire to see them all united under one great science.

This, no doubt, is a vast scheme, and one which it will require many years to fully develope. But we see how well such a plan has answered in the Paris Anthropological Society.

M. Broca's brief and masterly summary of their labours during the last four years is already known to you, as M. Broca had the kindness to favour our official organ with a copy of this admirable address. There is, however, one important omission, and that is a detailed account of M. Broca's own communications. That *savant* has been the most active member of the society, and has contributed some of the most valuable memoirs that have been under its consideration, but with great modesty he has omitted to speak of them in his succinct summary of the labours of the society. I will only ask you to

look at the first volume of memoirs and at the four volumes of bulletins to see how well conceived the plan of the Paris Society was, and how admirable it has been carried out. Never before, indeed, has there been a society for the really scientific study of Man in all its branches. The *savants* of Paris felt that there could be no science of Man as long as ethnology was alone studied. In this country the same difficulty has been found, and our society has been created to supply this want. What rendered our society the more necessary was the vagueness attached to the word ethnology. Etymologically it means the Science of Nations, but by common usage it has been generally understood as the Science of Races. And yet one of the most learned ethnologists of the present day, Dr. R. G. Latham, declares that he has never used the word "race" in connection with Man in all his scientific writings, and professes himself unable to understand the meaning which is attached to that word. Thus we see the wonderful inconsistency of men calling themselves ethnologists, when they do not believe that such a science exists.

If ethnology means the Science of Races, then it is assuming that which yet has to be proved. Personally, I believe in the existence of races, and consequently that there is a science of ethnology; but how objectionable the word must be to those who do not believe in races can be easily conceived. In the word anthropology there is none of these gratuitous assumptions. It assumes nothing, and merely means the Science of Man or Mankind. Some men in this country have expressed themselves adverse to the introduction of what they please to call a new word in the language, and also have alleged that anthropology means exactly the same thing as ethnology. Both statements are equally erroneous. Anthropology is not a new word, nor does it mean at all the same thing as ethnology. In Germany, France, and even America, the word anthropology has long been introduced, and with exactly the same meaning which we attach to it. Indeed, I think I may affirm that there is at present not a scientific man of any eminence in either Germany, France or America who ever confuses the meaning of the two words, anthropology and ethnology. Dr. Latham, not believing in the existence of races, was obliged to give a meaning entirely his own to ethnology, and he gave a meaning equally faulty to the word anthropology. When Messrs. Nott and Gliddon, ten years ago, projected their book on the *Types of Mankind*, it was distinctly put forward as a work on "Anthropology", and it is not likely that the confusion which has hitherto reigned supreme in this country will be allowed to exist much longer. Our society has done much towards making known the true meaning to be attached to the word anthropology. A word that is wanted (even if new) always become easily and naturally acclimatised. In Paris there was no necessity to use any effort to popularise the meaning of the word; for the people have public instructors who are professors of anthropology.

During the past year we have seen how readily the public adopted what is erroneously called a new term. When it was reported that a fossil human jaw had been found at Abbeville, much public discus-

sion was excited, and it was at once asked to what branch of science ought this subject to be referred? Our society had only just come into existence, but it was at once seen that ours was the only existing society which could naturally take cognisance of such a discovery. The jaw itself was handed over to the professor of anthropology at the *Jardin des Plantes*, and the Paris Society of Anthropology, as well as ourselves, were called on to carefully consider the matter. Dr. Falconer in his letter speaks of the gentlemen whom he consulted on this subject as "both practised anthropologists", and no other word would have been suitable. The reputed fossil jaw will illustrate the necessity of our science. It belonged neither to the "Science of Races" or to "the relation of men to one another", but belonged essentially to the Science of Man. There can be no doubt, however, that up to the time this society was founded, a very vague and unsatisfactory meaning had been attached to the word anthropology. In translating it into English frequently the word ethnology was used as synonymous with anthropology. I will give one instance, which is a remarkable warning to others to avoid similar mistakes for the future. At the British Association at Manchester in 1861, a paper was read "On the Acclimatisation of Man", in which the following passage occurs, as a translation from M. Boudin. "The problem is certainly one of the most important in the science of ethnology". Now, if we turn to the original, we find the word *anthropologie* has been most unwarrantably translated ethnology. The only palliation I can offer for such a course is the fact that at the time this paper was read the word anthropology was not understood in this country. No one, however, is now more conscious of his error than the writer of that paper: for now some persons suppose that he thinks the question of the acclimatisation of man "is one of the most important in the science of ethnology," as he then asserted. But being myself the guilty person, I beg openly to acknowledge my error, and candidly assert that the question of the acclimatisation of man is not an ethnological subject, but essentially a question belonging to anthropology. It is not a question of races, but a question relating to mankind, whether composed of species, races, or varieties. In fact, there is, perhaps, no question in anthropology which requires so many different branches of science for its elucidation as the acclimatisation of man. 1. We must know the physiological changes which are produced by different climates. 2. The laws of hygiene or health. 3. Vital statistics. 4. The laws regulating the distribution of disease. 5. The influence of races in resisting disease; and, lastly, we require to know whether the conclusions which are derived from an investigation of the foregoing are supported by history, philology, and archæology.

This is only one illustration of very many which could be adduced to show that we can never have a science of mankind until we look on Man from every point of view.

Lord Stanhope, last year in his address to the Literary Fund, called attention to the large increase of scientific societies in this metropolis, which appeared to him to be a cause of regret. Now be this as it

may, there can be no doubt that the students of each science are the best judges as to what is required for the progress of their science. Our society aims rather at decreasing than increasing the number of scientific societies. Both the Ethnological and Philological Societies may perhaps eventually find that they can best advance their science in union with ourselves. Both these sciences form an integral part of the science of anthropology; but it must be left to time to decide whether those sciences can be best prosecuted under one head or separately. As Waitz well says, "There remains, unfortunately, a considerable gap in our knowledge; for these different branches of science stand yet side by side, unconnected, while they should by combination assist each other." But as Lord Stanhope has justly observed, it is the spirit of combination that is required in this country. The time will no doubt come when the ethnologists especially will see that a union with ourselves will be absolutely necessary if any advance is to be made in their science. On this point I cannot do better than quote from the philosophical address delivered to our sister society at Paris, by its accomplished Secretary-General, M. Paul Broca. He says: "To describe and classify the actual races, to point out their analogies and differences, to study their aptitudes and manners, to determine their filiation by blood and language, is no doubt to run over much ground in the field of anthropology; but there remain higher and more general questions. All the human races, in spite of their diversity, form a great whole, a great harmonic group; and it is important to examine the group in its *ensemble*, to determine its position in the series of beings, its relations with other groups of nature, its common characters, whether in the anatomical and physiological or in the intellectual order. It is not less necessary to study the laws which preside in maintaining or changing these characters, to appreciate the actions of external conditions, the changes of climate, the phenomena of hereditary transmission, and the extreme influences of consanguinity and ethnic intermixtures—these are great and manifold questions within the sphere of natural history and general biology. Finally, in a more elevated sphere, and without venturing to attain the regions which conceal the problem of origin (a fascinating and perhaps insoluble problem), our science eagerly searches for the first traces of man's appearance on the earth, it studies the most ancient remains of his industry, and gradually descending from incalculably remote epochs towards the historical period, it follows humanity in its slow evolution, in the successive stages of its progress, in its inventions, in its struggles with the organic world, and its conquests over nature."

It is to this combination that all our energies are directed, and ere long all earnest scientific ethnologists will, I trust, feel it their duty to aid us. We have witnessed the little progress that the Science of Man has made for want of this combination, and none can be more conscious of this than those who have studied ethnology. Indeed, as anthropologists we rejoice to see that our sister Ethnological society has elected as her President a gentleman who is so well known as a zealous anthropologist, and whose labours all tend to unite together

those twin brothers, Archæology and Ethnography. I need not say how we should welcome to our ranks all those who are really anxious for the progress of anthropological science. In the meantime our duty is clear; we have a great object before us in thus endeavouring to unite the various branches of science, and we can enter into no scheme which would prevent us from fully and carefully carrying them out in all its details. I cannot but trust and hope that the real friends of science will look at this matter from a purely scientific standpoint, and that they will alone be influenced by what they believe to be the best for the progress of science. Whether or not the ethnologists of the country all join us, I hope we shall continue to look at their labours in no envious spirit, but rather that we should look at the progress and popularity of their science as the surest sign that our own science is destined to arrive at far more important truths, and that it will also eventually become far more popular.

Some have supposed that we merely entertain some philosophical speculations, and that the result of our inquiries can have no practical bearing on humanity. I need not waste time in showing how groundless such a charge is; for it appears to me that there is no science whose deductions can have a greater practical bearing on the well-being of humanity at large than the conclusions arrived at by Anthropologists.

Those who have narrowly watched, as I have done, the popular literature on Anthropology during the past year, must have become fully convinced of the absolute necessity of our Society. Many writers have, during the past year, complained, and not without reason, of the partial inductions which have been made by the ethnologist and the archæologist when speaking of the antiquity of man, and who have entirely ignored the teaching of the physiologist and the philologist, as well as the ancient historian. Why, they ask justly, should the evidence of ancient history be entirely passed over in silence? Why should it not have its true value in our deductions? These and similar questions have been put by popular writers on this subject, and they merit our special consideration. It has been well pointed out by a popular writer on this subject, that the deductions of the ethnologist are quite worthless when taken alone, and that we must especially interrogate physiology. This writer* puts the following questions:—

“How are the characters and physical properties of either parent, or both, transmitted to the child? How far does family likeness extend, and within what limits is it confined? What determines the sex, the full-grown stature, the complexion, and the whole physical constitution of the human offspring? Plainly it is not the choice of the parents. Is it a direct act of Divine sovereignty? Is it some law of physical sequence? If so, its nature and mode of operation are evidently quite unknown. Again, how far does the influence of climate upon the human frame extend? Does it increase in succes-

* Scientific Theories of the Origin of Man. Reprinted from the *Record* newspaper, 1863, p. 15.

sive generations or diminish? Has it power to assimilate within certain limits of natural congruity, being wholly powerless beyond them? or does it act by a simple graduation? In this case, does it affect most powerfully those who approach to the required type, or those who deviate most from it? Or does it act most upon those who are neither so unlike as to escape the range of its influence, and are thus incapable of acclimatisation, nor so nearly suited to the climate that little change is required to produce a perfect harmony? Once more, how far do famine and plenty, a scanty or a generous diet, habits of order and subjection to moral law, or a life barbarous and almost animal in its nature, influence the features and brain, and affect, in course of time, the very form of the skull, degrading it below the normal type of intelligent manhood? These are only a few of the questions which need to be answered, and answered with the greatest possible exactness, before any merely scientific theory on the diversity or unity of the human race can rise from a conjecture, more or less plausible, into a character of a fixed and demonstrable conclusion, drawn from the data of natural science alone."

Now to such questions as these we are bound to return a rational answer. We must no longer go on with reckless general assertions, but remember that all true science is built on the gradual accumulation of well ascertained facts. Any generalisation made from ethnology alone cannot have a scientific value. The same may be said of the deductions of the physiologist, the psychologist, the philologist, the historian, or the archaeologist.

I cannot impress too strongly on the Society my conviction that it is just this combination which is at this time required, and of the necessity of hearing and carefully examining the evidence derived from different branches of science before we come to any conclusion on the origin and development of humanity.

If I were to pass under review what we have done to carry out the principles of such an undertaking as I have suggested, I feel it would not be entirely satisfactory to my own feelings. It cannot be denied that we have regularly issued to the Fellows a quarterly journal entirely devoted to the science of man. This is, I believe, the first instance of a quarterly journal ever having been issued entirely devoted to such a subject. So far we have cause for satisfaction, and I believe that this periodical has done a considerable amount of good in removing erroneous impressions, and in its columns are deposited many useful scientific facts of immense value to the future inquirer. Nor has its influence been confined to our own country, for not only has it been widely circulated throughout Europe, but in the antipodes its contents have been freely criticised. We are glad to find that scientific men of all countries are contributors to its pages, showing that it is devoted to no clique or party, but that it is the independent organ for all those who seek the truth. While, however, we patronise this quarterly, we are in no way responsible for its contents or its conduct. Our Journal is appended to it, and this is merely a mutual convenience which may cease any day, and which in no way implicates

the Society. Our Journal will, during this year, be very much larger, and perhaps ultimately absorb the whole publication. Be this as it may, none can doubt the value of the publication during the past year.

With regard to our meetings, we have also not yet been able to see, in all its particulars, the advantages of our plan; but those who have attended our meetings can judge of the large amount of interesting matter that has been elicited in our discussions, and of which, I am sorry to say, in many cases only an imperfect record exists. I shall not give a detailed examination of the various papers and Memoirs which have been read before us during the past year; but there is one class of papers which so well illustrates the necessity for our society, that I must briefly touch on them—I allude to the cases of microcephalic brains, which have been brought under our consideration. Our speculators on the origin of humanity have, nearly without exception, passed over the evidence to be derived from a study of these arrested brain-growths in nearly complete silence. Until we were established there was no society which could take cognisance of such cases. I will not now dwell on the deductions that may be made, because that is a matter of controversy, but express my satisfaction that we should have been the means of bringing to light one of the smallest cases of arrested brain-growth ever recorded, and the example set by our respected Fellow, Mr. R. T. Gore, has been the means of bringing to light other nearly equally interesting cases from other observers.

Twenty-four distinct papers have been read during the past year, and nearly the whole have been, or are now, printing. So far, then, there has been no indication of a want of material, perhaps rather the reverse is the case; but I hope to see during the ensuing year a larger number of carefully-prepared Memoirs than we have had during the past session. I have witnessed with much pleasure the gradual increase of workers which has taken place during the time we have been founded. I trust to see that number largely increased.

We must bear in mind that we are all students, and that each may do much good by devoting his attention to some special branch of inquiry. It is frequently asserted that the scientific conclusions of some inquirers differ from the conclusions of some other man who is presumed to be an "authority" on a special subject. But we shall do well to remember that in science we cannot recognise authority; for science must be founded on facts, and not on authorities, however great or venerable. It is only recently that we in England have already recognised this principle, and in this we are far behind our scientific brethren in France or Germany. It was only the other day I saw an allusion to our labours in a Dutch periodical, and the writer remarks, "We welcome this programme the more gladly, as it testifies that, *even* in England, they will no longer accept unscientific replies to anthropological questions." I trust the truth of this satire will now exist no longer.

I have thought it best to confine my remarks to the objects of our Society, and not to touch at length on the progress of Anthropology

in different parts of the world. I will simply remark, that never was there a year in which so many popular works on Anthropology were published. In this country, besides Waitz, we have had Sir C. Lyell's *Antiquity of Man*, Professor Huxley's *Man's Place in Nature*, Wilson's *Pre-Historic Man*, Jackson's *Ethnology and Phrenology*, and Brace's *Manual of Ethnography*, falsely called *Manual of Ethnology*. African Anthropology has been enriched with *Wanderings in West Africa*, Burton's *Abbeokuta*, Reade's *Savage Africa*, and Speke's *Journal*. These are a few of the most important works which have distinguished the year, besides our own *Journal*, and a volume of *Transactions* published by the Ethnological Society. In France there have been many important Memoirs read before the Paris Anthropological Society; but perhaps the most interesting and important is an elaborate *Memoir on the Human Hair*, by our Honorary Fellow, M. Pruner-Bey. I am glad to be able to announce that this important paper is about to appear at length in the next number of the *Anthropological Review*. I need not dwell on the other labours of the Paris Society, because they must already be known to the Fellows. We are also much indebted to our zealous secretary for the detailed account which he gave us of M. Desnoyers' discovery respecting the very great antiquity of man.

In Germany a fourth volume of Waitz's *Anthropologie der Naturvölker* has just appeared, while the learned author informs me that he is busily engaged on the fifth and concluding volume. M. Carl Vogt has issued a work, entitled *Vorlesungen über der Menschen, seine Stellung in der Schöpfung und in der Geschichte der Erde*. Professor Pott has given a work, entitled *Anti-Kaulen, oder Mythische Vorstellungen vom Ursprunge der Völker und Sprachen nebst Beurtheilung der zwei sprachwissenschaftlichen Abhandlungen Heinrich v. Ewald's*; while M. Welcker and Professor Lucae have published valuable Memoirs. In Italy Dr. Nicolucci has published two interesting Memoirs, and the *savants* of Sweden are just uniting to bring out an edition of the lamented Retzius' collected works.

I trust that during the year a translation of Vogt will be delivered to the Fellows, together with M. Broca's admirable work *On Human Hybridity*, and M. Pouchet's clever little work *On the Plurality of Human Races*.

Ere long, also, I hope to see the remaining volumes of Dr. Waitz's work given to the Society, under my friend Mr. Collingwood's painstaking editorship. It would also be most desirable to have an English version of Retzius's works, when we can find a gentleman willing and able to undertake its translation from the Swedish.

During the past year very many and entirely different subjects have been brought under our consideration. On another occasion I may perhaps review minutely what we have done. We have had one adjourned meeting, to discuss a paper, which I brought forward, on the Negro. I am glad to be able to announce that all the objections which were raised to this paper will be printed at length in the next number of the *Journal*. Some bigoted or dishonest writers in the public press have attempted to identify my opinions on the subject with those of the

Society. I need not attempt to reply to such a contemptible and groundless charge. But lest such an impression should exist in the mind of any intelligent person, I would just recall your attention to the fact that during the past year our Society has issued one of the most learned and forcible books ever published in this country on the other side of the question. Although, on some material points I differ very considerably from the views of Professor Waitz, I am none the less sensible of the value of his work to Anthropological students. I hope in future that the council will be guided entirely, in their selection of works for translation, by a desire to introduce useful books to the student, quite irrespectively of the views of the author. I trust, however, that no man of education will ever think of confounding the works published by the Society, or any paper read before us, as being in any way the view of the Society. If such opinions generally prevailed, there would be an end to all scientific discussion and liberty of thought. Such views, therefore, must either be the result of ignorance or of wilful misrepresentation; and when we see who makes these charges, or where they are made, we shall be enabled to judge from which cause they proceed.

I am glad to say that during the past year we have not wasted our time in discussing the origin of mankind. That subject is not ripe for our discussion, nor will it perhaps be for many years to come. There are very many subjects of the highest importance which we must decide before that problem can be solved.

There appears to me to be some subject which it would be well to occupy our attention during the ensuing session. In the first place, our knowledge of the geographical distribution of the ancient races of Man seems to me to be very defective, and I will suggest a profitable subject of inquiry—the Ethnography of the known world at the time of Herodotus. Is the distribution of the chief races the same now as then? Such a problem can alone be solved by the different branches of science which compose the great science of Anthropology. Let some Fellow also do for England what M. Paul Broca has done so well for France, and write us a Memoir on the Ethnology of England,—a subject on which, strange to say, we have at present no reliable information. At the beginning of the last session we appointed a committee to report on the terminology of Anthropological Science, but no report has been rendered, and it must be a matter of serious consideration with the next council of the Society whether it will be of any utility again to appoint such a committee. I would suggest that it would be desirable, if we again appoint a committee, that we should invite our sister Society in Paris to aid us in this important matter. As our parent society we have a right to look to her for aid, and I am sure we shall not look in vain; for during the past year we have had too many proofs of the good fellowship and friendly feeling of all the officers of that Society, as well as from other members. M. Quatrefages, the accomplished President, has kindly made frequent communications of his scientific labours, while M. Paul Broca and M. Pruner-Bey have most obligingly given us the continual benefit of their valuable services. We feel

that great benefit will accrue to science by thus working together, and eventually I hope we shall be able to make arrangements for an exchange of the use of our wood-cuts and lithographic plates.

And now, gentlemen, I have taken up so much of your time that I must not detain you much longer. I have briefly traced our past history, and what is the future in store for us? This will entirely depend on ourselves. If I do not mistake the signs of the times, however, a glorious future awaits our Society. The rapid increase of our numbers shows how well our objects are appreciated, and gives hope that at last the science of mankind shall indeed be studied with zeal and earnestness. The Geological Society, on which we have formed our rules, gives us a noble example of what may be done by real and zealous workers. Is there anything to prevent the Anthropological from becoming at least equal to the Geological Society? On the contrary, our science must ultimately be not only the most interesting, but also the most important. It is frequently the habit of scientific men to exaggerate the importance of their own special study to the detriment of other branches of knowledge; but do I exaggerate when I say that the fate of nations depends on a true appreciation of the science of anthropology? Are the causes which have overthrown the greatest of nations not to be resolved by the laws regulating the intermixture of the races of man? Does not the success of our colonisation depend on the deductions of our science? Is not the composition of harmonic nations entirely a question of race? Is not the wicked war now going on in America caused by an ignorance of our science? These and a host of other questions must ultimately be resolved by inductive science. The dreams of philosophers or of fanatics must all disappear before the light of true science. I well know we are far, very far, from being able to give decided answers to any of the questions I have suggested. But we see that all these questions must be resolved by the students of mankind. France has her professors of anthropology, and why not England? Geologists give medals to their successful students, and why should not anthropologists do the same? The Royal Society has its lectureships, and what is wanted but a good example, that we should have here established lectureships for the different branches of our science?

Some may consider these views visionary, but surely what is possible with one society is also possible for another. All we want now are workers who are conscious of the magnitude and importance of their science, and who are determined to go on with their work of accumulating facts and making deductions simply from these facts, entirely regardless of what conclusions they may arrive at.

For myself, I am but too conscious of my entire inability properly to discharge the high office of President to such an important Society. My time and talents—such as they are—are, however, at the entire disposal of the Fellows of the Society, in any capacity in which they may be found most useful, until this Society is in the flourishing state desired by its best friends.

Mr. S. E. COLLINGWOOD moved, "That the thanks of the Society be given to the President for his Address, and that it be printed;" which was seconded by Mr. TRAVERS, and carried unanimously.

Mr. G. WITT moved, "That the thanks of the Society be given to the retiring members of Council: Edward Pick, Esq., and Dr. J. Hughlings Jackson, for their services in the past year;" which was seconded by Dr. LISTER, and carried unanimously.

Mr. JAMES REDDIE moved, "That the thanks of the Society be given the President, Vice-Presidents, Officers, and Council for their services in the past year." He congratulated the Society on its present position, and called especial attention to the modest manner in which Dr. Hunt had alluded to his own labours, which had tended so materially to the service of the Society. He hoped that care would be taken that the *Anthropological Review*, which in one sense might be regarded as the child of the Society, although it was out in the world by itself, would be made as uniform in appearance as possible with the publications of the Society. He had much pleasure in moving this resolution, which, he felt certain, would be unanimously accepted.

Mr. J. SMITH seconded the resolution, which was carried unanimously. Dr. HUNT, Mr. CARTER BLAKE, Mr. J. FRED. COLLINGWOOD, Mr. A. HIGGINS, and Mr. R. S. CHARNOCK, briefly acknowledged the honour conferred upon them.

Mr. BENDYSHE moved, "That the thanks of the Society be given to the Auditors," which was seconded by Mr. A. RAMSAY, Jun., and carried unanimously.

Mr. S. E. COLLINGWOOD, on the part of Mr. G. BYHAM and himself, briefly acknowledged the vote.

The Scrutineers brought up their Report, when it was announced that the following gentlemen were elected Officers and Council for the ensuing year:—*President*, Dr. James Hunt, F.S.A. *Vice-Presidents*, Captain Richard F. Burton; Sir Charles Nicholson, Bart.; the Duke of Roussillon. *Secretaries*, C. Carter Blake, Esq.; J. F. Collingwood, Esq. *Foreign Secretary*, Alfred Higgins, Esq. *Treasurer*, Richard S. Charnock, Esq. *Councillors*, T. Bendyshe, Esq.; W. Bollaert, Esq.; S. E. Collingwood, Esq.; Dr. George D. Gibb; H. Hotze, Esq.; J. Norman Lockyer, Esq.; S. E. Bouverie Pusey, Esq.; W. Winwood Reade, Esq.; George E. Roberts, Esq.; C. R. des Ruffières, Esq.; Dr. Berthold Seemann; W. Travers, Esq.; W. S. W. Vaux, Esq.; George Witt, Esq., F.R.S.

Mr. L. OWEN PIKE moved "That the thanks of the Society be given to the Scrutineers;" which was seconded by Mr. PETHERICK, and carried unanimously.

Mr. H. J. C. BEAVAN returned thanks.

Mr. CARTER BLAKE wished to call the attention of the Society to the state of the library, which now contained many most valuable works, and he hoped when a catalogue should be prepared, and when all the books which were in the library were properly stamped, the Fellows would enjoy the privilege of borrowing books under certain regulations. The especial object of his present remarks, however, was

to call the attention of the Society to the most valuable donation which Dr. Hunt had presented, consisting of 119 volumes, chiefly on African travel. This would form the nucleus of a library which would eventually prove of the highest value to Fellows, and he had much pleasure in moving "That the best thanks of the Society be given to Dr. Hunt for the liberal and valuable donation which he has presented to the Society's library."

Mr. G. WITT seconded the motion, which was carried by acclamation.

Dr. HUNT, after thanking the Society, said that he had long felt the necessity that anthropologists should possess a good reference library, and that it gave him great pleasure to assist in its formation. He hoped that other members would feel an equal interest in the subject. The Royal Society of Literature had offered a desirable suite of apartments for a library and museum, and he hoped that the increase of members during the next few months would enable the Council to accept this offer.

The PRESIDENT then declared the proceedings to be at an end.

JANUARY 19TH, 1864.

JAMES HUNT, ESQ., PRESIDENT, IN THE CHAIR.

The minutes of the previous meeting were read and confirmed.

The following Fellows were elected: William Easse, Esq.; Henry Butler, Esq.; Philip Lybbe Powys Lybbe, Esq., M.P.; Robert C. Marsden, Esq.

The Extinction of Races. By RICHARD LEE, B.A., F.A.S.L., M.R.C.S.

The rapid disappearance of aboriginal tribes before the advance of civilisation is one of the many remarkable incidents of the present age. In every new country, from America to New Zealand, from Freemantle to Honolulu, it is observable, and seems to be a necessary result of an approximation of different races, peculiar, however, in degree, at least, to this portion of the world's history. It has been estimated that the Hawaiians have been reduced as much as eighty-five per cent. during the last hundred years. The natives of Tasmania are almost, if not quite, extinct. The Maories are passing away at the rate of about twenty-five per cent. every fourteen years, and in Australia, as in America, whole tribes have disappeared before the advance of the white man.

Looking back into history, it would appear that such circumstances have not always been the consequence even of enduring oppression, still less of civilisation. Two millions of the Coptic race still testify to the inability of the ancient Eastern powers to destroy all remnants of the people they subdued. Egypt numbers a vast crowd of the lineal descendants of those men who fell before the Persian tyrant two thousand years ago; and, to come nearer home, the Celts, the Britons,

and the ancient Gauls, have a large host of worthy representatives upon their own soil.

Nowhere has the disappearance of a native race been more complete in modern times than in Tasmania, and although, no doubt, the most relentless butcheries were at one time practised in that colony, yet, for many years past, the aborigines have been under the immediate protection of the government. It would be impossible now to determine accurately the extent of the loss that has taken place, but it may be reached approximatively. In 1815 the aborigines of Van Diemen's Land were estimated at 5000, and this was probably a lower calculation than might have been justified. Five years later so great was the slaughter practised by the early settlers, that this number had become reduced to 340, of whom 160 were females. In 1831, the year in which they were invited to place themselves under the protection of the local authorities, after these same authorities had sought and failed to destroy them by a military force, there were but 196; and their numbers continued as rapidly to decline. In that year fifty-four were sent to the establishment devoted to them at Flinder's Island; in 1832 sixty-three more gave themselves up; and in the three following years eighty-nine were added to the group. This comprised the native aboriginal population of the island at the time. But during the five years thus included, seventy-three had died on the station, so that government protection did not lessen the mortality. In 1847 the whole of the party were removed from Flinder's Island to an old convict station on the shores of D'Entrecasteaux's Channel, to the south of Hobart Town; there were then only forty-seven, and of those but thirteen men. In 1855 the numbers were further reduced, and the once numerous tribes of Van Diemen's Land had only sixteen representatives. Of these, two were sixteen years of age, and the rest varied from thirty to fifty-five.

This remarkable result cannot be attributed altogether to the low condition of the Tasmanian Aborigines, or to the cruel treatment of the European settlers. A similar process of extinction is even now taking place in New Zealand, notwithstanding the thinness of the white population, and the superior character of the Maori race; and so steadily is this going on, that before the end of another hundred years the aboriginal New Zealander will, in all probability, have become extinct.

When missionaries first went out to New Zealand, the native population was variously estimated by them at from 100,000 to 140,000; but these estimates were necessarily made under considerable difficulties and probably never exceeded the truth. The first official census was not taken till 1858, and in that year the number was found to be hardly more than 56,000.

From this it is evident that there are some causes in operation to produce an extinction of certain races which at present cannot be clearly defined. The average mortality among them is greater than among most civilised nations; but in addition to that, and to the diminished reproduction of the species, there has been shown to be an inequality of the sexes among the adult population in an inverse ratio to that usually obtaining.

Out of several tribes, numbering nearly 40,000 persons, it has been ascertained that the proportion of males to females under fourteen years of age, was as 5·974 to 4·860, and above fourteen it was as 16·443 to 11·989.

These facts open up an interesting field for inquiry, both to the philanthropist and the philosopher. It is startling to observe the sudden disappearance before an advance of civilisation of people who have multiplied and lived for ages upon lands now for the first time occupied by the white man. Nor is the circumstance divested of any of its interest, when it is made tolerably evident that other than purely artificial causes are operating to produce such a result. The introduction among aboriginal races of some European diseases, and of injurious habits—intemperance and the like—as well as a directly increased mortality, due to an antagonism between the white and the coloured population, are among the leading artificial causes; but none of these will account for the paradox that exists in respect to the inequality of the sexes, the unusual diminution of females, and the increase to such an enormous extent of unproductive marriages. For an explanation of all this we must look deeper; and it is more than a question whether at the present time anything like a satisfactory explanation can be offered.

There is, however, one condition into which native tribes are brought through contact with civilisation that has hitherto been overlooked, but which the writer has observed to be frequently productive of fatal effects among tribes where the observations have been chiefly made. It is well known, for example, that the Australian aborigines, although constantly exposed to the weather, are exceedingly susceptible to cold. Before a southerly wind they crouch under every cover they can find, the insufficient quality, as well as quantity of their food, offering no protection to their system against the vicissitudes of temperature, which, in that part of the world, are often very great. The influx of Europeans has enabled them, though to a limited degree, to procure articles of clothing or blankets, the value of which they at times thoroughly appreciate. But the first warm day sees all these things thrown aside, and it not unfrequently happens that fever and other diseases are actually produced through the careless use or disuse of warm coverings. Deaths arising from this cause are now of frequent occurrence; the system which, in its natural state, was prone to suffer from changes of temperature, being still more liable to injury when those changes are rendered greater through the improper use of clothes.

As an almost abstract question for discussion, it may be suggested whether this disappearance of aboriginal tribes may be taken as a type of what might happen at a future period of the world's history—at that period which some have even now conceived to be probable, when the present population shall have to give place to an order of beings superior to the now dominant race of mankind in all those faculties and endowments which most tend to elevate humanity. Glancing over the surface of the globe, and pausing for a moment to contemplate the mighty changes that have been wrought during the

last half century in the population of different regions, such a suggestion may not seem so very improbable. Almost everywhere, save in the older and more civilised nations, we see, as it were, one world of people passing off the stage, and another, and a more highly developed world coming on. In a few years the surface of the earth will be utterly altered; whole races, which now rule supreme over immense tracks, will have passed away for ever, and civilisation will turn to better account the lands that have so long been the undisturbed home of the "black fellow;" a new era will be inaugurated, and human responsibilities vastly multiplied.

Such being a process now in course of completion, the question proposed becomes at least an interesting one. Europe is now the centre from which this flood of civilised life is overspreading the globe, and our own Anglo-Saxon race constitutes one of the chief elements which are sweeping before them every vestige of earlier inhabitants. Such a world-wide reform has never before occurred, but may it not, at some far distant date, occur again? Europe, now pre-eminent in all the attainments of man—the home and the cradle of the noblest arts and the profoundest sciences, may have for her destiny to repopulate the globe, and then to tarry in her onward career. It may be the lot of nations now springing into existence at the antipodes, to outstrip her in the pursuit of knowledge, and when ages shall have passed away, to supply, in their turn, a nobler race, a more perfect humanity, to the lands which now rank foremost in civilisation. The New Zealand offspring of the imagination of our great essayist may be no unreal creation of the imagination, and England may yet be indebted to her descendants in the South for a people who shall as far surpass her present occupants as the civilised Englishman of this day excels the half barbarous Maori.

To speculate upon this, however, is of little value so far as affects the attainment of any satisfactory conclusion. Perhaps it is a pity to spoil so fine a field for the exercise of the imagination, to break the spell which builds up in the mind attractive hypotheses of the world's future history, and to destroy what might serve as an analogy in thus reasoning. But, viewed as a bare fact, and taking it in connexion with what we know of the previous history of man from earliest ages to the present time, there appears nothing, I think, in this extinction of races to justify us in regarding it as a type of anything similar to follow at some remote period in the future.

Between the white and the coloured populations of which we speak there are not even degrees of civilisation. The man who now wanders free through the unknown wilds of Australia represents nothing. Not only has he not advanced in moral development since the first formation of his species, but he has actually retrograded. There are not even the traditions of past renown among his ancestors to arouse those inspiriting emotions which should stimulate him to preserve the existence and identity of his race; and even where, as in the Maori or Polynesian, a certain pride of birth and dignity still cling, there is no bond, certainly not one of nationality, to secure them from the inevitable effects which greater moral power, under such circum-

stances, seems intended to produce. Rather, then, we must regard it as only an illustration of humanity, in its crudest form, shrinking and passing away before a phase of humanity enlightened with intelligence, and endowed with vast intellectual superiority. It is the lesser light destroying the darkness, and though a greater brilliancy should ages hence appear, it will still continue to burn, mellowed and made more luminous through the accumulated experiences of time.

*On the Extinction of Races.** By T. BENDYSHE, Esq., M.A., F.A.S.L.

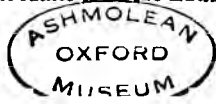
THE continent of America has now been discovered about four hundred years. The groups of the islands of Polynesia or Oceania about two hundred years. The continent of Australia, and the neighbouring islands of New Zealand, Tasmania, etc., about a century.

Most, if not all of these countries, on their discovery by the Europeans, contained a larger number of aboriginal inhabitants than they do at present. Hence it has been concluded, with, I think, some unphilosophical haste, that the numbers of the aborigines must in all these countries continue to decline until none of them are left. And even before we can call the extinction of races a fact, theories of various kinds have been started to account for what has never yet taken place, at least in a sufficient number of instances to determine whether it is an exceptional or a strictly natural phenomenon.

There can be no reason for assuming in the outset that the laws of population are different in different parts of the globe. This may seem an unnecessary truism; but had it been borne in mind by many writers on this subject, much idle speculation would have been avoided. We must not, however, be too hard upon the earlier observers of the aborigines.

It is only recently that the laws of population have been understood or even studied in our own country. The treatise of Malthus, from the publication of which are to be dated all sound views upon the subject, appeared in 1798. He showed that population has a tendency to increase in a geometrical ratio; and the obstacles which prevent it from actually so increasing, except what he calls moral restraint, which is peculiar to civilised nations, occur equally in all parts of the world. These may be summed up under the heads of promiscuous intercourse, artificial abortion, infanticide, wars, diseases and poverty. In every country some of these checks are with more or less force in constant operation; yet, notwithstanding their general prevalence, there are few states in which there is not a constant effort of the population to increase beyond the means of subsistence. During such seasons as these, the discouragements to marriage and the difficulties of rearing a family are so great, that population is nearly at a stand. After some time, however, either from the actual diminution of the population, or the increase of the means of subsistence, the restraints to population are in some degree lessened, and after a short period again the same retrograde and progressive movements are repeated. This sort of oscillation, says he, will not

* Perhaps the title ought rather to be the Extinction of Populations.



probably be obvious to common view, and it may be difficult even for the most attentive observer to calculate its periods.

“In savage life it is little to be doubted that similar oscillations take place. When population has increased nearly to the utmost limits of the food, all the preventive and positive checks will naturally operate with increased force. Vicious habits with respect to the sex will be more general, the exposing of children more frequent, and both the probability and fatality of wars and epidemics considerably greater; and these causes will probably continue their operation till the population is sunk below the level of the food, and then the return to comparative plenty will again produce an increase, and, after a certain period, its further progress will again be checked by the same causes.”

The correctness of the Malthusian theory is now so universally admitted, that I shall not waste any more time in its enunciation. The question we have to consider is whether it applies in full force to those parts of the world where the aborigines appear to be dying out, and who therefore may be merely undergoing one of those retrograde periods of numerical diminution which are common to all races of mankind, or whether there is some particular cause superadded to those enumerated by Malthus, which will continue to operate until its victims cease to exist, and the exact nature of which it is at present impossible to explain.

The latter opinion is the one perhaps most commonly held, and the particular cause is generally asserted to be “the will of Providence.” Thus, Professor Waitz, in the translation made by our learned secretary, Mr. Collingwood, says,* “According to the teaching of the American school, the higher races are destined to displace the lower. This extinction of the lower races is predestined by nature, and it would thus appear that we must not merely acknowledge the right of the white American to destroy the red man, but perhaps praise him that he has constituted himself the instrument of Providence in carrying out and promoting this law of destruction. The pious manslayer thus enjoys the consolation that he acts according to the laws of nature, which govern the rise and extinction of races. Such a theory has many advantages: it reconciles us both with Providence and the evil dispositions of man; it flatters our self-esteem by the specific excellence of our moral and intellectual endowment, and saves us the trouble of inquiring for the causes of the differences existing in civilisation.”

And Mr. Lang in nearly the same words tells us,† “It seems, indeed, to be a general appointment of Divine Providence, that the Indian wigwam of North America, and the miserable aborigines of New Holland, should be utterly swept away by the floodtide of European colonisation; or, in other words, ‘generalising, as writers of this stamp do, as they go’, that races of uncivilised men should gradually disappear before the progress of civilisation, in those countries that have been taken possession of by Europeans.”

* Waitz, p. 351.

† History of New South Wales, 1852, vol. i, p. 26.

These opinions respecting the laws of population were held in all their force by the early English, Spanish, and the Portuguese colonists. That by some divine interference the aborigines melted away before them, whilst their own increase was by the same power carefully provided for, was an article of faith, and is so still amongst almost all the descendants of Europeans. Nor was such a belief at all wanting amongst the aborigines themselves. One of the principal causes of the success of Cortes in Mexico—indeed, so great a cause, that probably without its occurrence all his energy and abilities would have been in vain—was the firm conviction of Montezuma, long before the appearance of Cortes, that the time was at hand when he and his race were to give way to another and a more powerful people. Had the American monarch been aware of the resistance which natural laws would oppose to the dispossession of his people from their native soil, and depended upon them rather than on the prophecies of his priests or the terrors of his gods, Mexico might not even at the present moment have had to beg for an emperor from the house of its original conquerors. There are not, however, wanting, persons to take a more reasonable view of the subject. Amongst others, first, a most experienced traveller; and, secondly, one of our first living statesmen.

Mr. Stokes says,* “History teaches us that whenever civilised man comes in contact with a savage race, the latter almost inevitably begins to decrease, and to approach by more or less gradual steps towards extinction. Whether this catastrophe is the result of political, moral or physical causes, the ablest writers have not been able to decide; and most men seem willing to content themselves with the belief that the event is in accordance with some mysterious dispensation of Providence. For my own part I am not willing to believe that in this conflict of races there is an absence of moral responsibility on the part of the whites; I must deny that it is in obedience to some all-powerful law, the inevitable operation of which exempts us from blame, that the depopulation of the countries we colonise goes on. There appears to me to be the means of tracing this national crime to the individuals who perpetrate it.”

The present Lord Derby, in a dispatch, dated December 20th, 1842, and addressed to the Governor of Victoria, says, “I cannot acquiesce in the theory that they, the aborigines, are incapable of improvement, and their extinction before the advance of the white a necessity which it is impossible to control.”

The course I propose to take in pursuing the investigation will be this. I shall first point out countries where the white man and the native live and increase side by side. I shall then consider those cases where it is alleged that the mere contact of the white man has ensured the speedy extinction of the indigenous population, and I hope to prove that this conclusion has been arrived at upon very insufficient data.

And then I will examine the causes which have brought about the

* Stokes, vol. ii, p. 463.

diminution of the populations of New Zealand, Australia, and North America; in which countries alone, with the exception of a few limited areas, the fact of any considerable decrease of the indigenous races has been proved to be taking place. I believe it will be found that these causes are in no respect different from those which have produced the same effect in other parts of the world at various periods, and are quite independent of any considerations of superiority or inferiority of race. And I think I shall be able to establish as a concluding one this proposition :

That races have only been extinguished, or brought to the verge of extinction, when it has happened that the soil on which they subsisted has been occupied by other races at the same time that their number was in process of diminution through the operation of the same causes to which all races are periodically subject.

In the Philippine Islands, which have been under the dominion of Spain about three hundred years, the native population is found under favourable circumstances to increase. So also do the Spaniards; and though their number is not large, owing to the disposition to return home as soon as a fortune is realised, yet the excess of births over deaths in Manilla is such, as to prove that the ordinary law of increase is not in any way interfered with by the climate, or contact with the natives. They, indeed, do not increase quite so fast, but the difference is small. In other parts of the Archipelago, the increase of the population, since the missionaries have been able to observe it, seems to have been very considerable: thus, in 1736, that of Panay numbered 67,708 persons, and by the last census, 527,970, of whom only a very small number were Spaniards. Here, therefore, the theory of the necessary extinction of inferior races is manifestly at fault.

No colonies have been planted in Polynesia, unless we except the recent establishments of the French in Tahiti and New Caledonia, and of the Spaniards in the Ladrone Islands. The soil, therefore, of most of the innumerable islands of Oceania remains in the hands of the indigenous races; still it has been said by many writers that their numbers are gradually but certainly diminishing. After a careful comparison of the statistics on this point, I have come to the conclusion that it is not so. That is to say, that although in some instances, no doubt, an absolute decrease within a certain number of years can be proved, yet the same thing has taken place in other cases, and has lately been succeeded by an increase; and there is no reason why the ordinary but somewhat violent oscillations which take place among savage nations should not be considered sufficient to account for all the phenomena hitherto observed.

Thus at Nine or Savage Island, the population has lately risen from 4,700 at the census taken by the Samoans, to 5,000 in 1862.

In the Friendly Islands, it is asserted, says Erskine, that the abandonment of polygamy, combined with other causes, has tended of late to an increase of the population. Capt. Wilkes estimated their numbers in 1839 at 18,500; but the missionaries in 1847 gave them as 50,000. Erskine thinks this calculation excessive; but admits that in all the islands he visited, the proportion of children to the

adult population seemed to be large, and that there was no prevailing epidemic.

And of the Fiji Islands, he says,* "We heard none of the pathetic lamentations from the Fijians in which the New Zealanders and other Malayo-Polynesians often indulge, on the subject of the gradual melting away of their numbers."

And of the Loyalty Islands.† "The population of these cannot be numerous, as they are generally barren and deficient in fresh water, wants which occasion a constant emigration to New Caledonia." The fact of these islands supplying a constant stream of emigrants is quite enough to show that no extinction of the race is going on there.

The history of the Samoan Islands, if it could ever be recovered, would probably form a most instructive commentary on that chapter of Malthus on "The Oscillations of the Population amongst Savage Nations." That the natives were once much more numerous admits of little doubt; possibly as many as 100,000. But that they have systemically diminished since their discovery in 1678 is certainly not the case. In 1848 the excess of births over deaths during the preceding six years was estimated at six in the Manua group; whilst at Tutuila the numbers were estimated in 1849 at 300 less than ten years previously. Erskine in that year considers the number in the whole Archipelago to be gradually but slowly diminishing, which he seems to attribute principally to the spread of influenza and whooping-cough. But if the latest observer of all be correct, the natives must, like other races, have surmounted the fatal effects at first caused by these disorders; for, says Hood, of the year 1862, "the population is thought, by those likely to form a correct opinion, to be rather on the increase of late years."

The Sandwich Islands and the Society are the principal examples brought forward to prove the theory of the inevitable disappearance of what are called the inferior races.

The fact that in the former the population has in historical times very materially diminished admits of no doubt. But in the first place there is as little doubt that it was on the decrease when they were discovered by Cook in 1778. So that even at starting it is manifest that the contact of the whites with the natives must be far from being the sole cause of the depopulation.

Two hundred thousand would be probably the correct computation of the Hawaiian population in 1778-9. From Cook's time to the present, the decay has been continuous and rapid. At the time of Mr. Ellis's visit (1823) the number on the whole of the islands was estimated at from 130,000 to 150,000 souls, of which 85,000 lived on the great island Hawaii. A rapid depopulation had certainly taken place in the previous fifty years. He assigns as causes wars, pestilences, infanticide, and the increase of depravity and vice; all causes enumerated by Malthus as taking place amongst all races at different times; certainly not excepting European.

When Mr. Hill was in the islands (1849) the population had fallen

* P. 271.

† P. 18.

to 80,000. They were then suffering from measles, influenza, and dysentery; by which their loss was estimated at 10,000.

By the census of 1853 the population was 71,019; By the census of 1860 the population was 67,084. But to these must be added 1,000 Hawaiians who were absent from the islands at the enumeration, which would bring the numbers up to 68,084, being a loss of 2,935 in seven years. "But," says Hopkins, "it is believed that the downward progress is at present at a stand, and that there is a probability of the next census showing some small augmentation of numbers.

And again, "Reduced in numbers to little more than 70,000, the population seems to have touched its lowest point. Some of the causes of destruction are diminished."

Amongst these causes the ill-regulated zeal of the missionaries is perhaps the most efficient. The government has, however, been wise enough to withstand their efforts; "it feels its hands strengthened by the approbation of enlightened observers, and by the progress already made in decreasing the power of a scourge which had been steadily decimating its subjects."

The Sandwich Islands must then be considered as a spot where an interesting experiment is being tried. Had any European nation, under the plea that the inhabitants were not so numerous as they had once been, and that the islands were capable of supporting a much larger number, proceeded to plant a colony, and seize such a portion of the soil as they thought fit, all hope of ever recovering their numbers must have been cut off from the Hawaiians. Restricted to such an area as might seem enough to support the numbers then existing, they could not of course have had any opportunity of demonstrating that they were no exception to the natural law of increase, provided a sufficient time were given for the alteration of habits necessary on entering new conditions of life. They have been the subject of observations for somewhat less than a century; too short a time, surely, to pronounce so positively that the state they were found in was necessarily one from which they had no power of recovering.

During about the same period of time the population of Spain once declined quite as rapidly. At the beginning of the seventeenth century the population of Madrid was estimated to be 400,000; at the beginning of the eighteenth century less than 200,000. Seville possessed in the sixteenth century upwards of 16,000 looms, which gave employment to 130,000 persons; in the reign of Philip V there were only 300. In 1662 it was stated that the city contained only a quarter of its former number of inhabitants. The decay of Burgos was equally rapid. During the latter half of the seventeenth century matters became still worse. The capital was in danger of being starved. All over Spain the same destitution prevailed. The fields were left uncultivated; vast multitudes died from want and exposure; entire villages was deserted, and in many of the towns upwards of two-thirds of the houses were by the end of the seventeenth century utterly destroyed. And finally, the Spanish explanation of all this is precisely the same given by those who profess to see a natural dis-

pensation of Providence in the decrease of the Hawaiians. "God decreed the decadence of the monarchy of Spain from the year 1621."*

The causes of this depopulation were neither war nor bad harvests; but simply indolence, bad government, and the want which was the natural consequence. Had any European race insisted upon seizing a considerable portion of Spanish soil, the nation was far too weak to resist, for it was on the point of being re-conquered by the Moors, and we should not now be disposed to admit that Spain had ever possessed the power of recuperation it has recently displayed. Nearer home again:—

"In the year 1680, so many families in Scotland perished from want, that for six miles, in a well inhabited extent, there was not a smoke remaining. Of sixteen families on a farm, thirteen were extinguished during a few bad years; and on another, out of one hundred and sixty-nine individuals, only three families survived. The inhabitants of the parish in general were diminished by death to one-half, or, as some affirm, to one-fourth of the preceding number."†

The actual depopulation of Tahiti is also undeniable. Whether the number in 1774 was 240,000 or 120,000, according to Cooke or Forster; whether in 1797 it was 50,000 or only 16,000, according to the missionaries or Capt. Wilson; there is enough evidence to establish the fact of a decline since its earliest discovery. But this decline is far from having been continuous. In 1803 the population was estimated at 5,000; and though this was no doubt too low, still, as just before the arrival of Capt. Wilkes a census had given 9,000, we may conclude some slight increase had taken place in the interval. And he says: "The population for the last thirty years has been nearly stationary; the births and deaths are now almost exactly in equal number. One of the oldest of the missionaries informed me he could perceive no change in their apparent numbers." This, too, is the more remarkable, because the island was then frequently left without a medical man at all. By the last account of M. Cuzent, the census of 1857 gave a little over 6,000 for Tahiti alone. Cuzent, however, gives as reasons for the falling off of the population, wars, epidemics, and a want of attention to the rules of health, which would produce the same effects in any part of the world. So there is no ground here for calling in any mysterious cause to account for a phenomenon which has occurred in all parts of the world at different times. In New Zealand, however, and in Australia, the numbers of the aborigines have certainly much diminished since the arrival of Europeans.

But the question we have to deal with is, not the absolute diminution, but the inevitable extinction of these races. The property of the native tribes of New Zealand in their lands has been acknowledged by the British Government; and they have shewn themselves capable of a certain amount of civilisation. It might be supposed,

* These statements about Spain are taken from Buckle, vol. ii.

† Malthus, vol. i, p. 465.

therefore, that after a time the diminution incident to a change of habits and the introduction of new diseases would cease, and a gradual increase, in proportion always to the quantity of the soil retained by the natives, would take place. And it is the opinion of some of the missionaries that the population is beginning to increase, and that in some parts, Taranaki for instance, the number of births already exceeds the number of deaths. Lately, again, the English have shewn a determination to acquire by some means or other additional tracts of land whenever they want it. Any considerable loss of actual soil must be followed by a corresponding diminution of population; but this would be equally true of the English, were any continental nation to deprive them of one-half of their island. Nor are the natives themselves at all unaware of the necessity of retaining the soil if they wish to exist. "Land is the ewe lamb of the New Zealanders," says their proverb, "why, then, should the white man too eagerly desire it?" There is, therefore, nothing in the history of New Zealand, but rather the contrary, to prove the truth of the principle I have laid down, that races can only be extinguished by occupying the soil on which they exist; and that the same process would extinguish any race, whether superior, equal, or inferior to the invading one.

Nor in Australia has it yet been shewn that the population diminish much more than in proportion to the occupation of the soil. It is well known that the tribes of the interior are much stronger and more intelligent than those on the coast, who are, or rather were, in fact, driven there as the weaker and degenerate members of the Australian race.

Even in the savage view taken by ordinary writers of these unfortunate people, whilst some unknown cause is called in to account for what interest alone prevents them from understanding, the very principle contended for is unconsciously admitted. The article of the *Encyc. Metrop.* on Australasia runs thus:

"Some morbid philanthropists, who have formed associations for the preservation of these races, attribute their extinction to the aggressions by fire and sword upon them by the settlers, and the deadly diseases they introduce. Although to some extent this may be the case, still there is a *more powerful influence* at work, which ultimately will cause the inferior race to be swallowed up by the superior. . . . The tribe that inhabited the country around Port Jackson and Botany Bay, which Governor Philip on his arrival found to number about 1,500 individuals, is now extinct. The last of its members died in 1849, little more than sixty years after the occupation of their lands by the Anglo-Saxon. These facts are startling, and demand further investigation."

But how or on what were these people to live *after* their lands were occupied? The time, too, sixty years, is clearly just what might have been expected—the life-time of the existing generation, which was cleared.

We are accustomed to consider the United States as exhibiting the leading example of a constant and indefinite increase of population;

but even there population is limited by the extent of soil and the means of subsistence. Some remarks made in the official report on the last census, are no less applicable to the aborigines of Australia than to the inhabitants of the eastern states of North America.

"Thus far in our history no state has declined in population. Vermont has remained nearly stationary, and is saved from a positive loss of inhabitants by only one-third of one per cent. New Hampshire, likewise, has gained but slowly, her increment being only two and a half per cent. on that of 1850. The old agricultural states may be said to be filled up, so far as regards the resources adapted to a rural population in the present condition of agricultural science. The conditions of their increase undergo a change upon the general occupation and allotment of their areas. Manufactures and commerce then come in to supply the means of subsistence to an excess of inhabitants beyond what the ordinary cultivation of the soil can sustain."*

Even the Australians, however, do not diminish quite so fast as is frequently asserted. In the last census (1861) of Victoria, the paragraph relating to the aborigines says :

"The returns show an apparent falling off in the number of aborigines. An account was taken of 1,694, of which 1,046 were males and 648 were females, as against 1,768 of both sexes in 1857. It is not pretended, however, notwithstanding the vigilance of the collectors, that all were enumerated on either occasion. The returns from another source, the Central Board for the protection of the Aborigines, testify to the ascertained existence of 1,860 in different parts of the colony in August 1861, or four months after the date of the census ; and it is believed by the members of that board that this number is rather under than over the mark. It is pretty certain, however, that their total number does not exceed 4,000."†

So that if we follow what is probably the best authority, there may have been a slight increase of late.

The last case to be considered is that of the North American Indians. We must take note, once for all, of the fact, that in the Indian statistics, prepared by order of the American government, the numbers are generally below the mark. And though the approaching extinction of the Indian race has long been prophesied, yet all these prophecies, so tedious in fulfilment, prove that the Indians are more numerous than was generally supposed, and that the great deserts offer more resources than was imagined ; and thus, after all, a great people are not as easily extinguished as a man ; it requires ages to crush it and annihilate it completely. No Indian tribe, says Domech, has ever yet been entirely extirpated. There is no difficulty in accounting for such diminution of the numbers of the Indians as has really taken place. War, famine, and diseases will account for all. There is no want of prolificacy in the women ; and however low a tribe may have been reduced by well-known causes, there are too many instances on record of an immediate increase under favourable

* Kennedy's Report on the Eighth Census (1861) United States, p. 3.

† Census of Victoria, 1861, Population Tables, part i, p. xiii, par. 39.

circumstances to allow of the justice of calling in any mysterious agency to account for the destruction of the race.

I am not concerned to deny that many tribes of Indians have nominally ceased to exist, or even actually been exterminated. My argument is not affected by the fact, if it be one, that the Natchez, the Shawanoes, the Delawares, Potowatomies, Seminoles, Kaskaskias, and several other formerly powerful tribes have been exterminated, or nearly so. Their kindred still survive in the Chippeways, the Sioux, the Mandans, the Comanches, the Omahas. These alone would be sufficient if the lands of North America were restored to them, to re-people the whole of the continent which was formerly possessed by their ancestors or kindred when it was discovered by the Europeans.

For the North American Indians form no exception to the general law, that population increases in geometrical progression. The Omahas may have lost two-thirds of their tribe by small-pox in 1838, but they have mostly from four to six children, and sometimes from ten to twelve. The Mandans may have been carried off from the same cause, with few exceptions, in 1837, but they have often as many as ten children. Two-thirds of the aborigines of the Oregon district may have perished by fever and the small-pox; but the women on the north-west coast are very prolific. Among the Chippeways, the average number of children is four. Among the Sioux sterility is rare; from three to eight children is the usual number, and no one remains unmarried.

The PRESIDENT said that there was no subject more important or interesting than the one brought before them in the two papers which had just been read. Mr. Lee thought that there were existing lineal descendants of the Egyptians, Celts, and Britons: and in a certain sense he was inclined to agree with him; he, however, believed that they were only to be found in their original dwelling places. He was glad to find that he was supported in the views, which were much contested at the time he brought them forward, of the non-acclimatative powers possessed by the races of mankind generally, and the lower races in particular. Mr. Bendyshe especially dwelt on the fact that it was removal from his native soil or territory which was the chief factor in the extinction of races; but the deleterious influence of change of climate has scarcely been noticed, nor has sufficient stress been laid on this fact. He argued that it was the removal from the soil which was the chief cause of extinction; but Mr. Bendyshe seemed to think the means of living were taken away, and that from this cause they ceased to exist. It was difficult to admit this, inasmuch as there were plenty of cases of tribes becoming extinct when every care had been taken of them; but in every case he knew of, it was when they had been taken from their native soil. The Tasmanians had been taken every care of, but it must be remembered that they were removed from their native soil and all sent to Flinders Island, where the care of the government did not at all lessen the mortality. Mr. Lee tells us that before another hundred years the New

Zealanders would become extinct, and he had frequently heard Mr. Crawford assert most positively that they would be extinct in twenty years. Those gentlemen were prophets, for they had no data on which either conclusion could be arrived at by inductive reasoning. The fate of the New Zealanders, and their extinction, depend altogether on unknown future events. Remove them all to one island for a few years, and should they not go off sufficiently fast, again another remove, he thought, would hasten the process. Mr. Lee tells us that, before the arrival of Europeans, marriages were more generally prolific. It was a difficult and much complicated subject to assign to each cause the part which it plays in such phenomena. Some writers had attempted to sneer at Count Strzelecki's observations respecting the aborigines of Australia not having children by natives after they had done so by Europeans. But there was a general truth in the assertion, although, perhaps, the reason given by that observer was not the real cause. We are told the natives are susceptible of cold; but how much of this is owing to the introduction of the pernicious habits of civilised life? As to the imaginative part of these papers, that a higher order of human beings were likely to appear, and that whole races which now reign supreme will have passed away, he would only say that such speculations were not founded on a shadow of scientific data. That races incapable of civilisation will pass away there was some little reason to suppose; but even this is by no means to be positively asserted. Nor was it worth while to waste time in discussing the dream of Gibbon or Macaulay respecting the New Zealander looking at the ruins of London. These speculations were only interesting as showing the profound ignorance of Anthropological science in men of genius and learning. Mr. Lee, towards the end of his paper, makes the most extraordinary assertion, that the Australian has "not advanced in moral development since the first formation of his species, but he has actually retrograded." Now he should much like to know from the author of this paper when the first "formation of his species" took place? and on what evidence or reasoning he bases his assertion, that the Australian has retrograded in his moral condition? Mr. Bendyshe has favoured us with a most philosophical and suggestive paper, in which, however, he did not mention many of the causes of the extinction of races. For instance, he contends that disease is a law of nature, but has omitted to tell us that all races are not subject to the same disease, and that a disease which may be most fatal to one race may be quite harmless to another. Nor has he mentioned the varying effects that spirituous liquors have on different races. Professor Kingsley has recently been advancing the opinion that the use of spirituous liquors amongst the aborigines of America is not one of the chief factors in their extinction, because spirituous liquors do not produce any decrease amongst the largest consumers of alcohol in the world—the Scotch and Irish. But the question of race is here entirely ignored. The large active brained European may take a certain proportion of stimulant with impunity and, indeed, benefit, but the same quantity to a smaller and less active brained race, would be fatal. Whilst admitting, with Mr. Bendyshe,

that there was no mysterious dispensation of Providence in the extinction of races, he could hardly consider that the causes of the decrease of races were the same all over the world. Some diseases are much more disastrous to savage than to civilised life—as, for example, syphilis, which has played such an important part in the extinction of savage races. We know nothing yet of the causes of the increase of one race, like the Irish, and the stationary position of another, like the French: we can only guess at the causes. Why is it that Ireland is so prolific as to be able to people a large part of the world? If the laws of the present are also the laws of the past, then we shall be obliged to conclude that Ireland is verily the long looked for cradle of mankind! Mr. Bendyshe enumerates the several causes of the extinction of population; but under what head does he include those cases of poisoning and man-shooting which have been carried on in Tasmania, Australia, and the Cape? In Queensland, half a tribe of blacks were poisoned by a present of arsenic mixed with flour. The Brisbane tribe of blacks, a few years ago, had 1000 fighting men, and now are nearly extinct. Six years ago there existed 1500 aborigines at Corroboree, and now not a fourth of that number exist. Nor can we include those cases of man-shooting under any of the categories mentioned by Mr. Bendyshe, for they must be classed under the head of wilful extermination. There could be no doubt that in the juxtaposition of the superior and inferior races, the latter will always become extinct if they attempt to compete with the civilised man. But when the savage is in subordination to the civilised, the extinction of the savage does not take place. Lord Derby, in 1842, was not able to admit that the aborigines of Australia were incapable of civilisation, which simply shows he knew nothing at the time he wrote of Anthropological science. Neither of the authors of the papers had made any distinction between the extinction of tribes and races. There could be no doubt of the extinction of tribes; but when we speak of the extinction of races or species, that was quite another question.

Mr. ALFRED R. WALLACE referred to the question of the effect of contact between the higher and lower races of man. Mr. Lee's paper gave undoubted cases of the extinction of races, and Mr. Bendyshe stated that there was no natural law operating to cause extinction of races except when the land was taken away. The possession of the land was the essential point; nobody imagined that the mere presence of the white man effects the extinction. The real question was, Does extinction follow when each of the races brought into contact acts simply in accordance with its own nature. Of course the white man takes the land; it is simply a question of whether the native can himself cultivate the soil. If he cannot, he must evidently decrease independently of the introduction of diseases or spirituous liquors, for the white man *will* cultivate and spread, and the land cannot support more than a limited number of inhabitants. Savage races are distinguished by the small amount of population subsisting on a given area of land; and the more savage a race is the more scanty is the population. The Australians are an instance in point. Of the

great diminution of many native races there can be no doubt, and there is not much difficulty in tracing special causes to which this is attributable. Suppose, for example, that in New Zealand, on the first appearance of the white man, the proportion of the sexes was equal. The immigrants were, of course, chiefly male, and unless New Zealand was different from all the rest of the world, they would take a certain number of the native women to live with them, and would thus destroy the balance which previously existed between the sexes. The native men would then be compelled to obtain wives, either by taking the women younger, or by having one woman common to several men. Either of these causes must, for well-known physiological reasons, occasion sterility. One great cause of the scanty population of countries occupied by savage tribes is the treatment of the women. In the lowest races the women perform the most laborious work, to the great prejudice of their fertility; and it is found that exactly in proportion as the women are relieved of their hard labour, and are thus enabled to devote more time and attention to their offspring, the population increases. Mr. Bendyshe had cited a number of cases where native populations are on the increase, though in contact with civilised man, but the cases given by him are exactly those where the proportion of whites is very small. In the Philippine and Fiji Islands, the number of Europeans is very few; there the population does not decrease; but in the Sandwich Islands, where the whites are numerous, the population is well known to have decreased immensely. He believed, therefore, that there were ample and real causes which must, whenever a very high and a very low race came into contact and competition, lead to the diminution and final extermination of the latter. The greater vital energy, the superior health, and more rapid increase of the European, would lead him, in all cases where the climate was congenial, to occupy the soil, and thus diminish the resources of the native inhabitants. The introduction of new diseases and of alcoholic drinks, of course produced their effects, and with the selection of numbers of the young and healthy women by the intruders, would inevitably lead to those results, more or less plainly visible, in America, Tasmania, New Zealand, and the Pacific Islands. The only thing that could save these lowest races was their becoming rapidly civilised. But civilisation was a slow process. It implied great organic and psychical changes in the race, which could only be brought about by slow steps in successive generations. A forced and superficial polish was not civilisation, and he believed, therefore, it was a mere question of time, and sooner or later the lowest races, those we designate as savages, must disappear from the face of the earth.

Mr. G. WITT, having resided in Australia, could affirm that there was no indiscriminate slaughter of the natives. He knew a case of a man who put arsenic in bread; but the man who did it was hanged for it. He was once at a dinner party where one of the guests said he meant to destroy some blacks who annoyed him, when Sir George Gibbs said to him, "If you do, I'll hang you." He knew of other men going out after the aborigines and

shooting them; but all these cases were done entirely against the wish of the people and government of the colony. He felt bound to say that everything was done by the government to protect the aborigines.

Dr. JAMES MURIE thought they were much indebted to the President for the distinction he had drawn between a tribe and a race. This was a great point. Leaving aside a definition of race, the question which was not decided, what types of mankind have increased or decreased? The Caucasian seems to have increased. The Jews exist as a race; but although he had been some time in Egypt, he could hardly decide whether the Egyptians exist as a race. He agreed with the President that tribes do become extinct, but he questioned the extinction of races.

Mr. J. REDDIE said, it must be borne in mind that both the Jews and Egyptians were civilised races, and that in the struggle for existence the civilised man was far superior to the savage. He agreed with the President respecting the influence of spirits, and believed that the injurious effect of ardent liquors greatly depended on the mental condition of the people. He admitted that the European was the superior race, and he could see no reason why the superior in intellect should not take possession of the land occupied by the inferior race.

Mr. S. E. B. BOUVERIE-PUSEY thought the great point to decide was, whether the savage races are capable of civilisation. He thought it quite certain that no savage race could exist by the side of a civilised race.

Mr. BENDYSHE in reply said, he did not perceive that any one has really contested the reason he had endeavoured to demonstrate to be the principal one in causing the diminution of populations. That the intercourse of the native women with the first colonists would be an assisting cause there can be no doubt. It comes, however, under the head of promiscuous intercourse, and its effects would not be perpetual. With the introduction of Englishwomen the practice would to a great extent cease. No one can deny that the force of a nation like Great Britain could be employed in such a way as to actually destroy all the inhabitants of the Polynesian Islands, if it was thought fit to do so. This was in fact actually done by the Spaniards on the Ladrone Islands, and virtually in Tasmania by ourselves. But such actions come under the head of war. The doctrine that races cannot be extinguished in their ethnic centres, held to a degree of extreme exaggeration by the late Dr. Knox, labours under the double disadvantage of not explaining what is meant by a race, or by an ethnic centre. Were it possible to apply the latter term to any tract of seaboard as the cradle of a race, it is clear that such a race would be driven by Europeans out of their ethnic centre first of all, and if the country was large, and not adapted in its interior for the white man, we should see such a race subsisting in its outliers long after its ethnic centre had passed into the hands of others. On the supposition that the ethnic centre of the Basques has long since been sunk below the Atlantic, we have a case utterly destructive of the theory.

The Basques live and increase like other people—in the extreme points whither, according to Dr. Knox, they took shelter in consequence of the destruction of their original habitations thousands of years ago. The same is true of the Polynesians, if it be true, as many suppose, that those islands are the sole remains of a vast continent. Diseases have also played their part, but all these causes would only be temporary, were a sufficient quantity of soil left in the hands of the indigenous races. Let us hope, in the interests of anthropology, that such an amount of territory will be reserved and respected in the possession of the natives we come in contact with, as to ensure a perpetuation of some of their descendants to ages indefinitely remote. In historical times one tribe has always been found to increase on the ruins of another. Thus it was not till after the massacre of the French by the Natchez that the Muskogees attained any importance. In the course of thirty years this tribe spread over a very fertile country of more than one hundred square miles in extent, and built fifty towns. The Navajos, according to Domenech, increase in number every day. The Cherokees increased so fast on the lands allotted to them in Alabama, as to incur the fear and jealousy of the whites. They were compelled by force to transplant themselves beyond the Mississippi, and in consequence were considerably reduced in numbers. Here we have a striking proof that it is the occupation of the soil of the aborigines alone which is the real reason of any irrecoverable diminution in their numbers. The Indians living on their allotments in the state of New York seem to be almost stationary. Thus, their total number in 1845, was 3,753; in 1855, 3,934; and now, again, about 3,700. So there is nothing to show that the Red Indian, if not actually driven from the possession of the soil, will not continue to survive for an indefinite period. Those who are in the habit of speaking about the speedy extinction of a race ought to fix some period, within which the disappearance of a race can be called extinction. No one can undertake to assert that the Red Indian will continue to inhabit the continent of North America as long as the human species exists, and so far cannot deny the possibility of his extinction as a race; but, on the other hand, I should consider the proposition I have asserted, sufficiently demonstrated, if the mysterious dispensation of Providence, invoked by some as a real cause, did not completely triumph for the space of the next thousand years. If, during that period, considerable oscillations took place of numbers, owing to the checks enumerated by Malthus, it would be clear that the laws of population are not in any way interfered with in the history of savage tribes; and that if extinction of any considerable race was ultimately effected, it could only, by the coincidence of the occupation or its soil, with one of the usual or normal periods of loss of numbers to which all races are subject.

FEBRUARY 2, 1864.

JAMES HUNT, ESQ., PRESIDENT, IN THE CHAIR.

The minutes of the last meeting were read and confirmed.

The following new Fellows were elected. Rajah Sir James Brooke, K.C.B.; Rev. Henry Clare; Lieut. Fred. Firebrace, Royal Engineers; J. O. Griffiths, Esq.; Charles J. Harland, Esq.; A. E. McCallum, Esq., 39th Madras Native Infantry; George F. Rolph, Esq.; Dr. James Turle; Dr. George Moore, and H. J. B. Hancock, Esq. The Secretary read the list of presents given to the Society since the last meeting, for which thanks were voted to G. E. Roberts, Esq.; Dr. Beddoe; C. F. von Martins; J. Fred. Collingwood, Esq.; T. Bendyshe, Esq.; Dr. James Hunt; M. Georges Pouchet, and M. Duhoussat.

The following paper was then read:—

Some Remarks on the Construction of the Upper Jaw of the Skull of a Greenlander. By Dr. C. G. CARUS.

HIGHLY appreciating the opportunity of corresponding with the London Anthropological Society, I feel myself called upon to communicate some remarks, and to add a question about them, the answer to which will not be uninteresting for anthropology in general.

In the first part of my *Atlas on Craniology*, which appeared in Leipzig in 1843, I remarked that in the skull of a Greenlander, which I sketched, it was singular, that on this skull there was a decided separation between the upper jaw-bone and the intermaxillary bone, almost as in little children or in quadrupeds, and consequently in this skull there was a decided resemblance to an animal form.

Very soon after this I was so fortunate as to procure another real authenticated Greenlander's skull, and I was not a little surprised to find in this also quite the same conformation on the jaw-bones. Taking it for granted that the London Anthropological Society, either in their own collection, or at the British Museum, can easily procure a great number of real and genuine Greenlander skulls, I would propose that a strict examination may be made of all the skulls and their upper jaw from this race of people, and would look forward with pleasure to a report on this subject in the publications of the Society.

It would in all cases be very remarkable if this construction of the bones, which I find so very seldom in African, Asiatic, and European skulls, should occur so often as to make it almost *universal* among the Esquimaux. Certainly, if this is the case they might be classed among the lower order of human beings, and the well-known voracity of these tribes from the extreme north of North America could be then brought in a near connection with this particular conformation.

Mr. C. CARTER BLAKE stated that the above paper having been referred to him by the Council, it was now his duty to make a report

thereon. He had not thought it necessary to pursue the comparison further than the investigation of the Greenlander or Esquimaux skulls in the collection of the Royal College of Surgeons, and in the British Museum. He there found several instances in which the premaxillary palatine suture was distinctly closed in the skulls of Greenlanders, and on referring to his own note books, he found that similar instances were sometimes present in other races than the Esquimaux. His friend, the late Camille Bertrand, whose loss to anthropology he had personally to deplore, as well as the society at large, had accumulated many facts on this subject. He might further refer to Rousseau's valuable memoir, "De la non-existence de l'os intermaxillaire chez l'homme à l'état normal, et des erreurs commises à l'égard de la prétendue existence de cet os." Prof. Carus had not stated whether the fissure he alluded to was present on the outer or inner side of the maxillary bone. If the former, of course such an abnormality was almost unprecedented in the human adult; but if the latter not uncommon defect of ossification was all that Prof. Carus alluded to, Mr. Blake had much pleasure in reading the following passage from the work of his friend Dr. Webb, on *The Teeth in Man and the Anthropoid Apes*. "We may, however, remark here, that although the premaxillary palatine suture is usually entirely obliterated at a very early period in the human *cranium*, traces of its existence are occasionally found both in adult European skulls and in those of the dark races. A careful examination of the collection of *crania* in the Museum of the Royal College of Surgeons will satisfy the inquirer on this point. In the skull of the human idiot figured in the first volume of the *Zoological Transactions*, the same condition is represented, and its occasional occurrence has not only been noticed by Lawrence and other modern writers, but it was especially remarked by some of the older anatomists. In Vesalius's great work, *De Humani Corporis Fabrica*, edit. 1555, is an engraving of a skull exemplifying this peculiarity. Let it be, however, distinctly understood that in such exceptional cases the suture has never been found to extend through the *alveolus*. Galen, as Vesalius infers, debarred the practical study of human anatomy, and, restricted to the dissection of the lower animals, was led into the error of reckoning an intermaxillary amongst the separable bones in Man." The character in question was neither common to all Esquimaux skulls, and it was to be found in other races of man.

The thanks of the Society having been given to Dr. Carus and Mr. Blake: the following paper was then read.

On Anthropological Desiderata, considered with reference to the various Theories of Man's Origin and existing Condition, Savage and Civilised. By JAMES REDDIE, F.A.S.L., Hon. Mem. Dial. Soc., Edinburgh University.

SIR,—One of the first questions raised in this Society was, whether there were not already sufficient facts collected, from which it would be our duty to deduce general laws; or if the collecting of additional facts was not a primary duty? But, whether there be sufficient data

for a safe anthropological generalisation or not, it is not, at any rate, left to us to choose whether we should yet generalise or refrain from doing so. Generalisations or theories of man's origin and present condition have been already put forth, which we cannot ignore; and it is impossible to reflect upon the various facts of which we are aware, without considering their bearing for or against one or other of these conflicting theories. As regards the collecting of additional facts, I cannot imagine any dissent from the language of our President in his inaugural address: "It must be our object to decide what are the facts we most want, and to collect information on a systematic plan."*

It would be idle to enter into the question whether it would have been better not to have had theories put forward till all possible facts were collected. I question whether reasoning man could thus possibly refrain from drawing conclusions from the facts he already knows. But theories do exist; and, as they are diametrically opposed to one another, the practical and immediate question for us to decide is, simply, In how far are such theories supported, or not supported, by the facts we know? Till this is decided, indeed, we shall scarcely be able to ascertain what further facts we want to complete the science of man. While, if we attempted to arrange our facts—whether those already ascertained or those expected hereafter to be discovered—in accordance with some false hypothesis, we should only succeed in constructing an elaborate *pseudo-science*, that might have, indeed, the outward appearance of truth, but would have nothing of its stability.

It was long ago observed by Lord Bacon, that theories must necessarily at least seem to accord with facts, or they could not possibly be entertained or accepted as true. But every student of the history of human philosophy must know how the most obvious facts may be overlooked or disregarded, when they happen to interfere with antecedent traditions or theoretical prejudices. It is not merely travellers (as Dr. Hunt says), or the vulgar, who only see or believe what suits their preconceived notions. The Anthropological Society of London was actually founded in a year when a tardy first acknowledgment was publicly yielded, by one of our most eminent geologists, to certain facts in geology, the existence of which he had for many years persistently refused to admit, mainly because they proved that man was contemporaneous with certain animals, contrary to a theory he then held, which required these animals to be extinct ages before man came upon the scene.

This circumstance shows the great influence of theory upon induction, and may well serve as a warning to this Society, to guard against adherence to hasty generalisations, only based upon a limited or partial knowledge of facts. But there is something even worse than hasty generalisation, which ought to be utterly deprecated in science; namely, the admission of fanciful and gratuitous theories, of not merely "hasty" but *false* generalisations, that are not really in accordance with any recognised facts or principles whatever. And

* On the Study of Anthropology, (*Anthropological Review*, vol. i, p. 11.)

yet, in the very same volume in which Sir Charles Lyell acknowledges his long-lived rejection of facts bearing upon the antiquity of man, he becomes the ardent advocate of a new and startling theory, which strikes at the root of, and supersedes, all other theories and traditions of man's origin and history; and he recommends it to be accepted, as "at least a good working hypothesis", upon the sole ground that the geological record—which at present contradicts it—is "so very imperfect"! He seems also to think, that all that is now necessary, in order to secure its acceptance, so far as anthropology is concerned, is the discovery of the fossil remains of some animal intermediate in form between that of the ape and man. He even tells us precisely where the search must be made for this last of the apes or first of mankind—namely, in equatorial regions. And should there, by some fortuitous chance, hereafter be found buried in Africa, the skull of a Negro idiot, or of some African female of the lowest type, with an abnormal cranium somewhat more flattened than usual, enlightened and civilised man is then expected to believe, not only that his first human progenitor was a Negro, but that the Negro Adam and Eve were the progeny of apes! Certainly, if men can be brought to believe in the latter deduction, they can scarcely hesitate as to the former; though, before they can accept it, they must unlearn all the facts they now know—and which were recently so ably laid before this Society*—relating to the Negro character and history. According to the transmutation theory, adopted by Sir Charles Lyell, man becomes merely the last link in one so-called "natural" chain of being; anthropology would then be apparently reduced from one of the most difficult and complicated of human studies, to a simple fraction of one common science of organic life; and "Anthropological Desiderata" would dwindle down to the attainment of one solitary object—the discovery of a semi-human skull!

A hypothesis so sweeping and comprehensive as this, claims the especial attention of anthropologists. It is either a very great truth or an astounding error. If true, it disposes summarily of the most important anthropological hypotheses. It gets rid, of course, of the polygenous theory, by assigning to us the ape for an ancestor, mediately through the Negro. But it not only settles the question of man's origin from one or many Adams; but it also determines that the primitive man was a savage, or something even lower. And it must surely be admitted to be absurd, that anthropologists should go on discussing whether the primitive human pair or pairs were savage or civilised, if there is really any ground for believing in the probability that our immediate progenitors were baboons.

The scope of this paper does not admit of a critical examination of the whole grounds upon which the theory of transmutation is now put forward by Mr. Darwin. It is enough to say that, although it is enunciated in a volume of 500 pages, its author does not claim in that volume to have as yet adduced facts sufficient even to establish the

* On the Negro's Place in Nature. By Dr. James Hunt, Pres. A.S.L., etc. Trübner and Co.: 1863.

minor hypothesis "of the origin of species by means of natural selection"; though he has nevertheless not only arrived at that conclusion himself, but goes very far beyond it, to believe that, as species may have been derived from mere varieties, so genera may have been developed from species, and even animal from vegetable life, and man from the inferior animals. Moreover, he is of opinion (as expressed in the concluding words of his volume) that "there is grandeur in this view of life with its several powers, having been originally breathed by the Creator into a few forms, or *into one*; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, *and are being*, evolved."*

The chief and only positive argument in favour of the theory of transmutation on which he insists, however, is its *naturalism*, as opposed to what he characterises as "the miraculous system of distinct creations". The only weak point in the theory of which he appears to be conscious, is the want of palæontological facts to support it; and this he asks us to disregard, on the ground of the present great imperfection of the geological record.

Sir Charles Lyell adopts both these arguments, and, after pointing to the numerous recent corrections become necessary in the theories of palæontologists, which had been founded on the geological record when still more imperfect than now, he frankly acknowledges "that no one can believe in transmutation, who is not profoundly convinced that all we yet know of palæontology is as nothing compared to what we have yet to learn."†

Professor Huxley, as a physiologist, has also adopted the theory, and advocates it popularly, while admitting that, as yet, the physiological facts are contrary even to the limited proposition indicated by the title of Mr. Darwin's book. The professor allows that, "in addition to their structural distinctions, the species of animals and plants, or at least a great number of them" [he might rather have said all, almost without exception], "exhibit physiological characters—what are known as distinct species, structurally, being for the most part either altogether incompetent to breed with one another; or, if they breed, the resulting mule or hybrid is unable to perpetuate its race with another hybrid of the same kind." And yet he gives in his adherence to Mr. Darwin's theory in these words: "I, for one, am fully convinced that, if not precisely true, that hypothesis is as near an approximation to the truth as, for example, the Copernican hypothesis was to the true theory of the planetary motions"; adding, "if man be separated by no greater structural barrier from the brutes than they are from one another, then it seems to follow, that if any process of physical causation can be discovered, by which the genera and families of ordinary animals have been produced, that process of causation is amply sufficient to account for the origin of man"; then, "man might have originated by the gradual modification of a man-

* Darwin, *Origin of Species*, p. 525.

† Lyell, *Antiquity of Man*, p. 406.

like ape; or as a ramification of the same primitive stock as these apes." The "ifs" in these remarks are most important; but they do not stand in the way of Mr. Huxley's accepting the full conclusion of the proposition with all the ifs eliminated. He sweeps aside the inductive facts which are contrary, and to which he has himself previously testified, and, thus moralising, assumes the whole question at issue in these words: "Thoughtful men, once escaped from the blinding influences of traditional prejudice, will find in the *lowly stock whence man has sprung*, the best evidence of the splendour of his capacities." He also considers that, in his little book on *Man's Place in Nature*, he has set forth "the chief facts upon which *all* conclusions relating to the nature and extent of the bonds which connect man with the brute world *must* be based"!

We thus see how entirely the desiderata of this science depend upon the hypothesis which may be adopted, and which requires to be established. To establish the theory of transmutation, however, there is more to be disproved than to be discovered; and unless it can be imagined that the physiological facts acknowledged by Professor Huxley can be blotted out, it will become the duty of a Society such as this, not merely not to accept the theory of transmutation, but positively to reject it as totally unfit to be tolerated as a "working hypothesis."

I have certainly understood that anthropology claims to be established as a natural and inductive science. If so, the absence of positive proof* is itself a sufficient reason for not accepting any theory affecting it; but still more are we bound not only to reject, but to condemn a hypothesis which its very adherents admit could only be established by a *reversal* of the laws of nature. Not only does Professor Huxley explicitly admit that the physiological laws of hybridity are against it; but its author—no, not its author (for it is but the theory of Lamarck, Monboddo, and of the anonymous writer of the *Vestiges of Creation*, once more furbished up, and attempted to be established on totally different grounds than before), but its present regenerator—tacitly admits the same thing, in appealing to the geological record *in posse*, in order, as it were, to contradict the *de facto* record, and also to negative all the experience of mankind within the whole historical period, as to the breeding, intercrossing, hybridity, prolificacy or sterility of animals.

And yet this theory claims to be especially *natural*! What spite, then, can nature have had against its own laws, that the geological record should have been left thus imperfect at the very points which are supposed to be most important to prove their "constant mode of operation?" And in what unfortunate circumstances is man not placed in the world, if, notwithstanding his now supposed great antiquity of existence, there is not the slightest trace of a tradition, as well as not a single actual instance before our eyes, or within man's experience, of the operation of that law of life and development

* *i.e.*, positive proof of at least some facts in nature in accordance with, or analogous to, the class of facts which are assumed to have existed, *ex hypothesi*.

which claims our adherence on account of its constancy and freedom from a miraculous character? Surely, if there were nothing miraculous in the continuance of such a law of constant transmutations for millions of generations and ages, till it has produced all the forms we now behold in the world, its extraordinary cessation now, and within the whole historical period of man's existence, approaches the miraculous!

But a prior question might be raised. Professor Huxley has very properly observed, that the very first requirement of a hypothesis is that it should be intelligible. But none of the advocates of the theory of transmutation give us the slightest hint how to get over a physiological difficulty affecting its very conception, and which will always be a puzzle, at least when we ascend to the later developments of animal life—to the first mammals and to man. We can understand, in a measure, perhaps, at least as a proposition, how geese came to stretch their necks till they turned into swans; though, if that is the origin of the swan, we may wonder why geese do not ever become swans now, and are apt to forget the value of the "scientific" explanation, which is literally (according to Mr. Darwin) because the geese are now more confirmed in their character! We can even understand how monkeys might have rubbed off their tails by sitting upon them, though we cannot get a single step further in the "natural" transmutation of the ape into a man. But those arguments (if we concede them to be such) are rather furnished to us by Lamarck, though Mr. Darwin has adopted them; and we are totally at a loss how to apply them to the case of a fungus progressing towards a higher state of vegetable existence.*

But, shutting our eyes altogether to such difficulties, we cannot but feel curious, as men, to know how possibly the first mammal was nourished in its "struggle for existence", if its immediate progenitor was not a mammal. Or, again passing even over that, and contemplating "the lowly stock whence man has sprung," according to the theory, and as Professor Huxley expresses himself, to the physiological difficulty there is added one that is psychological; for even

* As regards vegetable life Mr. Darwin dwells almost exclusively upon his "Law of Natural Selection" to account for modifications. But when he comes to speak of animals he recognises that "the external conditions of life, as climate, food, etc., seem to have induced some slight modifications." He also says that "*habit*, in producing constitutional differences, and *use* in strengthening and *disuse* in weakening and diminishing organs, seem to have been more potent in their effects." When, however, neither use nor disuse appear to operate sufficiently to justify Lamarck's theory, then Mr. Darwin is ready to draw attention to "the most important consideration, that the chief part of the organisation of every being is simply due to *inheritance*;" and so he accounts for the "webbed feet of the upland goose" remaining unchanged, and he curiously describes them as being "rudimentary in function, though not in structure!" (*Origin of Species*, pp. 185, 204, 219). In fact, though Mr. Darwin confesses, that he is "well aware that scarcely a single point is discussed in his volume on which facts cannot be adduced, often apparently leading to conclusions directly opposite to those at which he has arrived" (p. 2); he very ingeniously claims all these conflicting facts as illustrations of one or other of the various theories, old and new, which he has selected to form into one, of a very plastic character indeed, itself a practical specimen of "transmutation from varieties."

if we see no difficulty as to the physical rearing and training of the first human baby which some favoured ape brought forth, we are forced to ask the transmutationists to favour us with some hint of the educational secret by which the monkeys trained and elevated their progeny into men, when we ourselves, alas! are scarcely able, with all our enlightenment and educational strivings, to prevent our masses falling back to a state which is rather akin to that of monkeys and brutes? To explain how man could rise from a monkey will render it comparatively easy to understand how savage man could elevate himself, and become civilised, though at present this is against almost all our experience and knowledge of the various savage races of mankind. The few questionable instances of "beast-children," as they are called, if they prove anything, only prove, that if not rescued from association with beasts, the offspring even of men might soon sink into something scarcely better than brutes.*

It cannot, of course, be asserted that it would be as difficult to prove that the savage could civilise himself as that the physiological laws admitted by Prof. Huxley might once have been reversed. The latter, we may safely allege, is simply impossible; for nature never contradicts itself. The former, we may admit, is within the range of mere possibility, though, according to all our experience, it must be pronounced to be utterly improbable. Improbable; because, if human knowledge is to be relied upon at all, we must trust to clear deductions from the universal historical experience of mankind, as well as to deductions of science. If the unimprovableness of the Negro renders it doubtful whether he should not even be classed as a different species altogether of the *genus homo* from the European, it is at least highly illogical, at the same time, to be entertaining the idea that the civilised European descended—or, in a more proper sense, ascended—from the Negro!

Now the question naturally arises, Supposing the geological record to be completed, as Mr. Darwin and Sir Charles Lyell assume it may probably be, would this serve, in the least degree, to give support to the thesis they have adopted?

The graduated order of nature is a fact. It is also the very theory of the oldest "tradition" of created existence to which we have been accustomed. And it need not even disturb time-honoured theories or prejudices, if we find that these gradations in nature are even finer than we have heretofore discovered. Even if the distinctive lines between the various higher orders of animated being were proved to be—or rather to have been—as faint as they are between some forms of vegetable and animal life, this would not prove that the one could be produced from or pass into the other. No dead remains of past existences could ever establish such an hypothesis. If ever a law of invariable nature, it would be a law now and always;—or what is a natural law?—and we should not have now to search the geological record in order to establish it, any more than to search the indefinite past to establish the laws of mechanics or chemistry.

* See Anthropological Review, vol. i, p. 21, *et seq.*

But here we are mostly concerned with the development theory with reference to the "primitive man." If we grant, then, that—in the words of Sir Charles Lyell—the absence of gradational forms between the recent and pliocene mammalia should only be regarded as a proof of "the weakness, in the present state of science, of any argument" [against the probable former existence of intermediate forms] "based on such negative evidence, especially in the case of man, since we have not yet searched those pages of the great book of nature, in which alone we have any right to expect to find records of the missing links"; and let it further be supposed that "when the strata of pliocene and post-pliocene date in equatorial regions" are searched, there may actually be "discovered hereafter some species more highly organised than the gorilla and the chimpanzee."* To complete this hypothetical picture, let us further suppose, in the words of Professor King (who has kindly ventured upon details which Mr. Darwin and Sir Charles Lyell have hesitated to touch), that there may be "no reason to doubt that there may have been species of the *genus* in existence [he is speaking of the *genus homo*] unpossessed of those gifts which so eminently place the existing human races, but in different degrees, above the anthropoid apes: why there may not have been a Pliocene or a Clydian species, possessed of no higher faculties than such as would enable it to erect a protecting shed, fashion a stone for special purposes, or store up food for winter, but, like the gorilla or chimpanzee, be devoid of speech, and equally as unconscious of the existence of a Godhead."†

What, after all, I ask, is gained by these various suppositions towards establishing the theory of transmutation? It is, of course, impossible to deny that there might have been a kind of superior gorilla, less brutal in the development of its back-bone and skull—as the gibbon actually is in these respects; and it is possible there may yet be discovered some forms of crania of less capacity and of inferior type to those of the Australian savage, or of the Neanderthal skull. The approximation of the crania of the apes to man, or of the man to the ape, may even be imagined to be so great, that palæontologists would be puzzled to decide, from the contemplation of the mere *caput mortuum*, whether its living owner had been a monkey or a man. The only result would be, that this point would be determined solely according to the evidence there might be that the individual to which it belonged was probably possessed or not possessed "of those gifts which do place" (it is admitted) "the human race above the anthropoid apes."

I venture to say that questions such as these cannot be decided by any geological record whatever, or any mere dead vestiges of bygone forms of existence. Apart from the physiological objections (which seem to be insuperable,) to the theory of transmutation, the grand issue to be decided by anthropologists will mainly depend upon what we can discover as to whether savage man can civilise himself or not.

* Lyell, *Antiquity of Man*, pp. 498, 500.

† *Anthropological Review*, vol. i, p. 393.

If not, there simply cannot be a doubt that "the primitive man" was neither a savage, nor his ancestor an ape. And apart from theories altogether, the existence of mankind both in a civilised and savage condition naturally suggests to us the inquiry, To which of these distinctive classes did the primitive man probably belong?

Before this question can be satisfactorily answered, however, or even discussed with advantage, it seems necessary to arrive at some definite understanding as to the meaning of the word "civilisation" with reference to anthropological considerations.

On the one hand we know that there are various degrees of civilisation among men. We know, also, that communities once civilised have the power of advancing to higher degrees of mental, moral, and material improvement. On the other hand we know how readily individuals, or even masses of the inhabitants of civilised states, may fall into a condition of intellectual and moral degradation, although surrounded with all the elevating influences of civilisation. We also know, in the language of Professor Waitz, that the savage, or "so-called lower races, do not emerge from the barbarous state in which they apparently have been from time immemorial; that they exhibit no desire to leave it; and that in spite of example and teaching they seem to remain what they ever were."* Or, if this be regarded as too strong a statement, we at least know but few, if any instances, in which a people in a barbarous state have of themselves risen to anything higher and become civilised.

We know too well how men may degenerate and become sunk in ignorance and vice. We are also aware that a state of ignorance and moral degradation may occur among men whose physical development does not differ from that of their neighbours, although the difference between their psychical characters may be as wide as between the civilised man and savage. At the same time we have evidence that by degrees, if the child follows the downward course of the degenerate parent, and a degraded family grows into a degraded community, even the physical type of a people will alter, and become, like their minds, inferior to the original stock. And here arises an important question, May this process of degradation go so far that the degraded race can never again be capable of rising to its pristine condition? In considering this point the great difference between man and other animals should not be lost sight of. When it is said that the Negro or other savages seem unimprovable, that does not mean they are utterly incapable of being taught something or of being improved to some extent. The mere animal only is literally unimprovable. Its instincts are perfect by nature, and the individual does not degenerate. Man has reason mainly to guide him; and if he does not use it he inevitably degenerates.

There are, perhaps, a few instances of what may be regarded as proofs that a people may also raise themselves from a degraded stock, and alter and improve their character, and eventually even their physical appearance. I can, however, find only one clear instance of this kind,

* Waitz, p. 328.

in the elaborate work of Professor Waitz, namely, that of the Sikhs, a religious sect, founded in 1469, by Nanaka, and which has since lived in an isolated state. Originally Hindoos of the Punjab, they are now strikingly distinguished from their nearest allied tribes, somewhat in the same degree as the Hindoos from the Chinese, by extremely regular features and an oval face. They wear long beards, and are said to resemble Europeans in face and deportment, more than do any other Asiatic people, with the single exception of the inhabitants of Cashmeer.*

It might be objected to this example, that the Hindoos, from among whom the Sikhs emerged, were not savages or barbarous, in the extreme sense; that this is only a marked instance of an advance from one degree of civilisation to another; or, that, at least, it is but an exception that would only prove the rule to which it is contrary, unless other instances can be adduced (if that be regarded as one) of a barbarous community raising itself and emerging from barbarism. All the isolated races of mankind, it might be added, which ethnological science has brought to light, who have no historical connection with some civilised race or people, have been found actually remaining in a barbarous and savage state, while many have been found in that condition, even when there have been traces in their traditions and antiquities of the connection of their remote ancestors with a civilisation they have lost. According to the geological record, all imperfect as it is yet admitted to be, we are told in Sir Charles Lyell's recent work, that "there are evidences that the plains of the Mississippi river had been occupied for ages before the French and British colonists settled there, by a nation of older date, and more advanced in the arts than the Red Indians whom the Europeans found there."†

While noticing this fresh testimony to the great antiquity of human civilisation, which goes somewhat towards proving that probably the Red Indian savages are not specimens of "the primitive man," as some have long supposed, but really a degenerate race descended from a comparatively civilised ancestry; we must carefully keep in mind that the absence of any such proof of the former civilisation of the true aboriginal Americans, would not have established the contrary. Nomadic tribes of savages sunk in barbarism, whose remote ancestors were civilised, might, of course, wander into regions previously uninhabited; in which case the local geological record could afford no evidence of the stock whence such a people might have really sprung.

But if anthropologists must not put aside such an instance of advancement, at least from comparative barbarism, as that of the Sikhs, its consideration suggests the question,—What essential characteristic or germ of superiority did these Hindoos possess, which enabled Nanaka to raise himself and them in the scale of being, compared with the original stock from which they sprang? What is this principle, so to speak, which enables a people to rise, and which probably,

* Waitz, p. 74.

† Lyell, *Antiquity of Man*, p. 39.

therefore, constitutes the essence of civilisation? What, also, is there, in their inner or outer life, common to the Sikhs and the inhabitants of Cashmeer, who are also said physically to resemble Europeans? Have the people of Cashmeer been under "intellectual influences" of an analogous kind to those which Professor Waitz assigns as the explanation of the Sikhs' superiority? This marked change in the character and even appearance of the Sikhs has occurred within a few hundred years; and it was accomplished by one of themselves, not by Christian missionaries from more civilised communities.

There is another marked instance of change, but of an opposite kind, in the physique of a people, proceeding before our very eyes, in North America. But the *desiderata* relating to that most interesting physiological transformation are as yet but meagrely supplied. It has not, I think, been stated whether it is common to all the States, North and South alike, or peculiar to certain districts more than to others; neither has it been stated whether it is peculiar to individuals of certain temperaments, or more or less marked according to temperament or the habits of life of individuals, or their original stock. What "intellectual influences" may have probably to do with it, is also left entirely unnoticed. Although the cause is generally referred to merely as climatic, I have never seen it noticed whether the effect stops short in the States, or may also be observed, more or less, in the Canadas.

Now, just as we might probably learn much more of the nature of some geological changes by observing what is actually taking place on a large scale by means of glacier action now, in the great mountain ranges of the Himalayas, than by speculating, as is chiefly the practice, upon the probable causes of past changes observed in old geological strata; so it humbly appears to me, that by far the most important anthropological desiderata will be supplied rather by an extended knowledge of the causes and effects of advancement or degradation actually occurring among the living races of mankind, than by any indefinite evidence afforded by the partial remains of previously existing peoples, or of their imbedded handywork.

Whatever may be hereafter discovered by geologists, the geological record will always likely be most imperfect. Besides, the real fact is, that geology is in much the same condition as ethnology was before the science of anthropology proper was attempted to be established. A cosmological branch of science is equally now a *desideratum*, in order to give a proper foundation to geological speculations. Most geologists in the present day seem to base their views upon the nebulous astronomical and plutonic theories, although Sir David Brewster, in *More Worlds than One*, so strongly denounced the former in no measured terms, as not only utterly unscientific and inconceivable, but as having no supporters among scientific men of any name.

Sir Charles Lyell, too, points to the fact that as yet we know little or nothing of the time required for the growth of peat; while perhaps, only a few years ago, the idea of its "growing" at all would have probably been scouted by scientific geologists. We know, also, little or nothing of the processes of petrification, and this might

almost be described as a matter that it has not at all, or scarcely, been thought necessary to investigate, though it must be very important towards attaining a proper knowledge of the periods indicated by the various geological strata and fossil remains. And (again to quote from Sir Charles Lyell), "It is more than probable that the rate of change was once far more active than it is now."* Although upheavals and depressions of the crust of the earth are now continually recognised as geological facts of the most certain kind, the probable effect of this upon astronomical observations has not, I believe, been ever noticed; though, if well considered, it might probably serve to account for and reconcile certain phenomena very recently admitted by the Astronomer Royal to be in a "*delightful* state of uncertainty."† In Geology, again, it is generally assumed that the order of deposit of fossils must necessarily indicate the order of their creation, which by no means follows; and the absence of remains of any kind in certain strata, has been held generally to prove, not only the non-existence of the undiscovered forms in the particular spots where the investigations may have taken place, but also their non-existence where the strata have not been explored throughout the whole world. The practical effect of such a false system of induction is best witnessed by the remarkable admissions contained in Sir Charles Lyell's recent work. But it must be observed that even if man (as is now at last believed) was contemporaneous with long extinct mammalia, he might have been so, and yet if living only in other regions of the earth, his and their bones might not possibly have been found together. As regards the evidences of the state of man's civilisation from the remains of his handywork, this, too, is, and must always be, but an uncertain means of knowledge. In the ancient canoes, dug up from the banks of the Clyde, Sir Charles Lyell notices the fact, that the iron nails, or bolts, evidently used in their construction, have all wasted away, while the wooden pins remain. But we can easily imagine that man in a primitive state, in a fertile country, and with but few wants not easily satisfied by nature, might be in a high state of moral and intellectual elevation, without having accidentally discovered, or even having required to invent, the difficult processes necessary to obtain metals from the ore, or to forge metallic implements. We have been told—as, indeed, we well know—how his handywork in metals might disappear, while the sharpened flints used for arrows, spears, and probably to be thrown from slings, might permanently endure.

There are one or two minor points which I would, lastly, briefly notice. We have long been accustomed to consider the teeth of man and animals as criteria that indicate the nature of their food. What explanation, then, can be given of the development of the canine teeth of the gorilla or chimpanzee into huge tusks—they not being flesh eating animals—and the non-development of such teeth into tusks in savage man, or even among cannibals? Again, the Hindoos and other races have, for generation after generation, altogether re-

* *Antiquity of Man*, p. 74.

† *Mon. Notices of Royal Astron. Society* for December 1863; *Astron. Reg.* for January and February, 1864.

frained from eating flesh : Have their teeth become modified in consequence, comparing them with flesh eating races? If not, why not? The desiderata on this point are most important, and remain uncollected, though there will probably be little difficulty in filling up the blank.

With regard to adopting the cranium as the test of race, or to determine anthropological questions, much is required to be settled, before this test can be logically applied. For instance, the Negro's cranium has been described as less than the European's, as approaching that of the anthropoid apes, and, at the same time, in general terms, as being "like that of a woman"—meaning a woman of the highest type of mankind. Now, if I mistake not, the European female has even a finer and more elevated form of head than the male, though its capacity is less, as the woman herself is less in bodily size generally. It is evident, then, that the form has nothing to do with the likeness between the flat head of the Negro and the Caucasian female. And, if not, this comparison would surely be better left out; for it seems to involve a physiological dilemma, when we speak of the Negro, not only as one of a different race, but probably of a different species from the European, and yet make a likeness to the European female one of the marks of difference.

Then, again, as regards the Negro, his extremely curled or woolly hair is spoken of in disparagement, and as a mark of inferiority; whereas, when the modern American is referred to as physically, at least, degenerating from the European stock whence he sprang, his straight and lank hair is pointed to as a mark of his inferiority, and contrasted with the curly hair of the European. It is to be hoped that, after M. Pruner-Bey's recent microscopical investigations on this subject, the character of the hair may be regarded as one of those varying and accidental features in races from which nothing can be determined, so far, at least, as anthropological problems are concerned.

Variations in the development of the teeth, the shape of the head, the character and colour of the hair, the lobes of the ear, etc., etc., may be observed among the children descended from the same parents on every side among ourselves. A classification of such minute points of difference, as more or less variable or invariable, would be of great value, perhaps, as regards Ethnological science, but would scarcely serve to enlighten us upon the higher problems of Anthropology. These, I imagine, must needs have reference to man's probable origin from one or many Adams, and from a civilised or savage stock. I was surprised to hear it stated that traditional prejudices were sought to be excited against such studies and against this Society. Some people seem to think that, by burying their heads ostrich-like in the sands of existing opinions, they can avoid or prevent the onward and inevitable course of truth, of reason, of knowledge. They pay but a poor tribute to revelation who appear to fear that true science, which gives but the revelation of nature's truth, can ever contradict it. But, in fact, it is not so much revelation they mostly care for, but only their own notions. They should remember, however, that the theories of

man's origin they may dislike have grown up in the absence of a science of Anthropology. They might even be tolerant of Mr. Darwin's various speculations, whether they agree with all of them or not; for it is not a little remarkable that the oldest book in the world not only gives us in its first pages the anthropological description of man's origin, which has, perhaps, become the most widespread "tradition" on the subject; but in it are also found recorded the very earliest experiments in animal breeding "of variation under domestication," and with results almost as fully successful, even then, as any which have yet been described by Mr. Darwin. Mr. Darwin quotes approvingly the old philosophical canon, *Natura non facit saltum*. But this, which truly applies to nature, may as truly be applied to natural philosophers. He, however, neglects the rule. The theory of transmutation is an extraordinary leap beyond "the origin of species by natural selection," and even that is not yet quite established. Moreover, I will venture to add, that, whether it may yet be established on inductive grounds that the human family sprung from a single pair, or from many original pairs, nothing that can possibly ever be supplied in facts or reasoning will enable rational man to come to any other conclusion than that man's origin—like all creation—must have been what we may truly call "miraculous." To begin to be, and to continue in being, are as different, and precisely so, as the manufacture of a watch is from its afterwards going. It is only in poetical language that "the child is the father of the man." In fact, in nature, and of necessity, the child cannot be without the father. The existence of a human infant without parents to beget and nourish it, is simply inconceivable, and therefore an irrational hypothesis. The existence of a man and woman, also, that have not grown up from childhood is equally inconceivable, except upon the single supposition of their being "miraculously" created and made. That once supposed, however, the existence of the human family is simple and natural. On this point, I venture to say, there are no desiderata to be supplied—the record must be considered as closed.

Mr. S. E. BOUVERIE-PUSEY thought that the Darwinian theory had not been correctly apprehended by the author of the paper. He did not agree with the doctrine of Lamarck, nor of Professor King; but it was contended by Mr. Darwin, that species may be changed by natural selection, and this hypothesis he (Mr. Pusey) considered is confirmed by the well known changes that take place in the breeding of rabbits. Whether or not it be admitted that transmutation from one genus to another can be effected, at any rate the admission that there may be a change of species, was an important one. He could not agree in thinking it wrong to have an unproved hypothesis; on the contrary, he considered the formation of hypotheses, even if not fully proved, to be consistent with scientific investigations. The differences between species and varieties vary only in degree from those of species and genera, as Mr. Darwin has shown. Not only do we see varieties formed, but varieties so different, as to approach to difference of species. The assertion, that change of species is con-

tradicted by the physiological laws of hybridity, he regarded as very questionable. The laws of hybridity have not yet been sufficiently investigated to arrive at such a conclusion. It is well known that hybrids have propagated for several generations, and facts do not confirm the supposed law that hybrids cannot reproduce their kind. A breed consisting of three parts of one species and one of another, will, indeed, continue to propagate for several generations. It was not assumed that transmutation of species was effected by sudden changes, but by long continued successive and almost insensible gradations. Mr. Pusey adduced the changes that have taken place within recent years in sheep, so as to produce the varieties of long wooled and short wooled sheep, as illustrative of the changes that may be produced by artificial selection. With regard to the assertion that if the transmutation theory were adopted, all anthropological desiderata would dwindle down to the discovery of a semi-human skull, he considered that even in that case there would remain other important matters for discussion. Whether it was admitted that man was transmuted from an ape, or whether it was agreed that all men were descended from one stock, they might yet inquire whether the differences observed among the races of mankind are specific differences, and whether it be possible to produce a Negro and white man from one another: and whether it be possible to change a Negro into a white man in the course of a number of years, say ten thousand.

Mr. A. R. WALLACE thought that Mr. Pusey had very satisfactorily shown that Mr. Reddie's paper misrepresented the Darwinian theory. If the first step of that theory be admitted—that species may be formed from varieties—it was difficult to see how a line could be drawn between such a change and transmutation. Some of the groups into which the animal kingdom had been divided by naturalists were well marked, and others not so; and of those groups that were well marked, fossil remains have been discovered which indicate an intermediate link. From this it may be inferred that the strongly marked separations we now see, have been only produced by gradual extinction of the intermediate forms during a long geological period. The doctrine of Lamarck was different from the hypothesis of Mr. Darwin, as Mr. Pusey had already shown. It is a well-known law, that animals of the same species vary from several causes; and many peculiarities are continued by hereditary transmission, and in that manner varieties may be formed. The offspring resemble their parents generally, but variations exist between them in every possible characteristic. Indeed, unless it can be shown that the power of effecting changes by natural selection be a myth, it must be admitted that it is capable of producing wonderful changes, in the same manner as it must be admitted that artificial selection produces important changes. With reference to the explanations required by the author of the paper, why the canine teeth of the male gorilla, which does not live upon flesh, should be developed into tusks, Mr. Wallace said, the difference between the gorilla and man in that respect might be easily explained. The gorilla used its tusks as weapons of offence, and those that had

the longest teeth mastered the others, and thus kept possession of the females, while the weaker varieties became extinct. Not a single fact had been adduced by the author of the paper to disprove Mr. Darwin's hypothesis. It has been said that the geological record is imperfect; but he, and those who supported that hypothesis, had the right to assume, that if the record were completed, it would confirm their views, and the very imperfection of the record may be adduced as favourable to that hypothesis. Respecting the assumed laws of hybridity, they were not altogether against it. There was, in fact, almost as much evidence on one side as on the other. With regard to the special question: how the different races of man could have originated? it appeared to him that those who totally object to the arguments of Mr. Darwin, Professor Huxley, and Sir Charles Lyell, should give anthropologists something in return for them; for they cannot be satisfied with mere negation. There were such wonderful analogies to the theory of transmutation in progress in nature, that it was impossible to be satisfied with the declarations of the objectors to the theory, that they did not know how such changes were effected; they ought at least to give a substitute for the theory they attempted to controvert.

Mr. C. S. WAKE was of opinion that they might grant all that Mr. Darwin contended for, without answering the question raised by the paper—the question whether the lower animals are capable of being raised to a state of civilisation? Man possesses something peculiar which qualifies him for civilisation more than the lower animals. They possess instincts, and some of them may be adapted to the habits of man, but they cannot go beyond a certain point. With man, on the contrary, there are no limits to the extent to which he may be civilized. It might be said, indeed, that if man can raise himself from the state of a savage to that of a highly civilised being, that fact would go to prove the Darwinian theory; but supposing man to possess something peculiar in his nature that specially qualifies him for civilisation, the Darwinian theory would receive no confirmation from his power to become civilised.

Mr. CARTER BLAKE said he could not coincide with Mr. Reddie in a great majority of his arguments. The principal object of the paper appeared to be to refute the theory, that man is merely the last link of the chain of being, and which would reduce the study of anthropology to a simple fraction of one common science of organic life. But what could anthropology lead to but to conclusions founded on zoological researches? The objections raised by the author of the paper to the theories supported by Sir Charles Lyell and Professor Huxley, on the ground that they are "new and startling", were considered by Mr. Blake to be of little weight. Anthropologists ought, indeed, to be certain of the fact that the Darwinian theory is truly a working hypothesis before they could speculate from it on the genesis of man. Mr. Blake was not a Darwinian in the correct sense of the word. He did not think, however, that Mr. Darwin intended to insinuate that animal life was originally derived from vegetable life, and that they belonged to the same type of creation. No such biolo-

gical solecism would have been entertained by him. It was asserted by Mr. Reddie, that the Darwinian theory was not supported, and was even opposed, by palæontological evidence; but he (Mr. Blake) thought that it received considerable support from palæontology, for it bound together a number of palæontological facts which were otherwise inexplicable; such, for example, as the partially developed rudimentary organs which several species possessed. The hypothesis of the operation of some orderly system of transmutation was the most probable explanation of those undeveloped organs, and was most consistent with observed facts. The doctrine of transmutation, he conceived, had little bearing on the opposing theories of the unity or diversity of the many varieties of man, and he objected to having the polygenists and transmutationists confounded together. The "graduated order of nature" was admitted to be a fact by Mr. Reddie. But what was that "graduated order of nature"? What was it but a succession of different types? The questions then arose: how did those types originate? And if they were the result of established laws, how could such laws be opposed to any physiological facts? The Neanderthal skull, he thought, threw very little light on the question, and he should make a communication to the Society on that subject on a subsequent evening. Allusion was made in the paper to the discovery, on the banks of the Mississippi, of the remains of a nation more civilised than the Red Indians, but though those relics of a former race were of great antiquity, they were modern in the sense in which geologists apply the word, probably quite modern as compared with the history of mankind. He protested against the manner in which the author of the paper had spoken of geological evidence. He did not know that any geologists had used such arguments as those ascribed to them, and if they ever did so, at least, such opinions were not entertained at the present day. As to the hypothesis that the sharpened flints found in the drift were thrown from slings, such a hypothesis did not account for them, except it were supposed that in various localities battles must have been fought; such an improbable theory must remain unaccepted. With regard to the resemblance of the Negro cranium to that of European women, Mr. Reddie must have mistaken what was said in the paper to which he alluded. There was no stress laid on the peculiarities of form, but merely on the size of the skulls. The shape of the two crania differed very considerably, and there was no danger of any person at all acquainted with the subject mistaking a true West African Negro cranium for that of an European, whether male or female. The woolly hair of the Negro had been referred to, not as a mark of inferiority, but only as a specific difference. In the able article written by Dr. Pruner-Bey, inserted in the last number of the *Anthropological Review*, he considered the hair an essential character of race. Mr. Reddie had referred to the oldest book in the world as giving the anthropological description of man's origin; but there was historical evidence in the Nabathæan records on that subject, hinting at the tradition that human beings existed long before Adam. It was curious to observe how old traditions and exploded opinions were in the course of years revived and brought forward as new subjects for speculation.

There was, for example, an old book about our parents in Paradise, in which the author speculated at great length on the question whether Adam and Eve had umbilical cords, and the same speculation was revived a few years since in a book written by Mr. Gosse.

Mr. BENDYSHE could not perceive how the transmutation theory could get rid of the polygenous theory. Mr. Reddie appeared to suppose that, admitting the transmutation theory, man must have descended from a single ape; but that by no means followed. Man might have descended from several different apes. The question of the origin of man from one or from many Adams, was not settled at all by the transmutation theory. The opinion expressed by the author of the paper, that "nothing that can possibly ever be supplied in fact or reasoning will enable rational man to come to any other conclusion than that man's origin must have been miraculous," appeared to be strangely inconsistent with the assertion, in another part of the paper, that anthropology claims to be established as a natural and inductive science.

Mr. REDDIE explained that induction might lead us to believe in a miraculous theory as the only explanation of existing facts, when natural laws would not account for them; but it could never justify our believing in a *natural* reversal of the laws of nature.

Mr. BENDYSHE continued. He conceived that anything miraculous must be produced by a reversal of the laws of nature. On the question of man's origin, it appeared to him that those who talked about the origin of man being miraculous, did not assist at all in solving the mystery. Suppose, for instance, that the original man appeared suddenly on the earth: we should say that such a sudden appearance must have been miraculous; but, if that phenomenon were repeated, and occurred at certain periods, then, indeed, it would become a law of nature. The supposition, that the origin of man was miraculous, would afford no explanation of the fact, which would be as difficult to imagine as ever. It would surely be better to use the word "inconceivable."

Mr. PUSEY added a few remarks, in reference to the observations in the paper, on the development of canine teeth in the Hindoos. He said that the Hindoos do eat the flesh that has been offered in sacrifices.

Mr. G. E. ROBERTS made some observations in reference to the alleged imperfection of the geological record. He thought it was so imperfect, that there was little reliance to be placed on the evidence to be drawn from it, either on one side or the other. He felt sure, indeed, that the state of palæontological knowledge was such, that it was not possible to draw any conclusions on a great scale from the discoveries that have been made. The rapidity of the change of opinion respecting the organic remains found in the succession of rocks was so great, that it showed no dependence could be placed on such conclusions. He agreed with Mr. Wallace and with Mr. Blake, in thinking that the author of the paper had not fully comprehended the theory of Mr. Darwin; but the subject was so comprehensive, that it was difficult to arrive at definite conclusions respecting it. In confir-

mation of the remarks of Mr. Blake, about the recurrence of speculative opinions in cycles at different times, he mentioned that he had lately seen a pamphlet in which the occurrence of flint implements on the earth was attributed to the agency of fallen angels, and the same opinion he had seen expressed in an old geological work.

The PRESIDENT thought the meeting were much indebted to Mr. Reddie for having elicited the interesting discussion that had taken place, and for endeavouring to show the desiderata which anthropology now requires. He did not wish to say much on that occasion respecting the origin of man, and though he did not agree with Mr. Reddie in his conclusions, he thought anthropologists should feel obliged to him for putting the drag to the coach, which he might think was going too fast down the hill. Mr. Reddie considered that some anthropologists were too hasty in their generalisations; but it appeared that he himself was liable to the same imputation, when he asserted that no rational man could come to any other conclusion than that man's origin must have been miraculous. Mr. Reddie said that, according to the transmutation theory, the ape was assigned to man for an ancestor, mediately through the Negro, and that such a supposition was not to be tolerated as a working hypothesis; but it might be asked, is the supposition of special creation and miraculous creation a good working hypothesis? It should be borne in mind that the historical period is comparatively very short indeed, and it would be a wonder if in that space of time anything should be discovered to confirm the theory of transmutation. It was an important question bearing on the subject, whether it is possible to civilise savage races; for if that were impossible it would throw a doubt on the possibility of transmutation. This was the most forcible argument Mr. Reddie had adduced. The historical period was, however, too short to enable anthropologists to draw any definite conclusions as to what might be done in the course of a much longer series of generations by the selection of species, and by other causes. With regard to the resemblance of the European female brain to that of the Negro, all observers agreed that there was a resemblance, and that the brain of the female Negro, so far as the mere capacity went, resembled more nearly that of the ape—the cerebral capacity of the female being the smaller in all cases. Such were the facts; let the conclusions drawn from them be what they might. With respect to the woolly hair of the Negro, it was not said that that indicated inferiority of race, it was merely noticed as a distinction. Mr. Reddie asserted that no rational man could come to any other conclusion than that man's origin was miraculous; but it did not appear to him (the President) that any rational man would arrive at that conclusion. There was, in point of fact, nothing irrational in the theory of transmutation. There was a grand idea in it. It conceived the gradual working out of a grand design or the operation of a few fixed laws, and it ought to inspire us with grander feelings with regard to the phenomena of animated nature than would the idea of continual supernatural interference with physical laws. There was no necessity for the assumption of miraculous interposition, which supposition he conceived to be most unscientific and irrational.

Mr. REDDIE, in reply, said he had heard nothing to shake the conclusions at which he had arrived in the paper he had read. He hoped the arguments that had been brought forward against it would be printed, and that they would stand side by side with his own. The paper was intended to be suggestive. He meant only to dispute Mr. Darwin's theory so far as the mere origin of species is concerned; but even Mr. Darwin himself had not professed quite to have proved so much, and still less the theory of transmutation. Professor Huxley's mode of supporting it he considered not to be scientific, because he admits it to be contrary to certain inductive facts in physiology, which he at least recognised, though Mr. Pusey now disputed them, and Mr. Wallace seemed to regard them as questionable. M. Wallace's theory as to the development of canine teeth in the gorilla is also something perfectly new in physiology, and very curious, whether applicable or not to the teeth of all other animals. With regard to Mr. Bendyshe's remarks on the miraculous theory, that gentleman did not seem to consider that the question of the origin of man must differ essentially from that of the continuance of the species. Even Mr. Darwin is obliged to *begin* with a "miraculous" *breathing of life by the Creator* "into a few forms, or into one"; and, if only "into one", which is what the transmutation theory aims to establish, then it is clear Mr. Darwin has really entertained the biological solecism which Mr. Carter Blake has considerably repudiated on his behalf. Mr. Bendyshe's suggestion of more apes than one, to reconcile transmutation with the polygenous theory, is at any rate something new; but if these apes are all to be found in the "equatorial regions", to which alone Sir Charles Lyell refers us for a search, we are still relegated to the "unimprovable" Negro races for the first ancestor of civilised man! If it could be established that the low type savages could thus raise themselves, one difficulty in this theory would be got rid of—that would be all. But, if this cannot be established, the theory is incredible, as being impossible. As regarded the absence of palæontological facts to support the transmutation theory, Mr. Roberts had fully answered what had been said by Mr. Wallace; and it is Sir Charles Lyell and Mr. Darwin who have so far discredited the known geological record as to assert that the things which have been discovered were as nothing compared with the things which had yet to be ascertained. It was not, however, for him to disprove the Darwinian theory, but it was for the advocates of that theory to prove it, and to face the consequences to be drawn from it. It was at best, he contended, founded on negative evidence, and was contrary to reasoning by induction. It not only wanted testimony of a positive kind to support it, but it was opposed by the positive facts of hybridity. It was impossible to cross animals that were of well-marked distinct species, as well as those of altogether a different genus. He did not deny that varieties may be obtained by selection, but he objected to the jump from one species or genus to another. Different kinds of sheep may be produced by selection, but did a sheep ever become a wolf? He offered the suggestion as regards the flint implements having probably been used to be thrown from slings, because

of the large quantities of them generally found together, and because the ordinary, and what might be called the stereotyped, explanation of this circumstance was so lame. It was usually said that these quantities were probably found where there had been "flint manufactories"; forgetting that the idea of a manufactory implies a knowledge of the division of labour in a community, and is almost absurd as applied to the uncivilised and savage races of mankind. With respect to the inhabitants of Cashmere, it may be observed that they are Mohammedans; so that they and the Sikhs have this in common, that they are both rigid Theists, and adverse to all idolatry.* In conclusion, he observed that nothing had been urged in the course of the discussion that was materially against the arguments he had advanced, or which seemed to require further reply.

The meeting then adjourned.

ORDINARY MEETING.—FEB. 16, 1864.

SIR CHARLES NICHOLSON, BART., V.P., IN THE CHAIR.

The minutes of the last meeting were read and confirmed.

The secretary read a list of the presents received by the Society since the last meeting, and thanks were voted for the same to George Witt, Esq., and to M. Morlot.

The names of the following new members were announced:—Arthur W. à Beckett, Esq.; Rev. P. A. Newnham; Franklin Richards, Esq.; Alexander Michie, Esq.

The following paper was then read:—

On some Pre-historic Dwellings in Ross-shire. Extracted from Letters received by Mr. GEORGE E. ROBERTS from the Rev. J. M. JOASS, M.A. With an Introduction by GEORGE E. ROBERTS, F.A.S.L.

THE existence of many curious stone-encircled dwelling-spots of pre-historic age in Ross-shire has long been known, but I do not think any archæologist has taken them definitely in hand, and certainly no anthropologist has endeavoured to connect them with a particular ancient people. In form these "lodges," as we may almost call them, are flat spaces chosen out of the moorland, generally along a line of terrace, or upon a rising elevation, and marked out as a habitation by being girt about with a single line of whatever large stones, or rock-fragments, the neighbourhood furnished. Generally, their

* In Mr. Winwood Reade's interesting work on *Savage Africa*, it will also be found, that even some of the Negro tribes are now being visibly improved through the same influence of Mohammedanism. This, Mr. Reade attributes mainly to the pure Theism of that religion, its severity against all idol-worship, and the discipline of its fasts and other rigid rules; as well as partly to its social influences—the Negroes being made converts, and then treated more as servants and "brethren" than mere slaves. We ought to learn some important lessons from these facts on both sides of the Atlantic. J. R.

diameter is about six to eight yards. In the centre was planted the hearthstone, a slab chosen for its qualities of smoothness and flatness. Around and about this, bones of the animals eaten are to be found, beaten and trampled into the ground, and mixed with some few shells, and with fragments of charred wood. The appearance of this compost being much the same as that of the great slabs of stalagmite now being exhibited in London, which formed the floor of the bone-cave of Leo Eyzies in the Pyrenees, except that no stalagmite is present. To several of these I paid a somewhat rapid visit last summer, while staying at Tain; the most typical being two situated upon a rather high moorland about two miles west of Edderton. My stay was, however, too short to permit any explorations to be made within the limits of these stone-circled residences, or to ascertain whether the hypothesis that they were tenanted only during the summer months by the ancient hunters and fishers on the Dornoch seaboard, could be borne out by the discovery of a subterranean room of this primitive house. Since I left Scotland, these investigations have been carried out by my friend, Mr. Joass, with what success, his letters show. I may remark, in introducing the subject, that although not so strictly anthropological as papers read at this Society usually are, still it appears to me that the study of man, in an historical aspect, one of the stated objects of this Society, demands the largest and fullest amount of archæological aid which a pre-historic antiquity can give.

The following are the extracts from the letters I have received from Mr. Joass. The dwelling-spots described are illustrated by his own excellent pencil. After alluding to an immense mussel-midden near the Caithness marsh, which, however, presents no new features, he writes:—"Our principal explorations, however, were in a glen running from Helmsdale, about four miles up which the sketch was made, marked No. 1 on accompanying sheet. The first antiquity observed was a circle *A*, 48 feet in diameter, and formed of rude boulders and smaller stones, now nearly grass-covered, with an opening to the south-east. Here we made no diggings, as we wished to press on to the examination of another circle and subterranean passage, described by our friend, of which more hereafter. From *A* were visible *B* and *C*, which I had previously explored, and a heap of stones, well up on the hill to the right at *D*, which I had not seen before, but which, even at that distance, looked tempting. *B* (represented to scale in fig. 2) is a long cairn, 142 feet long, and 10 feet high. It consists of small river-rolled stones, and has at its higher end a small opening, through which I entered on a former occasion, and penetrated to a distance of 12 feet along a passage 3 feet high and 2 wide, formed by rude upright stones, roofed by similar slabs. The passage from the narrow opening at *a* was somewhat downwards, as attempted to be shown in section. At *b* the roof had fallen in, and prevented further progress. I found near *c*, between two of the upright stones and a roof slab, the top of a human skull, uncommonly thick, and a periwinkle; *c*, fig. 1, is represented in fig. 3 and in section 4. It looks like a kiln; but

there are several similar structures within a few hundred yards of it, nor could I find a scrap of limestone near (it is a granite district), nor ironstone either, although on the river bank, about half a mile off, there is a great quantity of iron slag. From this point we pushed onwards and upwards to *D*, fig. 1, and found it to be a ruined (Pictish?) tower, as sketched, 5. It is situated on the shoulder of a hill, commanding a most extensive view towards the north, south, and west, and is surrounded by fallen stones, enough to have raised it to a height of 30 or 40 feet. The accompanying plan and sections will help to understand it. At *E* (fig. 6) there was exposed what seemed part of a passage in the wall, but which was blocked up by *débris* in both directions. At *F* there was an entrance, roofed by three large slabs, not in contact; the doorway was about 3 feet wide, the roof (of the doorway) being about 10 feet above the level of the interior at the centre of the tower. The true height of the entrance could not be measured on account of the *débris*. From *A* to *E*, and from *F* to *B* (fig. 6), the ground was comparatively level, as shown in section (fig. 7). The fallen stones extended from the top of the wall to the bottom of the moat on the north-east and south-west at *C* and *D*. The scale of feet given will indicate the dimensions.

“About a quarter of a mile off, on a small shelf or terrace marked *A* (fig. 5), there is a circle, similar to *A* (fig. 1). In its inner circumference at *A* (fig. 8) there is a small opening, creeping backwards into which with some difficulty, and lighting a candle, we found ourselves in the subterranean passage referred to at the beginning of this note. From its entrance at *A* (fig. 8), it follows the line of the circle to *B*, at which point the roof is probably 6 feet below the surface, on which, by the way, there lay no rubbish or stones to indicate that the circle had once been the base of a higher structure. 30 feet from the entrance, and 3 feet from the end of this passage, there is a trap or square opening in the roof, closed from above by irregular stones (fig. 9). The dimensions of the chamber or passage are here, and till within a few feet of the entrance, width, $3\frac{1}{2}$ feet, height, 5 feet. What in the world was it made for? Was it the sleeping apartment or the winter residence of those who occupied the upper circle in summer, as other similar circles are said to have been used by the pre-historic people? One solitary shell, a periwinkle, was all we found, after peering into every cranny; we intended letting in the unwonted light of day by clearing the trap, but time failed us.”

Sir CHARLES NICHOLSON said that over the whole of the northern parts of Scotland erections similar to those described in the paper have been occasionally found, consisting of either a circle of stones, or sometimes covered with a slab. Whether they were originally intended for houses, or forts, or for sepulchral purposes, appeared doubtful. When in the Orkney Islands last autumn, he saw a well-known erection of this description, the Maes-howe, in which there were numerous Runic inscriptions, and that building there was no doubt a place of sepulchre. The erection marked *B* in the diagram appeared to be of the same character. In the one that was

entered by Mr. Joass, in which the height of the passage was stated to be only four feet, it was evident that it could not have been used as a dwelling. A gentleman residing at Kirkwall had informed him that he had discovered the foundations of three or four circular buildings that might have been used as forts, and that he there found the remains of *Bos primigenius*, which animal is not existing in Scotland at the present time. Some of those erections were unquestionably places of sepulchre, and in such there were generally found two skeletons in the same tomb; the skull of one being most frequently of a lower type than the other. The theory of Mr. Wright to account for the presence of the second skeleton was, that when a chief or other great person died, one of his slaves was buried with him. The question remained to be decided whether the second person so entombed was of an inferior race. Similar remains to those described by Mr. Joass are also found very extensively on the Cheviot Hills.

Mr. ROBERTS said he had carefully examined a great number of these remains, and he was able to distinguish the difference between those that were dwelling places and those that were forts and places of sepulture; but he admitted that the differences between them were sometimes difficult to be distinguished.

Mr. CARTER BLAKE said that, after the last meeting of the British Association, he visited Mr. Tate, at Alnwick, and under his guidance he went to see some of the antiquities on the Cheviot Hills. In a most sequestered part, and near the highest peak of that range of hills, there is a large series of edifices, precisely of the same architectural *status* as those noticed by Mr. Roberts, and which had been well described by Mr. Tate. The period of time to which they belonged was somewhat doubtful, and it might be questioned whether the archæological divisions of stone, bronze, and iron periods could be depended on as correct indications of relative antiquity, for iron implements are sometimes found in collections of Celtic remains. Mr. Blake begged to add his testimony to that of Mr. Roberts to the able and energetic manner in which Mr. George Tate, of Alnwick, has, not only without assistance, but in spite of opposition, worked up the subject of those so-called Celtic, undoubtedly pre-historic, antiquities in his neighbourhood.

Dr. T. B. PEACOCK, F.R.C.S., then read a paper on *The Weight of the Brain of the Negro*. (This paper will appear in the Memoirs of the Society).

Dr. PEACOCK, at the conclusion of his paper, observed, in reference to the statements on former occasions by Dr. Tiedemann and by Dr. Hunt, respecting the smaller size of the brain of negroes, that it was very probable the difference between their statements and those in his paper might have arisen from the difference in the times after death that the brain was weighed. The brain, if kept in spirit, loses much of its weight. A brain which soon after death weighed forty-nine and a half ounces, he had afterwards weighed at different times, the weight each time being less than before, until it was reduced to thirty-nine ounces. A brain that had been kept in spirit four years lost as much as one-third its original weight. He thought, there-

fore, that the weights of the brain of negroes given by Dr. Tiedemann and Dr. Broca were not much to be depended on.

Mr. CARTER BLAKE stated that Dr. Broca had been engaged for a long time in making investigations on the subject of the brain in negroes, though no result had yet been made public. The observations of Dr. Peacock were grounded on a greater number of experiments than had been previously made, and were consequently of due value.

Dr. PEACOCK remarked on the difficulty of making such observations, as pure negroes seldom die in an English hospital. The observations in his paper had been accumulating for eighteen years.

Mr. CARTER BLAKE added that observations on the brain of the mulatto, of the most valuable character, had recently been made by Mr. Travers, the surgeon of the Charing-cross Hospital.

Mr. CARTER BLAKE then made a communication "on the Neanderthal Skull," a cast of which was placed on the table for examination, and a cast of the skull of a gorilla, as well as two negro skulls, was also placed by its side. Mr. Blake said:—

On the alleged Peculiar Characters, and Assumed Antiquity of the Human Cranium from the Neanderthal. By C. CARTER BLAKE, Esq., F.G.S., Hon. Sec. A.S.L., Foreign Associate of the Anthropological Society of Paris, etc.

I have now the honour to lay before the Society a cast of the "Neanderthal Skull," exhibited by Mr. J. R. Gregory (25, Golden Square, W.), and to call your attention to the descriptions of this skull which have appeared in the works of Fuhlrott, Schaffhausen, Busk, Huxley, Professor William King (of Galway), and myself,* copies of all which I place on the table, in order that members may have the opportunity of comparing the various discrepant opinions to which the discovery of this skull has given rise. The author of a paper has, I submit, a perfect and inalienable right to quote from his own writings; and as I have twice already told the tale of the Neanderthal skull, even in the pre-Lyellian age of the controversy, I shall make no excuse for making such copious extracts from my own previously published opinions, as may, according to my judgment, render the whole subject, alluded to in this avowed compilation, easier of solution. I shall afterwards read extracts from the writings of other palæontologists; I shall append a translation of the valuable *Memoirs*

* Fuhlrott. *Menschenliche ueberreste aus einer Düsselthals.* Bonn: 1859. Schaffhausen. *Natural History Review*, 1861, p. 160.

Busk. *Natural History Review*, 1861, p. 160.

Huxley (in *Lyell's Antiquity of Man*), 1st Edition, p. 80. (*Man's Place in Nature*, 8vo., London, 1863.)

Medical Times and Gazette, June 28, 1863.

Professor W. King. *On the Reputed Fossil Man from the Neanderthal.* (*Quarterly Journal of Science*, Jan. 1864.)

C. Carter Blake. *On the Occurrence of Human Remains Contemporaneous with those of Extinct Animals.* (*Geologist*, Sept. 1861, p. 395.)

C. Carter Blake. *On the Cranium of the Most Ancient Races of Men.* (*Geologist*, June 1862, p. 206.)

of Dr. Schaufhausen and M. Pruner Bey, and I shall conclude by a few remarks on the paper which Prof. King (of Galway) has recently published on this subject.

In September 1861, subsequent to the publication of Schaufhausen's and Busk's papers in the *Natural History Review*, I communicated a short note to the *Geologist*, in which I alluded to the following facts: "The most important, because the most recent, and the most generally canvassed human relic is that which Dr. Schaufhausen, of Bonn, has recently published, with remarks by Mr. George Busk, F.R.S., in the *Natural History Review* for April 1861. According to this statement 'in the early part of 1857, a human skeleton was discovered in a limestone cave in the Neanderthal, near Hochdal, between Düsseldorf and Elberfeld'. The opinions of geologists in Germany seem united to corroborate Mr. Busk's conclusion, that there can be no doubt of the enormous antiquity of this skeleton (found under a deposit of four or five feet of mud on the floor of the cave), and of the probability of its having belonged to what is termed the quaternary period. As, however, I know of no English geologist who has stepped forward to corroborate this theory, I hope that some of the many and intelligent readers of the *Geologist* may be led to consider the question.

"To the palæontologist this skull offers a source of interest, inasmuch as it exhibits a singular character, hitherto supposed to have been peculiar to the highest apes. All those persons who have seen the gorilla in the British Museum, or who have read M. du Chaillu's descriptions of its habits, must have been struck with the large and prominent supraciliary ridge which makes a development from the frontal bone, which gives to the animal that penthouse-like scowl over its eyes, and in which a crest of black prominent hairs is inserted, which greatly contributes to enhance the terrific appearance of the old male gorilla. This supraciliary ridge is characteristic of the genus *Troglodytes*; and in the chimpanzee it is also present, but to a less extent than in the gorilla. In this latter species a large amount of this elevation is due to the development of the space called by anatomists *frontal sinus*, which is a large cavity, divided into two portions by a perpendicular osseous partition, and lined with a continuation of the pituitary membrane, secreting the lubricating mucus discharged into the nose. This frontal sinus, Prof. Schaufhausen thinks, is the main cause of the production of the enormous supraciliary ridge in the Neanderthal cranium, as it is in the gorilla. Mr. George Busk dissents from this theory, and points out that in many recent crania of savage and barbarous men a considerable frontal elevation exists, in which no extraordinary expansion of the sinuses occurs; and Sir William Hamilton (*Metaphysics*, ii, p. 425) asserts, 'it is an error of the grossest, that the extent of the sinus is indicated by a ridge or crest, or blister in the external bony plate. Such a protuberance has no certain, or even probable, relation to the extent, depth, or even existence of any vacuity beneath.' In the Papuan and Australian races of men, which approach nearest to the ape in their cranial conformation, no frontal sinus whatever exists,

whilst a rather considerable frontal elevation is exhibited; whilst in the chimpanzee in which a remarkable supraorbital development exists, no frontal sinuses have been discovered.

“Professor Schauffhausen gives the measurement of a humerus, and radius, with two femora, in a perfect condition, and of part of ulna, humerus, ilium, scapula, and ribs; and it appears from his statements, that they exhibit characters of a human race, far transcending the present as regards power of muscle, as indicated by the thickness and rugosity of the bones.

“The presence and degree of development of the frontal sinus in the human and simian forms, are as follows:—

		Superciliary Arch.	Frontal Sinus.
1	..... European.....	Small	Large
2	..... Papuan.....	Rather large	None
3	..... Neanderthal skull	Large.....	?
4	..... Gorilla.....	Very large.....	Large
5	..... Chimpanzee.....	Large.....	None

“The above shows the difficulty of predicating the amount of the frontal sinus by the development of the supraciliary arch.” And I then proceeded to state that “We find in the Neanderthal cranium a very fair development of brain, and in the general shape of the skull (the supraciliary ridge apart), we find nothing which approaches to the gorilla. No interparietal crest, obliterating the sagittal suture, extends along the head; and although the hinder part of the skull is broken away, we cannot infer anything which approaches to an occipital or lambdoid crest. None of the other characters which so prominently differentiate the human from the simian sub-kingdoms are to be found in this ancient skull. It is not cerebrally inferior to the Papuan or Negro races.

“Was this man from the Neanderthal of the same species as that which now dominates over the animal creation? Dr. Latham, in his *Ethnological Aphorisms*, says, “that all existing varieties of man may be referable to a single species, but there may be certain species which have ceased to exist.” Should this Neanderthal man have proved an intermediate species between the Papuan and the gorilla, a great point of controversy would be gained by the transmutationists; but the failure of the proof which Dr. Schauffhausen has brought forward, leaves the human species as far from the apes as it was when the author, who founded the genus *Homo*, placed it apart from the other Primates.” And concluding a short paper, in which other evidences of ancient human remains had been discussed, I said,—

“It seems, therefore, irrefragably proved that the human species existed in Europe in the post-pliocene age, in, as well as we can judge from the ‘celts’ of Abbeville, a state of semibarbarism. However sparse the population, he still found some enemy to contest with him the products of the forest, and the spoils of the chase. His vast solitude, compared with the present activity and teeming millions of modern Europe, reminds the contemplative observer of the beautiful exclamation of the patriotic Espronceda,

“Cuan solitaria la nacion que un dia
Poblara inmensa gente!”

"We have thus evidence of the existence of man-Man, the highest brained (archencephalate, Owen) individual of the highest sub-division of known *Mammalia*, in whose image the most specialised adaptation of structure to fixed purpose is superadded to the original type of created animal life, which great Archetype was conceived by a Divine Mind, millions of years prior to the advent of the human race." I certainly did not consider the Neanderthal skull as affording such peculiarities as would enable us to consider it as a distinct species of man.

In a subsequent paper, inserted in the *Geologist* for June 1862, "On the Crania of the most Ancient Races of Men," I further expressed my opinions regarding this skull at greater length. While this paper was going through the press, Professor Huxley, F.R.S., kindly permitted me to inspect the cast of the Neanderthal skull in his possession. It is my duty to acknowledge the great courtesy on his part by which these and other facilities, relating to cognate subjects, were given to me by that distinguished palæontologist. After due and diligent examination, however, I saw no reason to infer that it represented a distinct species or race to that which inhabits modern Europe. The following conclusions were then promulgated by me:—

"The apparent ape-like, but really maldeveloped idiotic character of its conformation is so hideous, and its alleged proximity to the anthropoid *Simia* of such importance, that every effort should be made to determine its probable date in time. That such efforts have not been made, and that the evidence at present in possession of English palæontologists is wholly inadequate to enable us draw any conclusion as to its being the representative of any given type of mankind, living or extinct, is the object of the following observations:

"The fact has not yet been conclusively demonstrated to the satisfaction of English geologists that the Neanderthal skull is of high antiquity. The time required for the deposition of the four or five feet of mud in the cave might have been accomplished in a comparatively short space of time. It is not stated at what height in the deposit the bones were found.

"Dr. Schaffhausen's statement, 'that the bones adhere strongly to the tongue, although, as proved by the use of hydrochloric acid, the greater part of the cartilage is still retained in them, which appears, however, to have undergone that transformation into gelatine which has been observed by Von Bibra in fossil bones,' is hardly precise enough to convince practical geologists of the antiquity of the skull. But of the Engis cranium no such evidence is afforded us. It is hardly necessary to repeat the arguments made use of by Buckland against Schmerling at the meeting of German naturalists at Bonn, which proved the less degree of gelatine in the fossil hyæna bones than in the human remains from the Belgian cave deposits. The condition of the Vale of the Trent skull, which has been apparently immersed in glue or some analogous liquid since its disinterment, has deprived us of the only chemical evidence which could have decided the question of its antiquity. Professor Huxley admitted to his audience at the Royal Institution (Feb. 7, 1862) that,

with respect to the Neanderthal cranium, 'its great antiquity was not directly proved, although its date was undoubtedly very early.*' Professor Huxley went to say, that in the Museum of the College of Surgeons there are Australian skulls which closely correspond in configuration and development with those of the caverns of Engis and the Neanderthal, the differences between which latter were 'hardly greater than occurred between individuals of that race, while in form the ancient and Australian skulls presented many analogies.'

"There are several suspicious circumstances connected with the Neanderthal cranium, *e. g.* the pathological enlargement of the coronoid process of the left *ulna*, apparently from an injury during life; the peculiar rounded shape and abrupt curvature of the ribs, analogous in their appearance to those of a carnivorous animal; Professor Schaffhausen supposes this malformation to arise from an unusually powerful development of the thoracic muscles. All these characters are compatible with the Neanderthal skeleton having belonged to some poor idiot or hermit, who died in the cave where his remains have been found. They are incompatible with the evidences which might be left in a Westphalian bone-cave of the remains of a normal healthy uninjured human being of the *Homo sapiens* of Linnæus."

With respect to the prominent supraorbitals in the Neanderthal skull, I thus expressed myself:—

"The broad ground may be admitted, that the earliest Briton skulls generally exhibit a supraorbital projection, which attains in its development, however, nothing like the size of the ridge of the Neanderthal cranium. The majority of the British, Hibernian, and Caledonian skulls figured by Messrs. Davis and Thurnam† exhibit a large supraorbital ridge. This character is also present in a few of the Saxon skulls.

"The supraorbital development of the Briton skull from Ballidon Moor‡ is fully equal to that of the Engis cranium. The Neanderthal skull, however, admittedly stands *sui generis*.

"The Museum of Natural History at Copenhagen contains skulls of the 'Stone Period' in Denmark with an excessive supraorbital projection.

"Aboriginal American races of high antiquity often exhibit a large supraorbital development. This may be seen on examining Morton's§ plates of the Peruvian from Pachacamac ('Temple of the Sun'), plate 11A, and the skulls of mound-builders from the Upper Mississippi (plate 52), Tennessee (plate 55), and Steutenville, in Ohio (plate 68).

"The frontal development of the Australian race, accompanied by an absence of the frontal sinus, has been frequently noticed, and several Australian skulls have the supraorbital ridge overhanging the origin of the nasals to the degree shown in the skulls from Engis and the valley of the Trent.

* Medical Times, February 15, 1862.

† Crania Britannica. 4to and folio. London: 1856.

‡ Loc. cit.

§ Crania Americana. Philadelphia: 1839. In a Pachacamac skull before me there is a very slight supraorbital development.

"Supraorbital development in the Negro is far from being a constant character. It is undoubtedly present in many of the lower Negroes, but I have now before me a skull from Ashantee which exhibits less supraorbital development than many of the skulls from the 'Stone Period' in Denmark.

"In India, the range of variation offered by the hill-tribes of Nepal exhibits the supraorbital ridge under a variety of aspects. The low-caste individuals, perhaps of all nations, have a greater tendency to repeat this character than the more elevated types. In Europeans, however, of high intellect, this conformation may frequently be remarked; and I have observed it in more than one person with whom it was correlated with a high degree of mental ability."

For various reasons, the opinions which I then put forth were opposed to the popular belief with regard to the Neanderthal skull. Some writers authoritatively declared that we had at last discovered the "missing link" which binds together man and the apes. These opinions were, however, opposed, and I extract the following passage from a criticism on my last quoted paper in the "Medical Times and Gazette," of June 28, 1862:—

"The Neanderthal cranium has been already described in this journal. It is only necessary to remind the reader that its characteristics are the extraordinary size of the supra-orbital ridges, which are continuous over the root of the nose, and a remarkably low retreating frontal development, which together give to the skull a markedly simian look. We strongly suspect that Mr. Blake is right in the conjecture he throws out, that this skull belonged to some poor idiotic hermit whose remains were found in the cave where he died. Professor Schaufhausen tells us that the other portions of the skeleton presented deviations from the normal human form. The ribs exhibited a peculiarly rounded shape and abrupt curvature, which he refers to an unusually powerful development of the thoracic muscles. The coronoid process of the left ulna was enlarged, apparently from injury during life. The description strongly reminds one of Sir Walter Scott's Black Dwarf. A theory of rickets and idiocy would, we suspect, go some way towards unravelling the mystery."

The publication of Sir Charles Lyell's and Professor Huxley's works naturally gave an increased stimulus to the consideration of this curious skull. As, I hope, these valuable works are within the reach of every anthropologist in England, I shall here be excused from quoting any more than the following passage from the former volume, containing some of the observations of Professor Huxley on the Neanderthal skull.

"The Neanderthal skull, with which also I am acquainted only by means of Professor Schaufhausen's drawings, of an excellent cast and of photographs, is so extremely different in appearance from the Engis cranium, that it might well be supposed to belong to a distinct race of mankind. It is 8 inches in extreme length and 5.75 inches in extreme breadth, but only measures 3.4 inches from the glabella-

occipital line to the vertex. The longitudinal arc, measured as above, is 12 inches; the transverse arc cannot be exactly ascertained, in consequence of the absence of the temporal bones, but was probably about the same, and certainly exceeded $10\frac{1}{2}$ inches. The horizontal circumference is 23 inches. This great circumference arises largely from the vast development of the superciliary ridges, which are occupied by great frontal sinuses whose inferior apertures are displayed exceedingly well in one of Dr. Fuhlrott's photographs, and form a continuous transverse prominence, somewhat excavated in the middle line, across the lower part of the brows. In consequence of this structure, the forehead appears still lower and more retreating than it really is.

"To an anatomical eye the posterior part of the skull is even more striking than the anterior. The occipital protuberance occupies the extreme posterior end of the skull when the glabello-occipital line is made horizontal, and so far from any part of the occipital region extending beyond it, this region of the skull slopes obliquely upward and forward, so that the lambdoidal suture is situated well upon the upper surface of the cranium. At the same time, notwithstanding the great length of the skull, the sagittal suture is remarkably short ($4\frac{1}{2}$ inches), and the squamosal suture is very straight.

"In human skulls, the superior curved ridge of the occipital bone and the occipital protuberance correspond, approximatively, with the level of the tentorium and with the lateral sinuses, and consequently with the inferior limit of the posterior lobes of the brain. At first, I found some difficulty in believing that a human brain could have its posterior lobes so flattened and diminished as must have been the case in the Neanderthal man, supposing the ordinary relation to obtain between the superior occipital ridges and the tentorium; but on my application, through Sir Charles Lyell, Dr. Fuhlrott, the possessor of the skull, was good enough not only to ascertain the existence of the lateral sinuses in their ordinary position, but to send convincing proofs of the fact, in excellent photographic views of the interior of the skull, exhibiting clear indications of these sinuses.

"There can be no doubt that, as Professor Schaaffhausen and Mr. Busk have stated, this skull is the most brutal of all known human skulls, resembling those of the apes not only in the prodigious development of the superciliary prominences and the forward extension of the orbits, but still more in the depressed form of the brain-case, in the straightness of the squamosal suture, and in the complete retreat of the occiput forward and upward, from the superior occipital ridges.

"But the cranium, in its present condition, is stated by Professor Schaaffhausen to contain 1033.24 cubic centimeters of water, or, in other words, about 63 English cubic inches. As the entire skull could hardly have held less than 12 cubic inches more, its minimum capacity may be estimated at 75 cubic inches. The most capacious healthy European skull yet measured had a capacity of 114 cubic inches, the smallest (as estimated by weight of brain) about 55

cubic inches, while, according to Professor Schaaffhausen, some Hindoo skulls have as small a capacity as about 46 cubic inches (27 oz. of water). The largest cranium of any gorilla yet measured contained 34·5 cubic inches. The Neanderthal cranium stands, therefore, in capacity, very nearly on a level with the mean of the two human extremes, and very far above the pithecoïd maximum.

“The Neanderthal cranium has certainly not undergone compression, and, in reply to the suggestion that the skull is that of an idiot, it may be urged that the *onus probandi* lies with those who adopt the hypothesis. Idiocy is compatible with very various forms and capacities of the cranium, but I know of none which present the least resemblance to the Neanderthal skull; and, furthermore, I shall proceed to show that the latter manifests but an extreme degree of a stage of degradation exhibited as a natural condition, by the crania of certain races of mankind.”

The remarks by Professor Huxley on the same subject in his *Man's Place in Nature* are chiefly an expansion of the observations by the same author in Lyell's work. They, however, contain a most interesting drawing of the lateral sinuses, to which Dr. Schaaffhausen, as will be seen in the sequel, draws special attention. On the conclusions or arguments which Sir Charles Lyell and Professor Huxley have based on the above cited facts, I shall not comment.

In the order of publication the next memoir which we have to consider is that which Dr. Schaaffhausen contributed to the Paris *Société d'Anthropologie* on the 13th of March last; I shall give the Society a verbatim translation of this important memoir, the contents of which have, to my knowledge, not previously been laid before an English scientific public.

A very able and elaborate paper appears in a new periodical, the *Quarterly Journal of Science*; Professor W. King, of Galway, contributes a paper to this periodical, which is undoubtedly of the highest scientific value in the controversy. The following new and important facts are pointed to by Professor King, in addition to those which he has derived from other observers:—

“Another differential feature characterises the fossil in question. In human skulls, even those belonging to the most degraded races, if the forehead be intersected at right angles to the glabella-occipital plane, on a line connecting the two outer orbital processes at their infero-anterior point, the intersection will cut off the frontal bone in its entire width, and to a considerable extent rising towards the coronal suture; whereas in the Neanderthal skull, the same intersection will cut off only the inferior and little more than the median portion of the frontal. This is quite a simial characteristic, and rarely, if ever, occurs in man.*

* “I have examined and made myself acquainted with skulls belonging to the principal races or varieties of man, in all of which the forward position of the forehead, relatively to the outer orbital processes, is the general rule. The Engis skull exhibits it, and the same appears to be the case with the Borreby one, judging from the figure in Lyell's *Geological Antiquity of Man*, p. 86. It

"The last peculiarity is concomitant with another equally striking. Viewing the Neanderthal forehead with reference to the situation of that portion of the brain which it enclosed, we may plainly perceive that the frontal lobes of the cerebrum have been situated *behind* the outer orbital processes. As far as I have ascertained, we cannot say this of man; for, apparently, in all existing races, whose skull has not been modified by artificial pressure, the corresponding parts of the brain actually extend in *front* of the orbital processes.*

He further applies a method of analysis, which, according to my interpretation, is novel to this investigation, and states:—

"*Occipital.*—The upper portion of this bone is quite semicircular in outline, its sutural (lambdoidal) border running with an even crescentic curve from one transverse ridge to the other: generally in human skulls, including the Engis one, the outline approaches more or less to an isosceles triangle. The width of the occipital at the transverse ridges is much less than is common to man; and the disparity is the more striking in consequence of the widest portion of the fossil occupying an unusually backward position.

"Taking into consideration the forward and upward curving of the upper portion of the occipital bone as previously noticed, its semicircular outline, and smallness of width, we have in these characters, taken together, a totality as yet unobserved in any human skull belonging to either extinct, or existing races; while it exists as a conspicuous feature in the skull of the Chimpanzee.

"*Parietals.*—In man the upper border of these bones is longer than the inferior one; but it is quite the reverse in the Neanderthal skull. The difference, amounting to nearly an inch, will be readily seen by referring to figures 1 and 2, in plate II.; the former representing the right parietal of a British human skull, and the latter the corresponding bone of the fossil. These figures also show that the Neanderthal parietals are strongly distinguished by their shape, and the form of their margins: in shape they are five-sided, and not sub-quadrate, like those of the British skull; † while their anterior and

may be doubted that the Plymouth skull, represented by Busk (*Natural History Review*, 1861, Pl. V, fig. 6), is an exception. I possess a very remarkable skull, probably about 500 years or more old, taken last summer out of the beautiful ruins of Corcomroo Abbey, situated among the Burren mountains, in county Clare, which offers a close approximation to the fossil in the depressed form of the forehead: indeed, although not altogether so abnormal in this respect as the Neanderthal skull, it has in appearance a better development, in consequence of the median part of its frontal being a little more rounded. There is no reason to believe that it belonged to an idiot, as it happens that most of the skulls lying about the ruins have a low frontal region. It is singular that the inhabitants of Burren a few hundred years ago should have been characterised by a remarkably depressed forehead, while those now living have a well-developed cranial physiognomy." (Prof. King.)

* "The Corcomroo skull, noticed in the previous footnote, although closely approximated to the Neanderthal one in its low forehead, and this alone, is strictly human in the forward extension of the frontal lobes of the brain relatively to the outer orbital processes." (Prof. King.)

† The outlines were taken by pressing a sheet of paper on the parietals; and, when in this position, marking their margins by following the bounding

posterior margins have each exactly the reverse of the form characteristic of man.

"The *additamentum*, which undoubtedly gives the parietals their five-sided shape, is on a level with the superior transverse ridge, and much longer than usual. This peculiarity is common to the human *foetus*: I have, likewise, observed an approach to it in a 'Caffre' skull belonging to the Dublin University Museum, in which, also, the upper and lower borders of the parietals are about equal in length. But still the abnormality of the latter case is not at all so extreme as the condition observed in the fossil. These particular features also are characteristically simial; for in extending our survey to the Chimpanzee, and some other so-called Quadrumanes, their parietals are seen to present a great similarity to those of the Neanderthal skull.*

The following are Professor King's conclusions:—

"Besides, so closely does the fossil cranium resemble that of the Chimpanzee, as to lead one to doubt the propriety of *generically* placing it with man. To advocate this view, however, in the absence of the facial and basal bones, would be clearly overstepping the limits of inductive reasoning.

"Moreover, there are considerations of another kind which powerfully tend to induce the belief that a wider gap than a mere generic one separates the human species from the Neanderthal fossil.

"The distinctive faculties of man are visibly expressed in his elevated cranial dome—a feature which, though much debased in certain savage races, essentially characterises the human species. But, considering that the Neanderthal skull is eminently simial, both in its general and particular characters, I feel myself constrained to believe that the thoughts and desires which once dwelt within it never soared beyond those of the brute. The Andamaner, it is indisputable, possesses but the dimmest conceptions of the existence of the Creator of the Universe: his ideas on this subject, and on his own moral obligations, place him very little above animals of marked sagacity; † nevertheless, viewed in connection with the strictly human conformation of his cranium, they are such as to specifically identify him with *homo sapiens*. Psychical endowments of a lower grade

sutures; next, by cutting the paper according to the lines given by the sutures, and allowing it to retain its acquired convexity: the outlines were then marked off on another sheet of paper. Possibly the antero-inferior angle of the Neanderthal parietal, as given in the figure, is not strictly correct, owing to the coronal suture being obliterated in that part, but I venture to state that it is approximately true." (Prof. King.)

* "On the cast, an incised line runs from the lambdoidal suture (where the *additamentum* joins it) towards the posterior tubercle. Is this the suture which occurs near and parallel to the transverse ridges in foetal skulls, and occasionally in that of adults? In the skull of the "Caffre," noticed in the text, this suture, which is only seen on the right side, is situated above the ridge; but in the fossil it is below this part." (Prof. King.)

† "It has often been stated that neither the Andamaners, nor the Australians, have any idea of the existence of God: there are circumstances, however, recorded of these races which prevent my accepting the statement as an absolute truth." (Prof. King.)

than those characterising the Andamaner cannot be conceived to exist: they stand next to brute benightedness.

"Applying the above argument to the Neanderthal skull, and considering that it presents only an approximate resemblance to the cranium of man, that it more closely conforms to the brain-case of the Chimpanzee, and moreover, assuming, as we must, that the simial faculties are unimprovable—incapable of moral and theositic conceptions—there seems no reason to believe otherwise than that similar darkness characterised the being to which the fossil belonged."*

Dr. Schaaffhausen, of Berne, had sent to Dr. Pruner Bey the cast of the celebrated Neanderthal skull, which is in his possession, and added to it the summary of a work which he recently read on this subject to the Natural History Society of the Rhine and Westphalia. A translation of the memoir is appended.

"The opinion which I expressed in 1858, in *Müller's Archiv*, and which, since that time I have reproduced at various periods, on the coexistence of man and extinct mammalia, is found to be confirmed by the last work of Sir C. Lyell on the *Antiquity of Man*. In 1861, Mr. Busk published, in the *Natural History Review*, a translation of my above cited memoir, adding to it certain commentaries. Since then, Professor Huxley has made on the Neanderthal skull detailed researches, which have been inserted in the work of Lyell, and which he has recently reproduced in his work entitled *Evidence as to Man's Place in Nature*. I shall oppose the following observations to the opinions put forth by these scientific men.

"Mr. Busk erroneously doubts that the enormous supraciliary elevations on the Neanderthal skull are the result of large frontal sinuses. Professor Huxley agrees with me, that the peculiar conformation of this skull cannot be considered either as pathological or as artificial; but that, on the contrary, it presents the type of an ancient race; and he adds that this skull resembles those of the apes more nearly than any one yet known. On the other hand, the large cranial capacity which appears from my measurements, and the condition of the other bones of the same skeleton, are the solitary circumstances which prevent Sir C. Lyell from considering these bones as a proof of progressive development, and the consequent derivation of man from the ape. To obviate such an interpretation, I had expressly said in my first work, "It would not be permissible to recognise in such a conformation of the skull the most rude primitive type of man; as these exist amongst existing savages, which, without recalling the features of the great apes by so singular a frontal conformation, are, nevertheless, to be found, in other respects, in an equal degree of arrested development." The assertion of Professor Huxley, that the posterior part of the skull is even more striking than the anterior, is without foundation. According to this author, the upward and forward direction of

* "A paper advocating the views contained in this article was read at the last meeting of the British Association, held in Newcastle-on-Tyne. In that paper I called the fossil by the name of *Homo Neanderthalensis*; but I now feel strongly inclined to believe that it is not only specifically but generically distinct from Man." (Prof. King.)

the squama occipitis, the shortening of the sagittal suture, the entirely straight edge of the temporo-parietal suture, and, in general, the flattened form of the skull, which scarcely admits the possibility of lodging in it the posterior lobes of a human brain, approaches the skull to that of an ape more than does the conformation of the lower frontal region. But Professor Huxley has forgotten that all these peculiarities are equally encountered on the skulls of other inferior races; the only character which exclusively belongs to the Neanderthal skull is the entirely animal ridge which bounds upwardly the orbital cavities. Finally, the remark of Professor Huxley, that the two lateral sinuses, *i.e.*, the lower limits of the posterior cerebral lobes, are perfectly visible, is also entirely erroneous: this remark was made in accordance with photographs; but on the specimen there only exists the commencement of the right sinus, where it takes its origin from the superior longitudinal sinus. If, when finally Professor Huxley superposes the cranial contours of the Neanderthal savage, the Australian, and the European, such process only gives a very imperfect idea of the various degrees of their development, because no account is therein taken of the breadth of the skull, which every craniologist recognises as of importance in the calculation of cranial forms. It is not less remarkable that Professor Huxley should have found an Australian skull comparable to that of the Neanderthal. But, according to the opinion of all naturalists (Becker, Martin, Lucae, Ecker), the Australian skull is narrow, elevated, and sloping down like rafters rapidly from the vertex towards the temples, whilst that of the Neanderthal is very depressed, posteriorly enlarged, and without any trace of the indicated conformation.

“To acquire a distinct idea of the cerebral development of the Neanderthal skull, I obtained from Dr. Fuhlrott permission to take a cast of the cavity. This specimen entirely confirms the conclusions which I had drawn from the form and the extent of the cranial cavity compared with that of the inferior races. The cast of the brain shows a great resemblance with that of an Australian presented at the same time to the Society, so far as regards the small cerebral development. The last cast even offers dimensions slightly more favourable. The difference between the two cranial forms is also equally distinct in the brain. The following is the result of the comparative measurement of the casts.

	Length of the hemispheres.	Width of the anterior lobes.	The greatest width.	Greatest height.*
Neanderthal	173 mm ...	112 mm ...	136 mm ...	66 mm
Australian	164 „ ...	100 „ ...	125 „ ...	77 „

“Dr. Lucae has demonstrated that the weight of the brain of the European surpasses, on an average, by 300 grammes, that of the Australian. So far as regards dimensions, it is neither in length nor in height that the first considerably exceeds the second, but greatly in width. This race difference was already manifested in the most remote antiquity when our countries were inhabited by men who, as

* Taken at the line which joins the anterior to the posterior lobes.

regards intelligence, were on a level with the existing savages of Australia. Finally, with respect to the age of the human bones of the Neanderthal cave, I think that the presence of the tooth of a bear which was found in the same bed, and which externally so much resembles fossil teeth, would render such antiquity probable for the skull, without, however, demonstrably proving it. I shall further remark, that No. lxiii. of the *Decades Craniorum* of Blumenbach, which represents a Dutch skull from the Isle of Marken (*Batavus Genuinus*), offers a great resemblance with that of the Neanderthal. To conclude, I consider that the remains are probably the most ancient vestige of the inhabitants of Europe."

"*Observations on the Neanderthal Skull by M. Pruner-Bey.*—In reporting on the judicious observations of Dr. Schaffhausen, which you have just heard read, I shall, in the first place, inquire in what this skull can be found to resemble those of the apes. It is the frontal region which has given it this definition; I place before you the skull of a young chimpanzee, the ape whose skull most resembles that of man, and also the skull of an adult gorilla. The human skull exhibits a strange development of the supraciliary arches, and above them a singular low and receding forehead; at the first glance an observer might entertain the indicated opinion for a moment. I shall proceed to examine the details.

"In the man, the supraciliary eminences are distinctly separated from the glabella; their base, attached to the frontal, is very large, with narrow edges and a hollow interior. In the two apes these relations are found in an inverse degree; the forehead is bounded by a continuous crest, slender at its base, enlarged at its edges, and its interior is filled with diploë. Excluding all that relates to the exaggerated prominence of the crest in the ape, I shall ask whether it is resemblance or dissimilarity which is exhibited in the specimen before us. For my part, I consider that it is the latter. Before proceeding to the classification of the Neanderthal skull, let us remember that the supraciliary arches exhibit a large development in savage races, as for example in the New Caledonians and Australians; in the last, as well as the Tasmanians, the frontal sinus is frequently absent. Let us further notice, that the greatest part of the ancient skulls found in Europe also show an exaggerated development of the supraciliary arches, which, nevertheless, does attain that of the skull before us. Nevertheless, we already know two cases, where ancient brachycephalic skulls, by the same peculiarity, have produced on observers the same impression. One of these skulls is that of which I have just shown you the lower jaw, and which was derived from a Swiss brachycephale. The other is that of Borreby, in Denmark, figured in the last work of Sir C. Lyell. There are, then, in different races, individual cases exhibiting the same peculiarity. Let us now try if it is possible to classify the Neanderthal skull. Is it the representative of a lost race, or can it be identified with any of the stocks which are known to us? In my opinion, it is undoubtedly the skull of a Celt; it belonged to a large individual; it is capacious and dolichocephalic; it presents the depression on the posterior third

of the sagittal suture, common to the Celts and Scandinavians; and finally, its occipital projection is equally characteristic of these two races. To give greater weight to my assertion, I shall place before you three ancient skulls, of which one is that of an Allobroge or Helvetian, of Switzerland. The two others were derived from Ireland. Whilst they all present the same general type, these three skulls exhibit slight differences. There even exists a fourth variety, represented in the collection of Retzius by an ancient Belgian, whose skull is more compressed laterally than that of the first Irishman, which is almost cylindrical. Let us remark that in the gallery of the Museum there is a sufficiently numerous series of ancient French skulls of the same type in every respect as those which we have before us. Further, in comparing the drawings which we have of ancient dolichocephali, discovered at Engis by M. Schmerling, and at Meilen, in the Lake of Zürich, we ascertain that the first corresponds to the second Irish skull, and the second to the Swiss skull. We may also remember that Mr. Schaaffhausen has already remarked the resemblance between the Neanderthal skull and the Belgian, figured by Blumenbuch.

“Without at this time entering into descriptive details respecting the ancient Celtic skull, you will recognise with me that all the ancient skulls before us present a very depressed forehead, compared with the enormous facial development. Do not let us forget at this time the law of compensation, for that which the forehead of the ancient Celt loses in height, it gains in length. It is also very remarkable that the ancient skull of the female Celt presents, contrariwise to that of her husband, a finely elevated forehead, and something very charming in the face. The female skull I present to you is a contemporary of the Allobroge or Helvetian. It equals in thickness that of the Australian.

“You will see by the annexed note that the Neanderthal skull does not essentially diverge from its *frères d'origines*, the three Celts whose skulls are before us; taking the three measurements possible on the calvarium.

MEASURES TAKEN ON THE FOUR SKULLS (IN CENTIMETRES).

	Length.	Breadth.	Circumference at the level of the supracliliary ridges.	Circumference above the supracliliary ridges.
Neanderthal	20·5	15·0	59	56
Helvetian	19·5	14·5	57	55
Irish (No. 1)	20·0	15·0	58	57
Irish (No. 2)	20·5	14·3	57	56

“But are these skulls really Celtic? What proof have we of this allegation? 1st. The locality whence they were derived belongs, unquestionably, to the ancient Celtic area. 2nd. Comparison by the retrogressive or progressive method with skulls of Bretons, French, and modern Irishmen, in which the mass are undoubtedly Celtic,

confirms our opinion. Although the Celtic skull has undergone some secondary modifications, its type is at the present day the same as in the most remote ages. I refer to the beautiful series of modern skulls in the Museum, derived from Brittany, and to my own collection of modern Irish skulls.

“Another question may be demanded regarding the osseous relic from the Neanderthal. Was it the skull of an idiot? If an idiot is necessarily, absolutely, and always a microcephale, our Celt, who possessed so large a cranial capacity, could not have been included in this category. Nevertheless, if the deep depressions which the cerebral convolutions have left in the cranial cavity, as well as the prominence of the supraciliary ridges, should, according to MM. Gratiolet and Broca, bear witness in favour of this opinion, I would incline to accept this hypothesis. The condition of idiocy has its degrees like every other affection of the kind; and it is possible that we may have before us the skull of an individual in whom the intelligence was developed. As nevertheless, I stand here before a whole pleiades of scientific brethren, who have pursued these investigations far more than myself, I must leave the decision of this question to judges in every subject more competent than myself.

“To sum up shortly the results of our study.

“1. Although we have already descended to the level of the drift, we do not yet see, at least in this part of Europe, anything which denotes the horizon which indicates the filiation of man with the ape.

“2. Until we have further information, there is nothing known respecting the resemblance of the pretended primitive man of Europe with the Australians, Caribs, negroes, etc.

“3. On the other hand, we find ourselves in the most remote antiquity in the presence of two distinct races, of which the descendants survive to the present day.”

When this paper by M. Pruner Bey was read before the Paris Society, M. Broca made the following highly valuable and important observations thereon. He said:—“The whole of M. Pruner Bey’s arguments repose on one basis, the knowledge whether the peculiar form of the Neanderthal skull is pathological. As we have never seen such a skull, and do not wish to admit that it belonged to a race of which no other vestige remains to us, we are forced to seek a morbid origin for the peculiarities which it presents. But I believe myself able to demonstrate that this skull could not be derived from an idiot; what is indicated by the fact, in both the idiot and the gorilla, of the prominence of the supraciliary arches and the retrocession of the forehead? It is indicated that the cerebral mass is not greatly voluminous, and that the anterior and posterior lobes converge towards the ideal centre of the head. No such condition is produced in any other form excepting than that which is concomitant with microcephaly. But the Neanderthal skull is not that of a microcephale.

“Two years ago I saw at Bicêtre, an idiot who had an enormous head, and of whom the appearance appeared to contradict the opinion of those who attribute importance to the volume of the brain in intel-

lectual manifestations. But at the autopsy we found the cranial integuments with their osseous case irregularly thick. The brain was, in reality, very small; it weighed less than 1,100 grammes, but its size precluded its arrangement amongst microcephali. To find a skull comparable to that of the Neanderthal, we must have recourse to the microcephalic idiot. As for the large impressions, indications of convolutions few in number, this character actually exists in idiots, but it also exists in all men with large convolutions, and in the individuals of inferior races. So that the brain of the Neanderthal man may merely be that of an individual of inferior race. To sum up my objection in a few words; idiocy, capable of producing such a skull is necessarily microcephalic; but this skull is not that of a microcephale; therefore it is not that of an idiot."

In the above remarks I have endeavoured to give a fair epitome of the state of the controversy respecting the skeleton from the Neanderthal, so far as it has been recently carried on in France and Germany. I have abstained from offering any opinion of my own on this topic, and from attempting to collate the testimony of so many discrepant observers. When photographs are given by one writer,* which purport to exhibit structures which the possessor of the original specimen declares to be absent, it would be futile for any person who has not the specimen before him to attempt to offer an opinion which could be capable of reconciling such conflicting statements. Doubtless, future speculators will have some more tangible ground whereon to found their theories than the description of structures whose existence is as yet unproven. But I must reply to those who say that the *onus probandi* lies upon those zoologists who may assert that the Neanderthal skull once belonged to an idiot. As a question of logical truth, there is no *onus* in the case; no need why any hypothesis should be propounded into which the known facts of the case should be compressed as best they may, and the future facts which may be discovered ignored, in order that a convenient theory may be at once generally accepted. Taking the several hypotheses; that the skull in question is that of a low "pithecoïd" race of man, with many affinities to the Australian, or other dark races; that it is a distinct species, or even distinct genus of *Anthropini*; that it was the skull of a powerfully organised Celt of low mental organisation, but in race identical with the historical Celt; or that it was the skull of an individual in whom rachitis or some congenital defect or even accident, may have combined to produce the pathological condition of the *ulna*, the abnormal form of the ribs, the peculiar frontal conformation which is associated with several of the forms of the macrocephalic idiot, and the hypertrophied condition of the cranial walls; it is our duty to test these hypotheses severally, and give due allowance for the small proportion of truth there may be in each of them. Forensic skill may advocate any one of these hypotheses; it may select the favoured theory, whilst suppressing, ignoring, or distorting the opinions and facts of other observers; it may place the diverging arguments in

* See Huxley. Evidence as to Man's Place in Nature, p. 141, fig. 26. 8vo. Lond. 1863.

such a form as to shift the *onus* on the opponent, instead of adopting the more difficult, although more conclusive procedure, of proving one's own case; and the recital of one or two of the above arguments may be promulgated as "evidence" as to the place in nature of an enigmatical or singular form. But such methods of reasoning are not those of the inquirer, who, accepting the evidence of the possessor of the skull as to its physical conformation, declines to express an opinion as to its probable or hypothetical relationship with those of tribes at the antipodes; who admits that the state of our knowledge respecting the posterior portion of the skull is inadequate on which to found any generalisation; and who recognises in the great development of the supraorbital ridges nothing more than the mere exaggeration of a cranial type common in many of the lower Celtic and Teutonic forms. Such are the few ascertainable facts; the hypothesis of idiocy, although it may be rejected by those who have not enjoyed the pleasure of inspecting the skull any more than myself, has as great evidence on its side as any of the divergent and discrepant theories above cited. Its nature, however, essentially precludes its conclusive demonstration; and I hope that no one will misunderstand me so far as to consider that I am committed *simpliciter* to its avowal.

Whilst the question of the mental endowments of the Neanderthal man must remain for a long period unanswered, I am afraid that the speculations of Professor King as to the precise theological belief professed by the individual must remain in abeyance. Evidence has been, and will be, laid before anthropologists in Europe to prove that the belief in a God is not an inherent idea in the mind of all savages; but to enter into that question would take me far beyond the limits of this paper. As regards, however, the generic distinction of the Neanderthal man from the *homo sapiens* of our monogenistic ancestors, or the many unnamed species of man whose separate existence polygenists may affirm, I cannot see the grounds on which generic distinction can be affirmed. If, however, such there be, the rules of the binomial nomenclature suggest that a new generic and specific name should be given to the *Homo Neanderthalensis*. Although I will not undertake the task of describing the new genus of manlike beast which is indicated "*abest omnium proxime a simiis*," until my friend Mr. Winwood Reade shall have brought us over a few cagfuls of Neanderthaloid apes from Equatorial Africa, I trust that the term *Nidum equinum* may complete all the necessary formalities in the identification of a genus the priority of description in which I leave to the first observer who may wish to develop the *canard*.

Mr. REDDIE hoped that when Mr. Blake's communication was printed, he would give the measurements he had quoted in English measures, so that like things might be compared with like. With respect to the skull that had been the subject of the communication, whatever difference of opinion might exist as to its intellectual developments, and however low the race of man it might indicate, it was, nevertheless, the skull of a man, and not of an ape. The dis-

inction between a man and the inferior animals in their intellectual capacities was so great that they could not be mistaken. The gorilla, for example, might have sufficient sense to warm itself at a fire made by negroes, but it had not common sense enough to put on more logs of wood to keep the fire burning.

Mr. ALFRED R. WALLACE said he had examined the extensive series of crania in the Museum at Oxford, where there are crania of New Zealanders, of Australians, the natives of New Guinea, and of other aboriginal tribes, for the purpose of observing if there were any corresponding peculiarities. He was enabled to discover that some of the Australian crania agreed with the Neanderthal skull, in general shape, in the slanting forehead, the orbital ridges, and in other particulars, and the impression on his mind was that they were exactly of the same type. But that was not, however, the usual form of Australian skulls, for there were others very different. The majority of them, indeed, were totally different, whilst there were others that had an intermediate form. The skulls of the Van Dieman's Land natives also approached in general form to the Neanderthal skull. In some burial grounds in this country there are occasionally to be found skulls which nearly approximate to those of Australians. These facts showed how difficult it is to draw general results from agreements in the forms of different crania. He felt satisfied that there was no reason to believe that the Neanderthal skull belonged to any other than a savage race of man in a low state of development, and that it was not the skull of an idiot, but of a common man of the same race.

Mr. BOUVERIE PUSEY said the speech of Mr. Wallace suggested the question whether the Australian skulls he examined at Oxford belonged to natives of the same tribe, or whether they were the skulls of different tribes?

Mr. WALLACE said he was unable to answer the question.

Sir CHARLES NICHOLSON observed that his own experience and recollection confirmed Mr. Wallace's statement respecting the resemblance of the skull in question to those of some skulls of Australians. It reminded him strongly of skulls he had seen in Australia, though there were some peculiarities in it. There were to be found among the natives of Australia great varieties; for though there were some extremely low types among them, there were others, again, so different that it was difficult to distinguish their skulls from those of Europeans. An instance of this occurred at Sydney, in the Museum of which town there was a collection of the skulls of transported criminals, and of the aborigines; but the labels on them having been accidentally lost, many of them could not be distinguished, and to this day no one could tell which was which. It was a curious fact, he observed, that some of the lowest types of animal and vegetable life should be now found living in Australia which had long since been extinct in Europe. In Australia, where the aboriginal human races are fast dying out, there are still existing types of the flora and fauna of the earliest period in which they appeared on the earth in Europe. For example, the first fossil mammal that

occurred in the ascending series of strata was a marsupial animal, corresponding in general character with those now living in Australia, where there are several existing analogues of the fossil flora and fauna, extinct in this part of the world. Sir Charles Nicholson expressed the hope that new light would shortly be thrown on the relations of the lower types of animals with the higher by the investigations of Professor Owen, who is now in France, making observations *in situ* on the organic remains found in some ancient caverns.

Mr. CARTER BLAKE, in reply, alluded in the first place to the suggestion of Mr. Reddie that the measurements he had quoted should be given in English measures. He said he should certainly not undertake to change the French measures into English, but he should be glad, on the contrary, to see the reverse done, as the decimal measures were much more convenient, and more generally applicable for the use of scientific men. With respect to the varieties said to exist among the tribes of Australia, it was evident from what had been stated that manifestly distinct forms of skulls were to be found there, but it was a question whether there were wider differences among the natives of Australia than of any other country. Professor Huxley had called attention to a skull in the Museum of the College of Surgeons which resembled the Neanderthal skull. It seemed, indeed, useless to go so far as Australia to look for corresponding forms of skulls, while similar forms were to be found in Ireland, Scotland, and in many other places nearer home. He hoped that what he had said would not be taken as throwing any doubt on the transmutation theory, which he considered a very rational hypothesis. Though the assumed great antiquity of the Neanderthal skull might be proved to be an error, which had arisen from the misrepresentations of German describers of the circumstances in which it was found, he felt assured they had only to wait until some other discoveries would be made which would confirm the transmutation theory, and such discoveries, he thought, might be shortly forthcoming.

The meeting then adjourned.

MARCH 1ST, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

The minutes of the last meeting were read and confirmed.

The following new Fellows were announced:—The Rev. Dr. J. Bosworth; F. Chance, Esq.; B. Bond Cabbell, Esq., F.R.S.; C. C. Babington, Esq., F.R.S.; F. Carulla, Esq.; H. Charlton, Esq.; G. Critchett, Esq.; C. Capper, Esq.; H. Campbell, Esq.; H. Crowley, Esq.

The Origin of Human Races and the Antiquity of Man deduced from the theory of "Natural Selection." By ALFRED R. WALLACE, Esq., F.Z.S.

AMONG the most advanced students of man, there exists a wide difference of opinion on some of the most vital questions respecting his nature and origin. Anthropologists are now, indeed, pretty well agreed that man is not a recent introduction into the earth. All who have studied the question now admit that his antiquity is very great; and that, though we have to some extent ascertained the minimum of time during which he *must* have existed, we have made no approximation towards determining that far greater period during which he *may* have, and probably *has*, existed. We can with tolerable certainty affirm that man must have inhabited the earth a thousand centuries ago, but we cannot assert that he positively did not exist, or that there is any good evidence against his having existed, for a period of a hundred thousand centuries. We know positively that he was contemporaneous with many now extinct animals, and has survived changes of the earth's surface fifty or a hundred times greater than any that have occurred during the historical period; but we cannot place any definite limit to the number of species he may have outlived, or to the amount of terrestrial change he may have witnessed.

But while on this question of man's antiquity there is a very general agreement,—and all are waiting eagerly for fresh evidence to clear up those points which all admit to be full of doubt,—on other and not less obscure and difficult questions a considerable amount of dogmatism is exhibited; doctrines are put forward as established truth, no doubt or hesitation is admitted, and it seems to be supposed that no further evidence is required, or that any new facts can modify our convictions. This is especially the case when we inquire, *Are the various forms under which man now exists primitive, or derived from preexisting forms; in other words, is man of one or many species?* To this question we immediately obtain distinct answers diametrically opposed to each other: the one party positively maintaining that man is a *species* and is essentially *one*—that all differences are but local and temporary variations, produced by the different physical and moral conditions by which he is surrounded; the other party maintaining with equal confidence that man is a genus of *many species*, each of which is practically unchangeable, and has ever been as distinct, or even more distinct, than we now behold them. This difference of opinion is somewhat remarkable, when we consider that both parties are well acquainted with the subject; both use the same vast accumulation of facts; both reject those early traditions of mankind which profess to give an account of his origin; and both declare that they are seeking fearlessly after truth alone. I believe, however, it will be found to be the old story over again of the shield—gold on one side and silver on the other—about which the knights disputed; each party will persist in looking only at the portion of truth on his own side of the question, and at the error which is mingled with his opponent's doctrine. It is my wish to show how the two opposing

views can be combined so as to eliminate the error and retain the truth in each, and it is by means of Mr. Darwin's celebrated theory of "Natural Selection" that I hope to do this, and thus to harmonise the conflicting theories of modern anthropologists.

Let us first see what each party has to say for itself. In favour of the unity of mankind it is argued that there are no races without transitions to others; that every race exhibits within itself variations of colour, of hair, of feature, and of form, to such a degree as to bridge over to a large extent the gap that separates it from other races. It is asserted that no race is homogeneous; that there is a tendency to vary; that climate, food, and habits produce and render permanent physical peculiarities, which, though slight in the limited periods allowed to our observation, would, in the long ages during which the human race has existed, have sufficed to produce all the differences that now appear. It is further asserted that the advocates of the opposite theory do not agree among themselves; that some would make three, some five, some fifty or a hundred and fifty species of man; some would have had each species created in pairs, while others require nations to have at once sprung into existence, and that there is no stability or consistency in any doctrine but that of one primitive stock.

The advocates of the original diversity of man, on the other hand, have much to say for themselves. They argue that proofs of change in man have never been brought forward except to the most trifling amount, while evidence of his permanence meets us everywhere. The Portuguese and Spaniards, settled for two or three centuries in South America, retain their chief physical, mental, and moral characteristics; the Dutch boers at the Cape, and the descendants of the early Dutch settlers in the Moluccas, have not lost the features or the colour of the Germanic races; the Jews, scattered over the world in the most diverse climates, retain the same characteristic lineaments everywhere; the Egyptian sculptures and paintings show us that, for at least 4000 or 5000 years, the strongly contrasted features of the Negro and the Semitic races have remained altogether unchanged; while more recent discoveries prove that, in the case at least of the American aborigines, the mound-builders of the Mississippi valley, and the dwellers on Brazilian mountains, had still in the very infancy of the human race the same characteristic type of cranial formation that now distinguishes them.

If we endeavour to decide impartially on the merits of this difficult controversy, judging solely by the evidence that each party has brought forward, it certainly seems that the best of the argument is on the side of those who maintain the primitive diversity of man. Their opponents have not been able to refute the permanence of existing races as far back as we can trace them, and have failed to show, in a single case, that at any former epoch the well marked varieties of mankind approximated more closely than they do at the present day. At the same time this is but negative evidence. A condition of immobility for four or five thousand years, does not preclude an advance at an earlier epoch, and—if we can show that there

are causes in nature which would check any further physical change when certain conditions were fulfilled—does not even render such an advance improbable, if there are any general arguments to be adduced in its favour. Such a cause, I believe, does exist, and I shall now endeavour to point out its nature and its mode of operation.

In order to make my argument intelligible, it is necessary for me to explain very briefly the theory of "Natural Selection" promulgated by Mr. Darwin, and the power which it possesses of modifying the forms of animals and plants. The grand feature in the multiplication of organic life is that of close general resemblance, combined with more or less individual variation. The child resembles its parents or ancestors more or less closely in all its peculiarities, deformities, or beauties; it resembles them in general more than it does any other individuals; yet children of the same parents are not all alike, and it often happens that they differ very considerably from their parents and from each other. This is equally true of man, of all animals, and of all plants. Moreover, it is found that individuals do not differ from their parents in certain particulars only, while in all others they are exact duplicates of them. They differ from them and from each other in every particular: in form, in size, in colour, in the structure of internal as well as of external organs; in those subtle peculiarities which produce differences of constitution, as well as in those still more subtle ones which lead to modifications of mind and character. In other words, in every possible way, in every organ and in every function, individuals of the same stock vary.

Now, health, strength, and long life are the results of a harmony between the individual and the universe that surrounds it. Let us suppose that at any given moment this harmony is perfect. A certain animal is exactly fitted to secure its prey, to escape from its enemies, to resist the inclemencies of the seasons, and to rear a numerous and healthy offspring. But a change now takes place. A series of cold winters, for instance, come on, making food scarce, and bringing an immigration of some other animals to compete with the former inhabitants of the district. The new immigrant is swift of foot, and surpasses its rivals in the pursuit of game; the winter nights are colder, and require a thicker fur as a protection, and more nourishing food to keep up the heat of the system. Our supposed perfect animal is no longer in harmony with its universe; it is in danger of dying of cold or of starvation. But the animal varies in its offspring. Some of these are swifter than others—they still manage to catch food enough; some are hardier and more thickly furred—they manage in the cold nights to keep warm enough; the slow, the weak, and the thinly clad soon die off. Again and again, in each succeeding generation, the same thing takes place. By this natural process, which is so inevitable that it cannot be conceived not to act, those best adapted to live, live; those least adapted, die. It is sometimes said that we have no direct evidence of the action of this selecting power in nature. But it seems to me we have better evidence than even direct observation would be, because it is more universal, viz., the evidence of necessity. It must be so; for, as all wild animals in-

crease in a geometrical ratio, while their actual numbers remain on the average stationary, it follows that as many die annually as are born. If therefore, we deny natural selection, it can only be by asserting that in such a case as I have supposed, the strong, the healthy, the swift, the well clad, the well organised animals in every respect, have no advantage over,—do not on the average live longer than the weak, the unhealthy, the slow, the ill-clad, and the imperfectly organised individuals; and this no sane man has yet been found hardy enough to assert. But this is not all; for the offspring on the average resemble their parents, and the selected portion of each succeeding generation will therefore be stronger, swifter, and more thickly furred than the last; and if this process goes on for thousands of generations, our animal will have again become thoroughly in harmony with the new conditions in which he is placed. But he will now be a different creature. He will be not only swifter and stronger, and more furry, he will also probably have changed in colour, in form, perhaps have acquired a longer tail, or differently shaped ears; for it is an ascertained fact, that when one part of an animal is modified, some other parts almost always change as it were in sympathy with it. Mr. Darwin calls this "*correlation of growth*," and gives as instances that hairless dogs have imperfect teeth; blue eyed cats are deaf; small feet accompany short beaks in pigeons; and other equally interesting cases.

Grant, therefore, the premises: 1st. That peculiarities of every kind are more or less hereditary. 2nd. That the offspring of every animal vary more or less in all parts of their organisation. 3rd. That the universe in which these animals live, is not absolutely invariable;—none of which propositions can be denied; and then consider that the animals in any country (those at least which are not dying out) must at each successive period be brought into harmony with the surrounding conditions; and we have all the elements for a change of form and structure in the animals, keeping exact pace with changes of whatever nature in the surrounding universe. Such changes must be slow, for the changes in the universe are very slow; but just as these slow changes become important, when we look at results after long periods of action, as we do when we perceive the alterations of the earth's surface during geological epochs; so the parallel changes in animal form become more and more striking according as the time they have been going on is great, as we see when we compare our living animals with those which we disentomb from each successively older geological formation.

This is briefly the theory of "natural selection," which explains the changes in the organic world as being parallel with, and in part dependent on those in the inorganic. What we now have to inquire is,—Can this theory be applied in any way to the question of the origin of the races of man? or is there anything in human nature that takes him out of the category of those organic existences, over whose successive mutations it has had such powerful sway?

In order to answer these questions, we must consider why it is that "natural selection" acts so powerfully upon animals, and we shall, I

believe, find that its effect depends mainly upon their self-dependence and individual isolation. A slight injury, a temporary illness, will often end in death, because it leaves the individual powerless against its enemies. If a herbivorous animal is a little sick and has not fed well for a day or two, and the herd is then pursued by a beast of prey, our poor invalid inevitably falls a victim. So in a carnivorous animal the least deficiency of vigour prevents its capturing food, and it soon dies of starvation. There is, as a general rule, no mutual assistance between adults, which enables them to tide over a period of sickness. Neither is there any division of labour; each must fulfil *all* the conditions of its existence, and, therefore, "natural selection" keeps all up to a pretty uniform standard.

But in man, as we now behold him, this is different. He is social and sympathetic. In the rudest tribes the sick are assisted at least with food; less robust health and vigour than the average does not entail death. Neither does the want of perfect limbs or other organs produce the same effects as among animals. Some division of labour takes place; the swiftest hunt, the less active fish, or gather fruits; food is to some extent exchanged or divided. The action of natural selection is therefore checked; the weaker, the dwarfish, those of less active limbs, or less piercing eyesight, do not suffer the extreme penalty which falls upon animals so defective.

In proportion as these physical characteristics become of less importance, mental and moral qualities will have increasing influence on the well-being of the race. Capacity for acting in concert, for protection and for the acquisition of food and shelter; sympathy, which leads all in turn to assist each other; the sense of right, which checks depredations upon our fellows; the decrease of the combative and destructive propensities; self-restraint in present appetites; and that intelligent foresight which prepares for the future, are all qualities that from their earliest appearance must have been for the benefit of each community, and would, therefore, have become the subjects of "natural selection." For it is evident that such qualities would be for the well-being of man; would guard him against external enemies, against internal dissensions, and against the effects of inclement seasons and impending famine, more surely than could any merely physical modification. Tribes in which such mental and moral qualities were predominant, would therefore have an advantage in the struggle for existence over other tribes in which they were less developed, would live and maintain their numbers, while the others would decrease and finally succumb.

Again, when any slow changes of physical geography, or of climate, make it necessary for an animal to alter its food, its clothing, or its weapons, it can only do so by a corresponding change in its own bodily structure and internal organisation. If a larger or more powerful beast is to be captured and devoured, as when a carnivorous animal which has hitherto preyed on sheep is obliged from their decreasing numbers to attack buffaloes, it is only the strongest who can hold,—those with most powerful claws, and formidable canine teeth, that can struggle with and overcome such an animal. Natural

selection immediately comes into play, and by its action these organs gradually become adapted to their new requirements. But man, under similar circumstances, does not require longer nails or teeth, greater bodily strength or swiftness. He makes sharper spears, or a better bow, or he constructs a cunning pitfall, or combines in a hunting party to circumvent his new prey. The capacities which enable him to do this are what he requires to be strengthened, and these will, therefore, be gradually modified by "natural selection," while the form and structure of his body will remain unchanged. So when a glacial epoch comes on, some animals must acquire warmer fur, or a covering of fat, or else die of cold. Those best clothed by nature are, therefore, preserved by natural selection. Man, under the same circumstances, will make himself warmer clothing, and build better houses; and the necessity of doing this will react upon his mental organisation and social condition—will advance them while his natural body remains naked as before.

When the accustomed food of some animal becomes scarce or totally fails, it can only exist by becoming adapted to a new kind of food, a food perhaps less nourishing and less digestible. "Natural selection" will now act upon the stomach and intestines, and all their individual variations will be taken advantage of to modify the race into harmony with its new food. In many cases, however, it is probable that this cannot be done. The internal organs may not vary quick enough, and then the animal will decrease in numbers, and finally become extinct. But man guards himself from such accidents by superintending and guiding the operations of nature. He plants the seed of his most agreeable food, and thus procures a supply independent of the accidents of varying seasons or natural extinction. He domesticates animals which serve him either to capture food or for food itself, and thus changes of any great extent in his teeth or digestive organs are rendered unnecessary. Man, too, has everywhere the use of fire, and by its means can render palatable a variety of animal and vegetable substances, which he could hardly otherwise make use of, and thus obtains for himself a supply of food far more varied and abundant than that which any animal can command.

Thus man, by the mere capacity of clothing himself, and making weapons and tools, has taken away from nature that power of changing the external form and structure which she exercises over all other animals. As the competing races by which they are surrounded, the climate, the vegetation, or the animals which serve them for food, are slowly changing, they must undergo a corresponding change in their structure, habits, and constitution, to keep them in harmony with the new conditions—to enable them to live and maintain their numbers. But man does this by means of his intellect alone; which enables him with an unchanged body still to keep in harmony with the changing universe.

From the time, therefore, when the social and sympathetic feelings came into active operation, and the intellectual and moral faculties became fairly developed, man would cease to be influenced by "natural selection" in his physical form and structure; as an

animal he would remain almost stationary; the changes of the surrounding universe would cease to have upon him that powerful modifying effect which it exercises over other parts of the organic world. But from the moment that his body became stationary, his mind would become subject to those very influences from which his body had escaped; every slight variation in his mental and moral nature which should enable him better to guard against adverse circumstances, and combine for mutual comfort and protection, would be preserved and accumulated; the better and higher specimens of our race would therefore increase and spread, the lower and more brutal would give way and successively die out, and that rapid advancement of mental organisation would occur, which has raised the very lowest races of man so far above the brutes, (although differing so little from some of them in physical structure), and, in conjunction with scarcely perceptible modifications of form, has developed the wonderful intellect of the Germanic races.

But from the time when this mental and moral advance commenced, and man's physical character became fixed and immutable, a new series of causes would come into action, and take part in his mental growth. The diverse aspects of nature would now make themselves felt, and profoundly influence the character of the primitive man.*

When the power that had hitherto modified the body, transferred its action to the mind, then races would advance and become improved merely by the harsh discipline of a sterile soil and inclement seasons. Under their influence, a hardier, a more provident, and a more social race would be developed, than in those regions where the earth produces a perennial supply of vegetable food, and where neither foresight nor ingenuity are required to prepare for the rigours of winter. And is it not the fact that in all ages, and in every quarter of the globe, the inhabitants of temperate have been superior to those of tropical countries? All the great invasions and displacements of races have been from North to South, rather than the reverse; and we have no record of there ever having existed, any more than there exists to-day, a solitary instance of an indigenous inter-tropical civilisation. The Mexican civilisation and government came from the North, and, as well as the Peruvian, was established, not in the rich tropical plains, but on the lofty and sterile plateaux of the Andes. The religion and civilisation of Ceylon were introduced from North India; the successive conquerors of the Indian peninsula came from the North-west, and it was the bold and adventurous tribes of the North that overran and infused new life into Southern Europe.

It is the same great law of "*the preservation of favoured races in the struggle for life*," which leads to the inevitable extinction of all

* M. Guizot says: "If we regard the immediate influence of climate upon men, perhaps it is not so extensive as has been supposed. But the indirect influence of climate, that which, for example, results from the fact that, in a warm country, men live in the open air, while in a cold country they shut themselves up in their houses; that in the one case they nourish themselves in one manner, in the other in another;—these are facts of great importance, facts which, by the simple difference of material life, act powerfully upon civilisation." (*Hist. of Civilisation in Europe.*)

those low and mentally undeveloped populations with which Europeans come in contact. The red Indian in North America, and in Brazil; the Tasmanian, Australian and New Zealander in the southern hemisphere, die out, not from any one special cause, but from the inevitable effects of an unequal mental and physical struggle. The intellectual and moral, as well as the physical qualities of the European are superior; the same powers and capacities which have made him rise in a few centuries from the condition of the wandering savage* with a scanty and stationary population to his present state of culture and advancement, with a greater average longevity, a greater average strength, and a capacity of more rapid increase,—enable him when in contact with the savage man, to conquer in the struggle for existence, and to increase at his expense, just as the more favourable increase at the expense of the less favourable varieties in the animal and vegetable kingdoms, just as the weeds of Europe overrun North America and Australia, extinguishing native productions by the inherent vigour of their organisation, and by their greater capacity for existence and multiplication.

If these views are correct; if in proportion as man's social, moral and intellectual faculties became developed, his physical structure would cease to be affected by the operation of "natural selection," we have a most important clue to the origin of races. For it will follow, that those striking and constant peculiarities which mark the great divisions of mankind, could not have been produced and rendered permanent after the action of this power had become transferred from physical to mental variations. They must, therefore, have existed since the very infancy of the race; they must have originated at a period when man was gregarious, but scarcely social, with a mind perceptive but not reflective, ere any sense of *right* or feelings of *sympathy* had been developed in him.

By a powerful effort of the imagination, it is just possible to perceive him at that early epoch existing as a single homogeneous race without the faculty of speech, and probably inhabiting some tropical region. He would be still subject, like the rest of the organic world, to the action of "natural selection," which would retain his physical form and constitution in harmony with the surrounding universe. He must have been even then a dominant race, spreading widely over the warmer regions of the earth as it then existed, and, in agreement with what we see in the case of other dominant species, gradually becoming modified in accordance with local conditions. As he ranged farther from his original home, and became exposed to greater extremes of climate, to greater changes of food, and had to contend with new enemies, organic and inorganic, useful variations in his constitution would be selected and rendered permanent, and would, on the principle of "correlation of growth", be accompanied

* "It is probable that the present state and condition of New Zealand exhibit more nearly than any other the condition of Britain when the Romans entered it." (Turner, *Hist. of Anglo-Saxons*, i, p. 69.) "When the Romans first became acquainted with Germany, the natives had advanced but a few steps beyond the savage state." (*Encyc. Brit.*, art. Germany.)

by corresponding external physical changes. Thus arose those striking characteristics and special modifications which still distinguish the chief races of mankind. The red, black, yellow, or blushing white skin; the straight, the curly, the woolly hair; the scanty or abundant beard; the straight or oblique eyes; the various forms of the pelvis, the cranium, and other parts of the skeleton.

But while these changes had been going on, his mental development had correspondingly advanced, and had now reached that condition in which it began powerfully to influence his whole existence, and would therefore, become subject to the irresistible action of "natural selection." This action would rapidly give the ascendancy to mind: speech would probably now be first developed, leading to a still further advance of the mental faculties, and from that moment man as regards his physical form would remain almost stationary. The art of making weapons, division of labour, anticipation of the future, restraint of the appetites, moral, social and sympathetic feelings, would now have a preponderating influence on his well being, and would therefore be that part of his nature on which "natural selection" would most powerfully act; and we should thus have explained that wonderful persistence of mere physical characteristics, which is the stumbling-block of those who advocate the unity of mankind.

We are now, therefore, enabled to harmonise the conflicting views of anthropologists on this subject. Man may have been, indeed I believe must have been, once a homogeneous race; but it was at a period of which we have as yet discovered no remains, at a period so remote in his history, that he had not yet acquired that wonderfully developed brain, the organ of the mind, which now, even in his lowest examples, raises him far above the highest brutes;—at a period when he had the form but hardly the nature of man, when he neither possessed human speech, nor those sympathetic and moral feelings which in a greater or less degree everywhere now distinguish the race. Just in proportion as these truly human faculties became developed in him would his physical features become fixed and permanent, because the latter would be of less importance to his well being; he would be kept in harmony with the slowly changing universe around him, by an advance in mind, rather than by a change in body. If, therefore, we are of opinion that he was not really man till these higher faculties were developed, we may fairly assert that there were many originally distinct races of men; while, if we think that a being like us in form and structure, but with mental faculties scarcely raised above the brute, must still be considered to have been human, we are fully entitled to maintain the common origin of all mankind.

These considerations, it will be seen, enable us to place the origin of man at a much more remote geological epoch than has yet been thought possible. He may even have lived in the Eocene or Miocene period, when not a single mammal possessed the same form as any existing species. For, in the long series of ages during which the forms of these primeval mammals were being slowly specialised into those now inhabiting the earth, the power which acted to modify them would

only affect the mental organisation of man. His brain alone would have increased in size and complexity and his cranium have undergone corresponding changes of form, while the whole structure of lower animals was being changed. This will enable us to understand how the fossil crania of Denise and Engis agree so closely with existing forms, although they undoubtedly existed in company with large mammalia now extinct. The Neanderthal skull may be a specimen of one of the lowest races then existing, just as the Australians are the lowest of our modern epoch. We have no reason to suppose that mind and brain and skull-modification, could go on quicker than that of the other parts of the organisation, and we must, therefore, look back very far in the past to find man in that early condition in which his mind was not sufficiently developed to remove his body from the modifying influence of external conditions, and the cumulative action of "natural selection." I believe, therefore, that there is no *a priori* reason against our finding the remains of man or his works, in the middle or later tertiary deposits. The absence of all such remains in the European beds of this age has little weight, because as we go further back in time, it is natural to suppose that man's distribution over the surface of the earth was less universal than at present. Besides, Europe was in a great measure submerged during the tertiary epoch, and though its scattered islands may have been uninhabited by man, it by no means follows that he did not at the same time exist in warm or tropical continents. If geologists can point out to us the most extensive land in the warmer regions of the earth, which has not been submerged since eocene or miocene times, it is there that we may expect to find some traces of the very early progenitors of man. It is there that we may trace back the gradually decreasing brain of former races, till we come to a time when the body also begins materially to differ. Then we shall have reached the starting point of the human family. Before that period, he had not mind enough to preserve his body from change, and would, therefore, have been subject to the same comparatively rapid modifications of form as the other mammals.

If the views I have here endeavoured to sustain have any foundation, they give us a new argument for placing man apart, as not only the head and culminating point of the grand series of organic nature, but as in some degree a new and distinct order of being. From those infinitely remote ages, when the first rudiments of organic life appeared upon the earth, every plant, and every animal has been subject to one great law of physical change. As the earth has gone through its grand cycles of geological, climatal and organic progress, every form of life has been subject to its irresistible action, and has been continually, but imperceptibly moulded into such new shapes as would preserve their harmony with the ever changing universe. No living thing could escape this law of its being; none could remain unchanged and live, amid the universal change around it.

At length, however, there came into existence a being in whom that subtle force we term *mind*, became of greater importance than his mere bodily structure. Though with a naked and unprotected

body, *this* gave him clothing against the varying inclemencies of the seasons. Though unable to compete with the deer in swiftness, or with the wild bull in strength, *this* gave him weapons with which to capture or overcome both. Though less capable than most other animals of living on the herbs and the fruits that unaided nature supplies, this wonderful faculty taught him to govern and direct nature to his own benefit, and make her produce food for him when and where he pleased. From the moment when the first skin was used as a covering, when the first rude spear was formed to assist in the chase, the first seed sown or shoot planted, a grand revolution was effected in nature, a revolution which in all the previous ages of the earth's history had had no parallel, for a being had arisen who was no longer necessarily subject to change with the changing universe—a being who was in some degree superior to nature, inasmuch, as he knew how to control and regulate her action, and could keep himself in harmony with her, not by a change in body, but by an advance of mind.

Here, then, we see the true grandeur and dignity of man. On this view of his special attributes, we may admit that even those who claim for him a position as an order, a class, or a sub-kingdom by himself, have some reason on their side. He is, indeed, a being apart, since he is not influenced by the great laws which irresistibly modify all other organic beings. Nay more; this victory which he has gained for himself gives him a directing influence over other existences. Man has not only escaped "natural selection" himself, but he actually is able to take away some of that power from nature which, before his appearance, she universally exercised. We can anticipate the time when the earth will produce only cultivated plants and domestic animals; when man's selection shall have supplanted "natural selection"; and when the ocean will be the only domain in which that power can be exerted, which for countless cycles of ages ruled supreme over all the earth.

Briefly to recapitulate the argument;—in two distinct ways has man escaped the influence of those laws which have produced unceasing change in the animal world. By his superior intellect he is enabled to provide himself with clothing and weapons, and by cultivating the soil to obtain a constant supply of congenial food. This renders it unnecessary for his body, like those of the lower animals, to be modified in accordance with changing conditions—to gain a warmer natural covering, to acquire more powerful teeth or claws, or to become adapted to obtain and digest new kinds of food, as circumstances may require. By his superior sympathetic and moral feelings, he becomes fitted for the social state; he ceases to plunder the weak and helpless of his tribe; he shares the game which he has caught with less active or less fortunate hunters, or exchanges it for weapons which even the sick or the deformed can fashion; he saves the sick and wounded from death; and thus the power which leads to the rigid destruction of all animals who cannot in every respect help themselves, is prevented from acting on him.

This power is "natural selection"; and, as by no other means can

it be shewn that individual variations can ever become accumulated and rendered permanent so as to form well-marked races, it follows that the differences we now behold in mankind must have been produced before he became possessed of a human intellect or human sympathies. This view also renders possible, or even requires, the existence of man at a comparatively remote geological epoch. For, during the long periods in which other animals have been undergoing modification in their whole structure to such an amount as to constitute distinct genera and families, man's *body* will have remained generically, or even specifically, the same, while his *head* and *brain* alone will have undergone modification equal to theirs. We can thus understand how it is that, judging from the head and brain, Professor Owen places man in a distinct sub-class of mammalia, while, as regards the rest of his body, there is the closest anatomical resemblance to that of the anthropoid apes, "every tooth, every bone, strictly homologous—which makes the determination of the difference between *Homo* and *Pithecus* the anatomist's difficulty." The present theory fully recognises and accounts for these facts; and we may perhaps claim as corroborative of its truth, that it neither requires us to depreciate the intellectual chasm which separates man from the apes, nor refuses full recognition of the striking resemblances to them which exist in other parts of its structure.

In concluding this brief sketch of a great subject, I would point out its bearing upon the future of the human race. If my conclusions are just, it must inevitably follow that the higher—the more intellectual and moral—must displace the lower and more degraded races; and the power of "natural selection", still acting on his mental organisation, must ever lead to the more perfect adaptation of man's higher faculties to the conditions of surrounding nature, and to the exigencies of the social state.* While his external form will probably ever remain unchanged, except in the development of that perfect beauty which results from a healthy and well organised body, refined and ennobled by the highest intellectual faculties and sympathetic emotions, his mental constitution may continue to advance and improve till the world is again inhabited by a single homogeneous race, no individual of which will be inferior to the noblest specimens of existing humanity. Each one will then work out his own happiness in relation to that of his fellows; perfect freedom of action will be maintained, since the well balanced moral faculties will never permit any one to transgress on the equal freedom of others; restrictive laws will not be wanted, for each man will be guided by the best of laws; a thorough appreciation of the rights, and a perfect sympathy with the feelings, of all about him; compulsory government will have died away as unnecessary (for every man will know how to govern himself), and will be replaced by voluntary associations for all beneficial public purposes; the passions and animal propensities will be restrained within those limits which most conduce to happiness; and mankind will have at length discovered

* M. Guizot says: "For myself, I am convinced that there is a destiny of humanity, a transmission of the aggregate of civilisation." (*Civilisation in Europe.*)

that it was only required of them to develop the capacities of their higher nature, in order to convert this earth, which had so long been the theatre of their unbridled passions, and the scene of unimaginable misery, into as bright a paradise as ever haunted the dreams of seer or poet.*

The PRESIDENT proposed a vote of thanks to the author of the paper, and the meeting passed it unanimously.

The following discussion then took place.

Mr. LUKE BURKE said: No one will be surprised at my saying that the lecturer has made the very best of his case. That would be naturally expected, from what we know of Mr. Wallace's antecedents. I have only had the pleasure of hearing one paper from him, but that has given me very great interest and very great respect for his talents. If it had been possible to make a good case out of the theory which has been proposed, Mr. Wallace would have done it; but, unfortunately, the case appears to me to be altogether hopeless. I have three fundamental objections to urge against his theory, and I will confine myself to these; although, of course, there are many minor objections that would occur in regard to incidental remarks. I must, however, not forget to say that the theory by which he accounts for the permanency of human forms as contrasted with the inferior animals is exceedingly ingenious; but, unfortunately, it assumes that one part of the organism can gradually be modified without the requisite correlations in the others. It divorces our power of judging of the mind from the body; and I affirm that we have that power mentally, and not necessarily from the shape of the head. If we had sufficient intelligence, from any one part of the body, we ought to be able to infer everything else, internal and external. We cannot. The cypher is there, only we cannot read it. However, the first objection I have to urge against the theory of Mr. Darwin is, that it completely loses sight of the real point at issue—that it does not state the proposition correctly. The point at issue is, not whether these various external influences—food, climate, exercise, etc.—are capable of producing modifications; though, even there, I am perfectly ready to meet it. But the point at issue is this, Can they produce the modification actually required? Can they change one set of harmonious forms into an absolutely different set? Can they change one mechanism into another? Can they change that wonderful mechanism which you call wolf into that other equally wonderful and distinct set of proportions which you call greyhound, poodle, or spaniel? It is very well for Mr. Darwin to say that changes in one part of the frame will induce changes in the other. I agree with that, because it is done by organic laws; but you might as well say that a change in one part of a watch would superinduce the change in another. Yes, if the change is made by the watchmaker. That is quite another thing;

* The general idea and argument of this paper I believe to be new. It was, however, the perusal of Mr. Herbert Spencer's works, especially *Social Statics*, that suggested it to me, and at the same time furnished me with some of the applications.

and the question we have to determine is, What will change one kind of mechanism into another? In the body of the greyhound there is not a single particle that remains in the same relation as in the body of the wolf; and yet each one is an instance of the most admirable mechanism. That is one point at issue. Then, again, in causation there are two essential ideas—the fitness of the instrument, and adequate power to work it. Now, it is perfectly unphilosophical to assign causation where you are not able to show fitness, unless you are able to prove causation as a matter of fact by other means. No one has attempted to do that; no one can do it. No one can show that the accidental agencies of climate, food, etc., can produce correlated changes in any case whatever. That is not proved as a matter of fact, and you have no right to assume it. For instance, food, when conveyed into the stomach, is converted into blood, and sent as blood to all parts of the system. That is a general action; but can you see anything in food that will lengthen a man's leg, shorten his waist, or *vice versa*, or that will give him a small head or a large one relative to his body? Is there anything in food or climate that can do that? Why, we have not yet been able to prove that climate changes the colour of races, except temporarily, by producing vesicles, etc. That is the second objection, therefore, that in this theory there is no conceivable fitness in the assigned cause to produce the assigned effect. Next, I maintain that it is absolutely impossible that these causes should produce such effects. The fundamental law of the universe is the law of causation. That law is, that there is an inevitable relation between the cause and the effect; that, as causes vary, so must effects vary. If, then, you want to know the unknown cause of a given effect, all you have to do is to find out the known cause of some analogous and similar effect, and then you know that there is a corresponding difference between the causes as between the effect, and also a corresponding resemblance. Now, then, here is the cause of mechanism. All mechanism is one in principle, whether living mechanism or the mechanism produced by man. All imply correlation of parts and functions—adaptation of means to ends. Now, then, do we know of any cause that is competent to produce such things? We do. Intelligence is competent; we see human intelligence doing such things. No cause in the universe except intelligence, then, can produce effects anything like those of intelligence. Surely non-intelligence cannot do it. Surely a non-intelligent cause cannot produce an intelligent effect. And not only so, but intelligence can never act without producing such things. Man never acts intelligently without adapting means to ends. Here, then, we have a case in which mechanism and all the wonders of mechanism are producible by a known cause; consequently all the mechanism of the universe is, argumentatively, the result of intelligence. If, then, we want to know how species originated, we must go forth to those parts of nature where everything is regulated by a determined plan. I will tell you of a case in which you may change types very easily—in a single generation; you do not want infinite time. The simple crossing of types. The crossing of races produces intermediate

races, and they live and exist. Very well, there is a cause; but that is out of the bounds of the theory of natural selection. That has nothing to do with Mr. Darwin's infinitesimal working. Here comes the difficulty; the crossing of races is rigidly barred within fixed limits. What are you to do out of those limits? How do you get types, then? By a mixture of different breeds of dogs you can get different types and varieties of dogs—some beautiful, some incongruous. Mr. Darwin's theory is admirable for telling us how races die out, but I do not see that it tells us how races come in. That is the point. Well, the crossing of dogs will produce—what? A cow? How does the cow come? Again, Mr. Darwin's theory requires us to start with the species before there can be anything like a change; but how did the species come? How did the first type come? Well, then, I say that the types outside the bounds of crossing come just as the first types come—by the plan of nature. There is one way of perfectly understanding it. In the living organism, you know that the various structures and portions have all their separate organs; you know that a muscle does not develop into a nerve, and that a nerve does not develop into a lung or into blood-vessels. Not only every muscle, but every nervous fibre has its own origin. Well, call this great globe—this cosmos in which we exist—call this an organism, and you have the whole affair. By the laws of that organism, by the plan inherent in that organism, the first type came. The next type came at its pre-determined moment, when a certain state of cosmic influences were provided; just as in the living organism bone never appears before a certain time, just as the brain does not appear before a certain time; or in the world's organism, as geology reveals to us, there are periods when there are only slight changes, and then all of a sudden we come upon entirely new types. You see it is no infinitesimal sliding. Yes, there are a number of contemporaneous forms that present a great number of shadowings, but that is co-existence. You have not shewn the sequence. This, then, is a point at issue. What is it that produces diversities beyond the bounds of species—germs, if you choose to call it so? What was it that originated the first species? I could very easily enter into the question of the varieties produced in the ordinary course of things, but they must all be within the race. They are not varieties beyond the bounds of species. The varieties that take place in the ordinary course of parentage only imply the growth of the species and type; for every type has its life, like the individual. The laws of life are always the same; and consequently types are born and are developed in the succession of generations as a matter of necessity, and then they die and pass away. These, then, are the points we have to examine in the theory. What produces mechanistic changes, and what produced the first type, and what produces the types outside the process of intermixture?

Mr. GEORGE WITT: I really have not understood the gentleman who has taken up so much of the time of the meeting. It reminds me very much of the Scotchman's definition of metaphysics: excuse me if I repeat it. "When the party who listens disna ken what the party who speaks means, and when the party who speaks disna ken what he means himsel—that is metaphysics." (*Laughter.*)

Mr. BURKE: There is evidently one person who cannot understand, at all events. (*Laughter.*)

Mr. S. E. B. BOUVERIE-PUSEY: We have listened to a very eloquent attack on the transmutation hypothesis in general; but I understood that Mr. Wallace did not mean so much to bring that doctrine forward, as to show that, assuming its truth, it would easily explain the phenomena of the races of man, their gradations into each other, and their present permanence. What we are told by Mr. Burke is principally that you can produce variations within the limits of species, but not outside; but that assumes the question whether there is a difference of kind, or species, or variety. Mr. Darwin does two things. He shows how varieties are produced—that is, by the action of natural selection; and he proves (at least in the opinion of many persons, myself included) that there are differences between species and varieties; and, as we know that varieties may be produced by natural selection, we may presume that in a sufficient length of time species and genera may be produced. Some say that it extends to the origin of the universe; but that does not follow. Many suppose the universe to be the creation of one Deity, some of opposite principles; but Darwin does not teach anything of the kind. The whole question raised by Mr. Burke is not touched by the Darwinian hypothesis at all. Mr. Burke has told us very fairly, that we ought to attribute things to such causes as we see in operation. Darwin and Mr. Wallace believe themselves to have proved that natural selection is such a cause. I must confess, however, that the idea in this paper was totally new to myself; and I believe that it must strike every one here as constituting a new era in anthropology.

Mr. T. BENDYSHE: The eloquent discourse we have heard from Mr. Burke, has nearly driven out of my recollection the ingenious paper we previously heard from Mr. Wallace. There are still some points, however, which I am able to recollect, and on which I cannot altogether agree with the author. As far as I understood it, the principal scope of the paper was, that in proportion as the intellect of man became developed, he was enabled to triumph over every climatic influence. Now if one thing has been proved more than another about the race of man, it is this, that the inhabitants of temperate climates have been unable to live and flourish either in tropical climates, or in the polar—the hyperborean climates; and *vice versa*. If, therefore, all the intellect of the European is unable to give him the slightest footing whatever in the tropics, what becomes of Mr. Wallace's proposition? This is not a question of natural selection on the struggle for existence between one animal and another of nearly allied species; this is a struggle of an animal with climate. I think that Mr. Darwin in his book has some expression of this kind. He applies the doctrine of Malthus with redoubled force to the animal kingdom. Now the doctrine of Malthus begins with the statement, that any animal or plant, if not checked by others, would in a short space of time cover the whole surface of the globe. He says that is incontrovertibly true. Now I should be inclined to say, that it is unquestionably false, that on the Darwinian theory, any animal could only

cover the globe in process of time if uninterfered with, by ceasing to be the same animal or plant. That is the outside of what any one would admit from Darwin's theory. The very principle of that theory, Mr. Darwin does not exactly see the consequence of. It is not the theory of the struggle of existence between one animal and another, and, therefore, the idea that man, in proportion as his mind becomes developed, is able to overcome all climatic difficulties, is quite contrary to all observed facts. If it be said that the mind of the European is so extremely developed, that he has now lost the power of controlling his physical body—that the pendulum has swung so far that he cannot get it back, how is it that he can produce no effect upon those races of men who certainly have not been developed far beyond the animal, the negro, or the inhabitant of Tierra del Fuego? The intellect of the European applied in every possible manner to enable these beings to live outside the zone in which they are born, can no more make them flourish than his own progeny. He can produce no effect on them. They perish in a temperate, just as much as he perishes in a tropical zone. Then again, man in his progress to the highly intellectual European, supposing him to be the descendant of one original tribe or parent, has, we have every reason to believe, passed through all these phases; that he has passed through a tropical epoch, a glacial epoch, a temperate epoch. Now, how is it, if our predecessors have gone through all these forms, that we are incapable of existing in one of those climates in which our ancestors have actually lived? There again the theory fails, and I was unable to see anything in Wallace's paper that would answer this objection. In fact, in his paper, as in the book of Darwin, the struggle for existence has not been contemplated as applying not only to the contest between one animal, and a nearly allied animal, but to other species. It has been considered merely in that light, and not as a struggle, which any animal must have with climatic conditions, if it wishes to spread itself as Mr. Wallace seems to think, an entirely homogeneous race may do, over the whole surface of the globe.

MR. REDDIE: Having recently given my opinion as to the theory of the origin of species at some length, in a paper, I am only anxious now to ask one or two questions of Mr. Wallace, because I should like to have this theory fully developed. But I may observe that I think he has raised a false issue in trying to connect the varieties of one species of living animals with Mr. Darwin's theory, which has nothing to do, strictly speaking, with varieties, but with the "origin of species"—not of varieties—by natural selection. I will not go into the speculative details which Mr. Wallace has very eloquently put before us as regards an imaginary world, which I think were extremely Utopian, and which, when this paper comes to be read and compared with all our experience of the history of the human race in historical periods, will, I think, be found totally inconsistent with all the facts of man's experience. For example, about the cold climates;—those who lived in the coldest climates were to have the best houses and clothes. Then compare the Esquimaux and the English—why, the thing is absurd. But I do not want to go into these details, because they lead us, I think,

very wide of the main question. He told us a great deal about man—man, however, as far as I could make out, before he was man, because it was when he had no intellect or speech—and he expressly told us that the intellect of man and his speech became developed about the same time. Then what I want to know is, upon Mr. Wallace's principle, or any other principle of "natural selection", how this intellect came at all? We have the animal—something I suppose between the man and the gorilla—but it could not speak or think. From whence did this intellect, then, proceed at all? He gave us formerly something new in Darwin's theory, when he told us that the development of the canine teeth was not due to animal food, but to fighting for the females! But I think the Utopia of the past, was nothing compared to the Utopia of the future, as painted by Mr. Wallace. Mankind began a homogeneous race—he did not tell us whether a white or a black race—and it is to end a homogeneous race; and we are all to be so wise, that there are to be no wrongs or evils! Meantime, I shall be glad to hear Mr. Wallace explain how intellect was developed according to his theory in this curious being, whom I do not know how to describe, except by calling him "man before he was man".

Mr. CARTER BLAKE: The most able paper of Mr. Wallace has given so clear an account of his theory, and Mr. Bendyshe and Mr. Pusey have so clearly expressed some of the criticisms I intended to have made on it, that I shall not detain you for a long period. One or two of the points to which Mr. Wallace called attention are, however, still open to debate. With respect to our knowledge of human history, is it a fact that the nations that have been extirpated by other nations, whose ethnic eras have been followed by other successive nations—is it a fact that they were inferior, either intellectually or physically, to the nations that came after them? Let us take an example in the case of the Basques. The Basques have been almost entirely extirpated from Western Europe. At one time, they occupied a large area; while at the present time, they are confined to very limited areas in Spain and France. But we know absolutely nothing about the history of the Basques, and we are not entitled to affirm that they were in any way inferior to the early savage Teutonic or Celtic nations that immediately extirpated them. This seems an important objection to some of the instances which Mr. Wallace has brought forward. Again, let us take the instance of the Celtic nations. We know that the Celtic nations, especially the Gauls, were driven westwards by the Frank or Teutonic nations; but if we compare the early traces of civilisation, which are afforded to us by the evidence of the most reliable contemporary historians, we know that the early Gauls, at least during the Roman period, were in a far higher degree of civilisation than those Franks who ultimately drove them before them, and who now occupy so large a portion of the French and Western German areas. There seems, in point of fact, to have been no intellectual inferiority between the Celtic and the Teutonic nations, and also no physical inferiority. It is true, that if we take some few striking examples of Scandinavian skeletons and measure their height, we see that the Scandinavian nations are those that usually comprise men of great stature, but when

we take a fair average, not upon the whole higher or stronger men than those of the indigenous Celtic stock. There seems to have been no physical superiority of the Teutonic nations, and therefore when we apply this theory of the extermination of weak physical frames in the struggle for life—which struggle has undoubtedly operated in those inferior types of men (inferior as they were at that time) I fail to see what is the object that this theory of natural selections effects as to the extermination of these forms of life in Western Europe, so far as history gives us information on the subject. Then, with respect to there being a certain correlation between the structure of man and the locality in which he lives, if we examine a great many tribes of men at this time, there is not the slightest correlation between the structure of man and his habitat. For example, in the tropical countries we have certain races with a thick skull, and there have not been wanting theorists—I will not call them anthropologists—that have imagined that such thickness of skull was given to those nations as a beneficent provision to enable them the better to survive under the burning sun. Such is one version of the story, and I fear that the advocates of the theory of natural selection would adopt a similar style of argument. They would tell us that there are men of a certain average thickness of skull, in warm climates that those men who had a skull of greater thickness would in process of time survive, and that the thin-skulled races would in process of time die out. Well, such a thing may have some foundation in truth. But in India, where the sun is as torrid as in any other part of the globe, we find a nation that has the thinnest skull. I confess, therefore, that I do not see the connection between the structure of superior animals and the circumstances in which they live, any more than I see in all cases the connection between the adaptation of the structure of the inferior animals and the circumstances in which they live. Anthropologists will in the course of time adopt this style of argument; and as to the reference which has been made to final causes, that, I think, is quite a bygone style of argument. Then Mr. Wallace has hinted that we may, perhaps, be entitled to consider man as the commencement of an entirely new order of things. This may be so. Of course, we cannot say when a new order of beings may commence or end. But what are the proved facts? That man is more like the inferior animals—at least, more so than anything else on earth; that, taking the arguments of the transmutationist on its lowest, most generalised, and most simple aspect, man is a great deal more like the gorilla and chimpanzee than the whale, or than any hypothetical sort of animal that may belong to a new order of beings. Then, with respect to man controlling nature. I do not know how he does so. It appears to me that he is subject to just the same diseases and vicissitudes of climate as inferior animals. The drought or the loss of food that exterminates the inferior animals exterminates man; and I do not see how man can be excluded from simple physiological laws, by saying that civilisation controls nature. Of course, it does to a certain extent; but civilisation has been utterly inadequate to take man out of the power of ordinary diseases, and those climatic effects which influence human

beings as well as inferior animals. Having made this criticism, I hope that these observations will not be taken as against the theory of transmutation of man from the inferior animals. That theory has great probabilities in its favour, and will no doubt be borne out by facts. Whether the Darwinian theory can help us is another question; and, in the meantime, such papers as Mr. Wallace's will be in the highest degree valuable. I am sorry that his propositions should have been so remarkably misrepresented as they have been this evening. The whole theory of Mr. Darwin seems destined to pass through an age when it will be utterly misconceived and misrepresented by the general public, and a great evidence in its favour appears to be the amount of misrepresentation and divergences in the different versions, and that are placed in the scale respecting it. In respect to Mr. Burke's remarks, I shall not detain you very long. Mr. Burke commenced by saying he would lay down three general propositions. I did not understand what they were, but I mentally classed his remarks under three distinct heads—the statement of facts which I accept, of facts which I deny, and of facts which I did not understand. I will begin with facts which I accept. He has told us that an animal like a dog or a wolf never produces a cow. Mr. Burke and I are in perfect accord upon that topic, and I doubt not that Mr. Wallace and Mr. Darwin will be also. He also tells us that he never knew a nerve to develop into a muscle, or into lungs, or blood-vessels. Neither did I; and I believe those are the two principal facts of Mr. Burke, which I accept most unqualifiedly. But then he has told us what are the fundamental laws of the universe applied to man. I am sorry I don't know them, and I humbly doubt if any of us know them—we are here this evening as a society to try and discover some of the laws which regulate man. I for one, do not know what those fundamental laws may be, that may hereafter be discovered. Mr. Burke has also compared man to mechanism, and carried out the old illustration of man and the watch, showing that if you attack the mainspring certain consequences will follow. Gentlemen, the day is utterly past and gone when such an argument could have the slightest value in biology. We know that nothing that lives and moves and has its being in nature, bears the slightest analogy to mechanism in any way. Mr. Burke has told us that there are certain limits within which we can say that the hybrids are, or are not fertile in the human species. I for one, must deny this. I know not whether Mr. Burke, who knows the fundamental laws of the universe, may have some special information, but all the evidence which Broca and the best French authorities, or their brother anthropologist of America, Dr. Nott, can bring to bear, tells us distinctly that we cannot predict the limits in which hybrids are or are not fertile. The time will come, I doubt not, when we shall be able to do so; and a work will soon be laid before us, translated from a memoir by the secretary of our sister society in Paris, which will give some known facts on the subject. Till then, I submit, it is waste of time to discuss it.

Mr. BURKE: I can only say, gentlemen, that I was bound in my address to give argument, but I was not bound to give understanding.

Mr. PUSEY: I do not want to occupy the time of the Society, but it occurred to me that the fact of the congregation and yet non-transmutation of the human race, might possibly be explained by supposing, on Darwin's hypothesis, that he proceeded from one stock, but that he is now separated into different species. We do see species in the lower animals approaching one another—we see dogs, for instance, approaching to the wolf; but we do not see species ever transmuted into one another. But if we suppose distinct species to have had a common origin, the transmutation hypothesis might account for the facts.

The PRESIDENT: Before I call upon Mr. Wallace for his reply, I will make a few observations. I was, in common with yourselves, charmed with the paper; indeed, I was so much charmed, from the elaborate promises made in the opening of the paper of what "natural selection" could do, that a feeling of disappointment came over me at the conclusion, that those promises, which we were told would set to rights the difficulties of anthropologists, were not quite verified. When the author asserted that those difficulties would be set to rights by the principle of "natural selection," I do not think he sufficiently weighed the evidence that warranted him in making that assertion. I think it a pity that the two subjects of Darwin's hypothesis and Mr. Wallace's paper should have been so mixed up this evening; it would, perhaps, have been better if we had confined our remarks to subjects touched on in the paper. It appeared to me that the paper we have heard dealt very largely with assumptions. Mr. Wallace told us that man may have sprung from one race; indeed, he goes further, and says he must. Now, really this seems to me to be hardly a satisfactory argument. I hardly could have expected that the theory which was going to solve all the difficulties would at once make such an assertion, and I could not discover in the whole of the paper any facts that warranted the assertion. There is no doubt that hypotheses like Mr. Darwin's, and the one brought forward this evening, have a very great charm, because they attempt to explain so much. Does Mr. Wallace attempt to found his theory on known facts? If he does, then he failed to give those facts in his paper, and I am under a very strong impression that he has no facts to bring forward.

Mr. WALLACE: What facts?

The PRESIDENT: Mr. Wallace asks me to specify the facts I allude to, and I have no objection to do so. Now, what do we learn from archæology? Take the whole of the remains of different continents, and what do we find? Go to America, and what do we find there? Do we find any indications of a different race dwelling there from the race of men that now exists? Not at all; and so wherever we go. Of course, if you go and take a Neanderthal skull as a type of a race, although there is good evidence to believe it simply the skull of an idiot, you beg the whole question. Mr. Wallace's theory appears to me not to be warranted by our present knowledge, and we cannot, I think, accept it. If the object of the paper is to assist in founding a science, that does not appear to have been carried out in the eloquent

appeal which has been addressed to-night to the imagination. I must say that the opposite side has been equally imaginative. Mr. Burke, for instance, pronounces the thing to be impossible—a statement that is of course equally absurd. Assertions on either side stand for just nothing. And then the author of the paper tells us that man must have existed from a very remote period—the author says ten millions of years. Well, we have, of course, no objection to that; any quantity of time is at the disposal of any speculative philosopher. And then he brings rather a charge against anthropologists—that they look to that portion only of the truth that is on their side, and insist on looking at the errors on the other side. I hardly think that such a statement is fair to anthropologists, ethnologists, and ethnographers; on the contrary, I believe there are many anthropologists living who are at least as capable of looking at the whole facts as any disciple of Darwin. I think there are men in Europe who do not simply look at facts which favour their own side, but who look at facts as a whole, and look at them fairly, and endeavour to interpret what may be truth from a careful examination of the whole evidence. We are told that the Portuguese and Spanish retain their characteristics in South America. That is an assertion which ought to have some evidence to support it. We are told that the Jews everywhere remain the same. I think this is an argument that Mr. Wallace puts into the mouth of a polygenist.

Mr. WALLACE: Alike in features.

The PRESIDENT: If they are alike in features they will be alike in other characteristics. This is no evidence at all. I am perfectly aware that there is no change in craniological development and stature, and the mere change in the colour of the skin is temporary.

Mr. BOLLAERT: They lose their prolific character.

The PRESIDENT: Yes, on removal to climates that do not suit them; just as you cannot propagate a European race in India. Then he tells us that the best of the argument is for the principle of the diversity of the human race; and no doubt the polygenists will be glad to hear that they have the best of the argument. Now, Mr. Wallace very frankly admits, in opposition to some of the recent disciples of Mr. Darwin, that man differs from the ape very little in physical structure. I believe that some of his disciples now have come to say that there is a very great difference, and that a Neanderthal skull only approaches very little towards the ape. It is a pleasant thing to find one Darwinite, at least, true to his colours, and not frightened away from them by the clamour of the mob. Then he tells us that a hardy and more prolific race will be developed—a very provident race, too. I don't know, by the way, the physical characters of a provident race. I should be glad to know how this provident race is going to be produced? And then we have the statement that the Mexican government came from the north: but that is open to discussion, like all the other statements. Again, there is another assertion: that the ancient Britons were in a savage state at the time of Julius Cæsar. Is that really a fact? Has it any but the barest traditional historic evidence as a foundation? It is not

founded on known facts: but on tradition called history. It is brought forward as an argument to say that the Britons were slaves and savages two thousand years ago, and therefore that some people that are savages now will in that time be equal to us. But the whole thing is an absurdity, inasmuch as you cannot prove the fact, except on the barest traditional evidence. We were told of "natural selection" by virtue of external causes; now we are told of the inherent power; but this is surely wrong. There must be some mistake here, because the principle of selection is based on external circumstances. I should therefore expect Mr. Wallace, for the benefit of his argument, to withdraw the expression "inherent power." As to man being without the faculty of speech, I thought that speech was man's distinguishing characteristic. Professor Huxley, following Cuvier, at least says so. Then we are told that man can take away the power of natural selection. Well, if man can do that, what a powerless thing natural selection must be. If man, little man, even civilised man, has the power to take away this so-called law of natural selection, what a powerless law it must be. At the same time, I would say nothing against the law of natural selection as an hypothesis. It stands on its own merits as a purely philosophic speculation, but forms no part of inductive science. We ought always to make a great distinction in that. I put the Darwinian hypothesis just in the same category with any other hypothesis that can be brought against it on the same subject. Neither is more acceptable than the other, and it is only a question which can be proved. However, in all these matters we like a little poetical license; and I must confess that I listened with some pleasure to the beautiful dream that the author of the paper called up at the end. Although he did not satisfy me with science and with facts, he thoroughly satisfied me with the after-destiny of man. But the curious part of the case was that man's external characters were always to remain the same. That I do not like, and think that is a mistake. But his mind was to be advanced and improved without any development at all of the brain. All the other characters were to exist, though there was to be no individual inferior to the existing highest races. Well, that is satisfactory for some of the lower ones; they will not exist at all events. Then Mr. Wallace said that we were all to be equal; but that seems to be a long time off. Again, government will be unnecessary. Of course, that is a great blessing, I admit. Passions will not exist; or they will be ordered in a temperate manner, and exactly in accordance with man's physical formation. And all this is to be with exactly the same brain organisation as now. I suppose the laws of natural selection will entirely change the whole functions of the brain, and the whole functions of man will be changed, although his physical character will remain the same. Now, I hope that the author of the paper, for his own credit, will withdraw the whole of this dream, and not mix up these two subjects. As students of science we must object to this sort of dreaming, because it cannot be based on evidence. Some members of this society are accused of bringing forward speculations; but none of them have yet brought forward anything a thousandth part

as speculative as this. I do hope that Mr. Wallace will make us understand that he does not insinuate that this dream has anything to do with his theory, or with Mr. Darwin's hypothesis, and then, I am sure, we shall all be very much indebted to him for coming before us this evening. Although I may regret that his own theory has not been better established; yet his paper shows most conclusively the exact position of the present state of Darwinianism. I believe this is the first occasion in which we have had a clear logical statement of the position in which the theory of transmutation by external circumstances now stands in reference to Anthropology; and I am sure you will all agree with me in heartily thanking the author of the paper.

Mr. WALLACE: Before I begin *serialim* to notice a few of the objections made to my paper, I should like to correct a slight misapprehension which Dr. Hunt has made, while fresh in my memory. I have been obliged, in order to compress my remarks, and at the same time to make my meaning clear, to use expressions which are, perhaps, not logically accurate. In the latter part of the paper, the argument is the contrast between change of body and change of mind. By the former was meant change of organisation, of the limbs particularly, and of other external physical characteristics. By the mind I always include the brain and skull—the organ of the mind—the cranium and the face; and therefore, when I afterwards contrasted change of external form with change of mind, of course I do not mean to say that the cranium which contains the organ of mind was stationary. Therefore, I beg to be understood that there is no contradiction in my argument,—that man may advance to this high state of civilisation, while his physical frame remains unchanged. Mr. Burke's observations have, to a great extent, been answered by several speakers. I would say that they appeared to me totally to misrepresent the purport of my paper. Of course it was seen that, to a certain extent, it was impossible to go into details with respect to this subject of natural selection, and I only brought forward my illustrations of it to refresh the memory of those who are not thoroughly acquainted with the whole theory. I do not now argue generally for that theory; I merely show how it applies to a particular doctrine of anthropology. I endeavoured to apply it in a way in which it has not been applied before. I will now pass on to notice the special objections that have been brought forward to my theory. Mr. Burke's arguments were all against the theory of natural selection itself; but Mr. Darwin has argued it so well that it is impossible for me to add anything. The two next gentlemen who spoke agreed with me generally. Mr. Bendyshe objected to my statement, that man, to some extent, triumphs over nature; and he argued that man does not triumph over climate, because Europeans cannot live in the tropics, and the natives of the tropics cannot live in Europe. First, I say that there are facts to show that that is not absolutely the case. There are cases in which Europeans have gone and resided in the tropics, and, as far as we can see, live there to this day perfectly well. One particular case I will mention. In the interior of South America, on the eastern slope of the Andes, the head waters of the Amazon,

there is a district quite isolated from the rest of the world, cut off on the one side from the Pacific by the Andes, and on the other side by the intervention of Brazil, no communication of any kind having been allowed till recently. In this upper valley of the Amazon there is a large population, purely European, or at least very nearly so. There are a number of towns and cities there, numbering ten, fifteen, and even twenty thousand inhabitants. No doubt the race is partly mixed,—we cannot say how much, but my friend, Mr. Spruce the botanist, describes them to me as actually whiter than the Brazilians, remarkably white for a south European race. He was astonished to come upon so large a population, which knew nothing of any other part of the world. They are the descendants of some of the Spanish settlers. Here, then, we have the case of a European population transferred to a tropical country.

Mr. BOLLAERT: Will you name some of those cities?

Mr. WALLACE: Well, Tarapoto, and Moyobamba.

Mr. BOLLAERT: I should say that the population was two-thirds Indian; certainly a mixed race.

Mr. WALLACE: I got the information from a gentleman who has resided there, and he assured me that the mass of the population was white.

Mr. BOLLAERT: There is a great deal of Indian blood.

Mr. BENDYSHE: What is the altitude?

Mr. WALLACE: Not more than a thousand feet above the sea. The plain of the Andes is perfectly flat.

Mr. BOLLAERT: If there is Indian blood there, that is the very point.

Mr. WALLACE: But it is urged, that directly you get a cross you get infertility; and yet here there are immense numbers.

Mr. BOLLAERT: I doubt extremely the immense numbers.

Mr. WALLACE: I can only give the facts as they were given to me. If they are wrong, they can be disproved; but the question does not depend upon that; for admitting that man may not be able to stand a sudden change in climate, yet, supposing that the change were a slow one—supposing that Europe were gradually sunk beneath the sea from the north, so that we were gradually shoved, as it were, into a tropical climate at the rate of a few miles in a century,—do you not think that natural selection would act so that the race would stand the climate? I do not think we should all die out. All the facts of nature seem to be opposed to such a supposition. The dog has stood all over the world with us notwithstanding the climate.

Mr. BLAKE: May I ask the historical evidence of the migration of dogs?

Mr. WALLACE: I cannot now go into that. Dogs are carried by man all over the world.

Mr. BOLLAERT: And they die.

Mr. WALLACE: Mr. Reddie began by saying that Mr. Darwin's theory had nothing to do with varieties. Now, from my study of the theory, it appeared to be all founded on the study of varieties. The whole argument is based on varieties, showing that they merge gradually into species.

Mr. REDDIE: What I meant to say was, that it was not limited to varieties.

Mr. WALLACE: I thought you said it had nothing to do with varieties. Then, another very strong argument was that the Esquimaux, notwithstanding their bad climate, do not build good houses, not so good as Englishmen. I have asserted that man, in his progress from a low to a high state, would be assisted by the necessary discipline of a harsh climate, which would make him exert his mental faculties much more than a tropical climate. Now, I think that is almost self-evident, and is not at all affected by the fact that the Esquimaux are less intelligent than the English. The question is, "Do they build houses at all? Yes; and very good ones. Travellers describe how ingeniously they build their snow houses; and the manner in which they make their clothing and sledges shows that they are not so low intellectually as most of the inhabitants of tropical countries. Mr. Reddie also wants to know how the intellect came at first. I don't pretend to answer that question, because we must go so long back. If Mr. Reddie denies that any animal has intellect, it is a difficult question to answer; but if animals have intellect in different proportions, and if the human infant, the moment it is born, has not so much intellect as an animal, and if, as the infant grows, the intellect grows with it, I do not see the immense difficulty if you grant the universal process of selection from lower to higher animals. If you throw aside altogether, this process of selection, you need not make the objection about the intellect. Mr. Blake made a few objections, which may have some little weight. The principal was that we have no evidence to show that when one race, or nation, or people are exterminated, or driven out by another, the one that is so exterminated is necessarily inferior; and he wanted to show either by historic evidence or by remains of bodies that it is impossible to say that the Celtic was inferior to the Teutonic, or the Basque inferior to the race which drove them out. Now, it appears to me that the mere fact of one race supplanting another proves their superiority. It is not a question of intellect only, nor of bodily strength only. We cannot tell what causes may produce it. A hundred peculiarities, that we can hardly appreciate, may cause the one race to melt away, as it were, before the other. But still there is the plain fact that two races came into contact, and that one drives out the other. This is a proof that the one race is better fitted to live upon the world than the other. Mr. Blake says that there is no necessary correlation between man and his habitat; and he endeavoured to show that, by proving that the thickness of the crania does not vary in accordance with the heat of the sun. No doubt such an objection is very easy to make; but we must consider, is it at all likely that we shall be able, by our examination, to appreciate this correlation, whatever it may be. For instance, you take two animals; one lives in a northern hemisphere, the other in a southern,—one in a wet country, the other in a dry one. Can you tell me why these two animals are fitted to live in their respective climates? They may be so closely allied that you can hardly find out their differences; and if you cannot find out the

difference in animals which serves to adapt them to the climate, is it likely you can find out the difference in man? But there are facts which show that there is a correlation between man and his habitat. For instance, take the case of the inhabitants of West Africa, who stand the fever and malaria of that country; and it is the same in New Orleans. It is asserted in America, I believe, that one-fourth of black blood is enough to save the individual from the yellow fever in New Orleans. This is a striking case, I think, of correlation between man and his habitat. Then again, as to the prevalence of black-skinned races in the tropical regions, I do not believe that there is any special production of the black skin by the heat of the sun; but I believe that because the black skin is correlative to the hot sun, the black skinned constitution is best adapted to stand the diseases of the climate, and the process of natural selection has preserved them. If we find a people who are apparently not well adapted to stand the climate, we have some reason to believe that they are a comparatively recent immigration into the country. My friend, Mr. Bates, who is not here, has supported this theory from his observations on the Amazon, asserting that the inhabitants of tropical America are a recent introduction. He comes to that conclusion from a great many peculiarities of manners and customs, and if so, it is a corroboration of the argument that races do become correlated to the climate in which they live. Mr. Blake objected to my statement, that man can to a certain extent control nature. He asserted that man could not control disease; but that was not the point I went upon. I especially mentioned the point on which man can control nature,—raising himself by his intellect above the action of natural selection, which changes the forms of other animals, because they could only be kept in harmony with the universe except by being changed; whereas man is kept in harmony by his mind. Again, no weak animal—no animal born with a sickly constitution—lives to propagate its kind: but man does. Hundreds of weak individuals live to a comparatively healthy and comfortable old age, and have large families. This is a special case, in which man controls nature differently to the animals. He controls nature so much that he is an exception to all the rest of animated beings. Dr. Hunt made a great many special objections. He says, I disappointed him, because I promised to explain everything. I must say, I did not. I simply proposed to myself to explain, or rather to suggest, a theory which should do away with this difficulty of the absolute contradiction between two classes of ethnologists, commonly called the monogenists and the polygenists, by showing that both were right. I think that is a most satisfactory way of harmonising people that differ. Again, he objects to my using the expression "must have been". Well, I put in the words "I believe," and "according to the Darwinian theory", because, according to that theory, every group of species arises from one, every group of varieties from one, every group of individuals from a pair; therefore, if you do but go far back enough, you must come to a unity of origin. If that theory is utterly wrong, then my argument goes for nothing. Then Dr. Hunt says I did not

give facts enough. Well, first you are aware that in a subject like this, if a sufficiency of facts were given, they would fill a volume; consequently, I was obliged in this paper to sketch and allude hastily to facts. Dr. Hunt asserts, that archæology shows that the ancient races were the same as modern. Well, that is a fact I quoted on my own side, and his quoting it against me only shows that you can twist a fact as you like. I quoted it as a proof that you must go to an enormous distance of time to bridge over the difference between the crania of the lower animals and of man. I said, perhaps a million, or even ten millions, of years were necessary. If my argument is correct, it is a logical conclusion. Dr. Hunt objects to my using an expression to the effect that students are rather dogmatic in assertions of this kind. Well, I think I could bring forward facts to prove this; and I should think that anybody who knows anything of the literature of the subject, would agree with me that there is the strongest feeling on both sides that they are right, and that they express their feelings in the strongest manner, and that each party is inclined to look down on what it believes to be the absurd ideas of the other. Still, I do not deny that there are some who do not manifest this dogmatic feeling. With respect to the fact about the Portuguese and Spaniards in South America, I can assert it on my own authority, because I have lived among them, and have seen European families in tropical countries who have been there for many generations. I may name the town of Amboyna, in the Moluccas, where there are families that have kept their blood pure for three hundred years, as fair skinned, and in every respect like Dutch men and women.

Mr. BOLLAERT: Have not fresh families been sent out to them from Holland?

Mr. WALLACE: Possibly so.

Mr. BOLLAERT: But that is very important.

Mr. WALLACE: I allow it; but still there is the fact, that this period of time has produced no change. If there was a change, notwithstanding a little fresh blood, it would be perceptible.

Mr. BOLLAERT: More than a little, depend upon it.

Mr. WALLACE: But there is no perceptible difference. Of course, these kind of facts are the most difficult in the world to get at. You cannot isolate men. They will mix; and there is no possible fact you can bring forward but is liable to the same objection. It was thought at one time, by Prichard and the older ethnologists, that it was a strong argument for the unity of the race that the Jews were white, black, and brown. Now, it is known that in every case in which the Jews have changed colour apparently, it has been the Jewish converts who have been treated as Jews, simply because they have embraced that religion. But a better proof than colour is physiognomy, which you see maintained in the Jews all over the world. Physiognomy maintains itself much longer than colour; and it seems as if the physiognomy of the superior race maintained itself much longer than the inferior; whereas the colour of the inferior race is often most lasting. For example, I may mention the descendants of the Portuguese in the Malay archipelago. In a great many towns there

are thousands of Portuguese; some of them keep the Portuguese language; others have lost it; but still Portuguese words crop up all over the land, and there are Portuguese customs and manners and European features; but still they are generally the same colour as the people of the country in which they live. With respect to Europeans not living in India, that is nothing when we remember what a vile climate it is. We live in it as an exceptional race; and if we could bring instances of the third generation, you would say there was mixed blood in them. Then again, Dr. Hunt wanted me to explain how I could use such a word as "provident". Why, is it not perfectly clear that if people live in a country where there is a severe winter, in which little or no food is to be had, that they must provide against the scarcity, and that gradually the race would become a provident race? Therefore, I think I am justified in saying that, given two races of the same capacity, and put one in a tropical and the other in a temperate climate, the one in the temperate climate will become the more provident race of the two. With respect to Britons ever having been savages, I cannot assert that; but I think it would puzzle Dr. Hunt to show that they were civilised. All the evidence we have proves that they were savages, as much so as the South Sea islanders.

The PRESIDENT: Chariots?

Mr. WALLACE: The South Sea islanders had no horses. Well, then, as to the term "inherent," I do not mean to withdraw it. I mean to maintain it as a very proper expression; and the answer I gave to that last question about a provident race, will almost answer for this,—that peculiarities produced gradually by natural selection, or any other cause, become inherent. The very fact of the race being gradually brought into harmony with the climate of the country in which it is, gives it a superior power, and an inherent capacity to maintain it. I do not know whether the words are the same, but the sense is exactly the same as will be found in Darwin's own book, where he points out this extraordinary fact, the bearing of which had never been noticed before, that in Australia, in the Cape of Good Hope, and to a considerable degree in North America—in fact, to a great extent in all the comparatively limited areas to which Europeans go—the weeds of Europe that are carried accidentally thrive and flourish there. They spread over the country, and maintain themselves in competition with the native weeds, showing that they are better adapted for the country than the plants which were apparently specially created for the country. Mr. Darwin explains it on his theory in this manner,—that Europe and Asia, which now to a great extent dry land, have been long in existence as dry land; and that in the immense series of ages during which the changes of the northern continent have been going on, becoming modified from one form to another, sometimes to an inland climate, sometimes to a continental climate, sometimes a mountainous region, sometimes a flat region; owing to that great amount of change, its plants have acquired an immense variety of specialities: because, when a speciality is once acquired, it is not lost. It is handed down and kept in store, as it were, so that the immense mutations which the northern hemisphere has un-

dergone, have given these plants a capacity of adapting themselves to a great variety of conditions. The result is, that directly they are carried into Australia these properties come into play. They have been adapted, in some previous state of the northern hemisphere, to similar conditions, and they have inherited this peculiarity by transmission, and therefore they are capable of driving out the plants of Australia merely by the inherent vigour they have gained. I applied this in illustration of the way in which civilised man has been developed by a great variety of circumstances. The intermixture of races has been very great. We are a mixed race to a very great extent, and therefore we have the capacities and powers of a great many; therefore, when we come into contact with the lower races, we are enabled in the same manner to drive them out. Then, it is said, that man without speech is not man. That is one of my points. I said, if you choose to consider he is not man, then so and so follows; but if you consider he is man, then so and so. And as to the argument, that if man could take the effects of natural selection away, it must be powerless,—that has not much to do with the subject. We might as well say, how powerless life is, because we can take it away,—when such a slight thing as stopping the mouth with pitch-plaster can destroy it. This only shows how easily it can be changed or destroyed; it does not prove its weakness. And so it does not show the weakness of natural selection, because man is able to modify it by putting himself into certain conditions, instead of leaving nature to select those conditions for him. I think I have now answered all the objections; and it is now so late that I really cannot detain you any longer. With regard to the poetical conclusion, I would merely say that I began it by stating that I would point out what I considered to be the bearings of this theory, if it is true. If it is not true, of course my remarks go for nothing; but I do not think myself that the concluding part of the paper is more poetical than true.

The meeting then adjourned.

MARCH 15TH, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

THE minutes of the previous meeting were read and confirmed.

The names of the following new Fellows were announced:—The Right Hon. the Earl of Clarendon; Charles Buxton, Esq., M.P.; the Hon. Capt. Best; J. Jermyn Cowell, Esq.; John Cock, jun., Esq., F.R.H.S. and M.S.A.; J. F. W. Cozens, Esq.; Dr. J. F. Caplin; E. Bartlett, Esq.; R. E. Arden, Esq., F.G.S.; Edward Brown, Esq.; J. Payne Collier, Esq.; W. Fothergill Cooke, Esq.; George Bertram, Esq.; John Cassell, Esq.; E. O. Brown, Esq.; W. T. Cox, Esq.; Henry C. Bingham, Esq.; J. S. Brickwood, Esq.; W. Armitage, Esq.; Edward W. Brabrook, Esq., F.S.A.; T. A. Augustus Land, Esq.; Hon. J. L. Sullivan, of New York; Mark Stirrup, Esq.; Rev. M. A. Moon.

The thanks of the Society were voted to the following gentlemen for donations to the library:—J. S. Brickwood, Esq.; Joseph Dickin-son, Esq.; M. de Quatrefages; Geo. Tate, Esq.; the Asiatic Society of Bengal; and the Société d'Anthropologie de Paris.

The following papers were then read.

Notes on some Ethnographical Casts, &c. By HERMANN VON SCHLAGINTWEIT, Esq. Corr. Mem. A.S.L.

A.—1. The *Brahman* is chiefly presented for showing his well-defined Aryan type in opposition to the following castes:

2. The *Gond* and *Bhils*, are decidedly the most savage and the most irregular in features; the upper part is somewhat Negro-like; the lower jaw decidedly more feeble.

3. The *Santals* are much more regular, and approaching the lower castes of Indians than any of the other aboriginal tribes.

4. The *Bhot*, chiefly shows the marked deviation of the *Aryan*; the mixed race between Bot-Yarkand is the latter mixed race; when examined in greater numbers it shows a much more decided tendency to approach the Turkistani types than to be a plain, arithmetical mean.

B.—The body shows a much greater number of qualities characteristic of tribes and castes than might be expected. One particularly striking is, the relative proportion of the ulna and the foot; with Hindoos, particularly the low caste ones, the ulna is longer than the foot; with the Tibetans (and in general with Europeans, ladies not excepted), it is, on an average, equally long. A remarkable fact is, that the Assyrians, in the splendid collections of sculptures by Layard and Rawlinson, are the only nation which, in its representations, at least, shows the foot considerably longer than the ulna; it might appear arbitrary and indifferent, if I had not found in the recent materials now put up in the British Museum that foreign prisoners have the proportion in the uniform type of other tribes. However, a quite positive confirmation must remain, depending upon the finding out of ancient Assyrian skeletons.

C.—Details of my mode of measuring, equally employed by my brothers, you may find in the *Report of the Statistical Congress*, which was held in London (1860, I believe, page 500 of the Report in folio).

E.—In the last publication of the Royal Asiatic Society there will be found communicated by my brother Emile a memoir in relation to the proportions of Buddhist idols which might furnish some data.

F.—As one of the numerous details of a rather unexpected nature might be mentioned, the following result, in reference to the difference of sight with the right and left eye:

An ordinary optometer, such as the very good one of Doppler, in Vienna, was found to be of no use with people of so low a civilisation, as it required too high a sense for accuracy in accommodation, being an instrument somewhat similar to a telescope. But I found it very practical to take a veil, to put it at a distance of from four to six inches, viz., within the distance of accurate sight for "normal eyes;"

I then requested the person to be examined to look at any distant object, and asked, when he had well fixed it, closing myself alternately the one and the other of his two eyes, with which eye he did better see the veil, or less badly see the veil. As this question was unexpected also, prejudice could less interfere with the answer. Now, in a proportion of about six to four, the right eye was less far-sighted, or, what may be considered as the same (as always confirmed when closely examined by a peculiar kind of reflecting instrument), the right eye was the more convex one of the two. As with these people writing and reading does interfere, whilst shooting rather would train the right eye to distant accommodation, the result is the more important. The explanation which appears to me to be the most plain, and, at the same time satisfactory, is, I think, that it coincides with the general stronger powers of muscles on the right half of our body, which coincides with the eye being made more convex, and not quite so far-sighted.

G.—These ethnographical observations are to form the object of vol. vii of our results of a scientific mission to India and High Asia, of which three volumes in 4to and one in 8vo have appeared till now, altogether with an Atlas of fifty-two plates, and that of the entire series of two hundred and seventy-five casts; besides the continental museums, one is in England, and three in India, whilst Mr. Trübner is preparing a new edition in successive groups for the public in general.

On the Domber. By JOHN SHORTT, M.D., F.A.S.L., Zillah Surgeon, Chingleput.

“*Dommari*” and “*Dombari*” are Telooogo and Marathè words, corrupted from the Hindostanee “*Doru*,” and applied to a certain low caste of natives supposed to be one of the aboriginal races of India. The corrupted word “*Domber*” is applied to a class of people who perform acrobatic feats, such as rope-dancing, tumbling, pole-climbing, &c., &c., not only the men, but even the women, being great experts in these feats, by which they gain a precarious livelihood. An itinerating camp of these people, usually consisting of about twenty persons, is to be met with in almost every district, a camp always keeping to one district, and never wandering to others.

The Domber are usually tall, and some of them tolerably well made, with a complexion varying from bamboo to copper colour, and in some merging into black. The Mongolian is the predominant type of countenance, evidenced by the somewhat pointed chin and absence of whiskers, large eyes, and prominent cheek-bones; with few exceptions their muscles are not more developed than those of other natives, though, from their habits and evident strength, one would naturally expect to find them a muscular race. A few of the women are tall and well made, with a bold expression of countenance; the best looking are brought up as prostitutes, but the men of the gang have nothing to say to them. They can cohabit with the men of other gangs, and with all others, except Mussulmans, Pariahs, Barbers, and Dhobies. The other women among them are married,

and from these prostitutes are distinguished by the name of "*Vashee*," or harlot; these latter are the women who tumble and dance.

Caste. They are recognised as the Domber caste all over Southern India.

Dress. They dress much in the same manner as other natives, the men frequently wear made trousers and jackets, and the women wear the usual *sari* with the *cholee*, or short jacket, and their dancing women, when about to perform, twist their clothes tightly round their legs like trousers; these women are usually better dressed, and wear more clothes than the others. The men make their own clothes, and the women their own jackets; both men and women seem to sew very well.

Ornaments. Like natives in general, the men wear nose-ear- and finger-rings, armlets, &c.; the women wear ear-nose-finger- and toe-rings, necklaces, armlets, bracelets, and anklets. These usually consist of silver, gold, or brass, the greater number of their ornaments being of the latter. They also make use of glass beads of different kinds and colours, and the women wear necklaces made of these.

Ceremonies. They appoint one of their caste, whose business it is to marry the others, but no particular ceremonies are performed; the bridegroom usually finds liquor for the gang. When a girl attains maturity, she is kept apart for five days, and when a woman is confined of a child she is kept apart for a week. On the first day they give her plain rice, and on the second chillie powder, and "curry-pillay,"* is mixed with the rice. They have no midwives among them. They bury their dead, but no particular ceremonies are observed. They have no religious feasts of their own, but join in all the native feasts.

Language. This is usually Teloogoo, but differs sometimes according to the district in which they itinerate.

Habits. The men and the prostitutes go out during the day, and exhibit their feats in rope-dancing, &c.; the latter ply their own trade after nightfall. Those who do not perform hunt the wild cat, jackal, guana, and other small animals, or fish; some make mats, and wooden hair combs for sale, and the women and children tend donkeys, pigs, &c., of which they usually have a large number, either for use or sale. They marry but one wife; other women may be taken into concubinage. Judging from the number of children among them, they seem to breed freely.

Feats. These are very similar to those performed by the street acrobats in England, and consists of tumbling head over heels, backwards and forwards, walking on stilts, walking, dancing, and sliding on the tight rope, climbing a pole, and twirling round on a pivot at its extremity, the abdomen resting on the pole, and the arms and legs free in the air; placing stones on the mouth, chest, and pelvis, and throwing up others to strike these in their fall. One man walks about with another standing erect on his shoulders or head. Three men stand erect one on the other; the men and women vie with each other in tumbling, &c.

* Leaf of the *Kaenigii Bergera*.

Villages. As they are constantly itinerating from place to place : they have no fixed village. They generally encamp on the outskirts of a native village, and their stay in a place is indefinite, depending, in a great measure, on their gains. Their huts are portable, and consist of a few bamboos arched over, and covered with mats sewn together, and made of the palmyra leaflets; the centre of the hut is about five feet in height, and it covers a diameter of between five and six feet of ground; each contains a *charpoy*, or cot, about two feet from the ground; the frame is plaited over with ropes, on which two, three, or more people sleep. All their cooking operations are carried on outside. When they travel, their huts are easily taken down, tied together, and carried on donkeys, which are used as pack animals.

Diseases. They are subject to the usual diseases of the district; none of their tribe are skilled in the use of herbs or other medicine; they do what they can in cases of sickness. They do not approve of vaccination, as they believe that it will bring down the anger of their deity on them.

Deities. They worship a female deity, whom they call "*Polaree Amah*," and whose blessing they constantly invoke in all their movements. They are, to a certain extent, superstitious about ghosts, evil spirits, good and bad days, &c.

I here give the heights, measurements, and weights of nine men and three women; unfortunately I could not get a larger number together.

NAMES.	No.	Country.	Age.	Height, inch.	Head.	Neck.	Chest.	Arms.	Thighs.	Weights.
Venketerddy	1	Madras (Chingleput) District.	35	64½	21½	13	31½	9½	16½	102
Rungadad	2		24	73	22	13½	34	10½	18	130
Rugavadoo	3		21	68½	22	13½	34½	11	19½	138
Rhungadoo	4		20	66½	21½	13½	32	9½	17	104
Chengadoo	5		50	67½	21½	13	33	10	18	120
Ellaogadoo	6		23	63	21½	13½	31½	10½	16½	109
Mooselegadoo	7		35	68½	21	13	32½	9½	16½	108
Venketgadoo	8		17	61½	20	10½	25	6½	13	93
Kunnegan	9		22	66	21	10	30	9½	16	106
WOMEN.										
Lutehee	1	Madras	22	62½	21	11½	31	10	16	108
Ellee	2		14	57½	20½	10	28	7½	14	76
Yenkatee	3		40	63	21	12	33	10½	16½	125
Subbee	4		20	61½	21	12	30	9½	16	110

The PRESIDENT observed, that he knew of no anthropologist who wrote papers in a more scientific manner than Dr. Shortt; and although his communication was very brief and in a great measure technical, it was very valuable from its completeness. He then called on Mr. Pike to read the next paper.

On the Place of the Sciences of Mind and Language in the Science of Man. By LUKE OWEN PIKE, M.A., F.A.S.L.

AMONG the legion of sciences which are necessary to the formation of a Science of Man, there is one which has fascinated philosophers from the earliest dawn of philosophy, and which has advanced only one stage since its birth. So stationary has this unfortunate science been, that there are many who would have us abandon it in despair, and who argue that, where the most powerful intellects of the past have failed, no one can in future expect to succeed. And so deeply seated is this feeling, that by some persons a man who studies psychology is regarded in the same light as a man who believes in the possibility of perpetual motion. Hence it is difficult to say anything upon the subject without fearing that prejudice will put down all that is said either to arrogance or to folly.

Whether this prejudice be well founded or not, it is, I believe, generally admitted that, without a science of mind, a science of man is impossible. All arguments, therefore, for the abandonment of the study of psychology, apply with at least equal force to the abandonment of the study of anthropology; and from this I conclude that the existence of the Anthropological Society necessarily implies an attempt to solve the mysteries of mind.

The object of this paper is to show what I believe to be one or two of the causes of the arrested growth of psychology.

One of the principal causes seems certainly to be man's notion of his own dignity, which prevents him from comparing impartially his own mental endowments with those of the brutes. And this one cause has given rise to a host of prejudices, which in their turn act as so many new impediments to the progress of discovery. Man admits, with reluctance perhaps, that the other *mammalia* approach very near him in construction, and tolerates the science of comparative anatomy. But hint to him that there is a corresponding similarity in the mental constitution of brutes, and he at once feels insulted. Comparative anatomy is bad enough, but comparative psychology is not to be thought of. And yet this sensitiveness is really uncalled for. There is no fear that comparative psychology will fail to exhibit the immense superiority of man to the brutes. It will, should it ever really become a science, show not only that man is above the brutes, but how far he is above them—and this, if I am not mistaken, in no vague terms, but in figures as intelligible as those which mark the difference between sulphurous acid and sulphuric acid. On this subject, I hope, if the Society will do me the honour to listen to me, to say more on a future occasion. For the present, my object is to clear the way by shewing that the difference between the minds of man and of the brute is a difference not of kind, but of degree. Unless this can be proved, comparative psychology, in the sense of a quantitative analysis of different mental phenomena, must of course be given up.

There is not, I believe, any *a priori* reason to suppose that there is a difference of kind between the brute intellect and the human intel-

lect. Whatever difference may exist, must be shewn to exist by evidence, and not taken for granted; and the evidence which bears upon this point will be the basis of comparative psychology, should such a science ever be established.

But, as examples are always preferable to vague generalities, I shall endeavour to show by an example or two what kind of assistance we may expect from comparative psychology, i.e. from the comparison of the mental constitutions of man and brute. Could we, for instance, pronounce with certainty that man is the only possessor of a *hippocampus minor* (as was once asserted by Professor Owen), and also the only possessor of "general ideas" (as is asserted by Professor Max Müller), we should have a definite correlation to work upon, from which it might be possible to deduce still more important results. Unfortunately, however, neither of these assertions has been established; nor am I aware that any difference but difference of degree has been ascertained between either the cerebral structure or the mental functions of men and brutes. On the one hand, we find a greater size of brain, a greater number of convolutions, and greater mental power; on the other hand, a less size of brain, fewer convolutions, and less mental power. It may, however, probably be safely asserted that some of the lower types of animal life show higher mental powers than man in proportion to their cerebral and nervous development; this is especially the case among insects, as, for instance, ants, wasps, bees, etc.

It is, I believe, generally, though not universally, admitted that brutes can reason; or, in other words, that the laws of association apply to them no less than to ourselves. And to admit this, is to admit the principle for which I contend—that the intellectual difference between us and them is a difference only of degree. Nor does it seem possible to establish a greater difference between our emotions and theirs. A dog has a sense of shame, which implies what is called a sense of right and wrong, a sense of personal dignity, a sense even of the ridiculous. He is brave, honest, and affectionate; and is not that a good character even for a man? The feelings that may be wanting in one brute are present in another. The cat has the modesty in which the dog is ludicrously deficient. Nay, so conspicuous is the possession of many of our virtues by the brutes, that men have from the earliest times been designated by the name of the animal which seemed to enjoy their particular virtues in the highest perfection. Richard Cœur de Lion and William the Lion are names familiar to every one; the eagle is the most common national emblem; and if philology attributed the Egyptian religious rites to a similar origin, it would not be the wildest prank she has played.

But the best way to establish my position will, perhaps, be to examine the arguments of one of the foremost advocates of the opposite theory. And this examination will best illustrate the bearing of the science of language upon the science of mind.

Professor Max Müller has made these two assertions:*

* Lecture ix, *passim*.

1. "The science of language proves that all root-words expressed 'general ideas'—that the first thing named was the 'general idea'.

2. "Brutes have not 'general ideas'; and therefore we have arrived at the true distinction between man and brute, viz. the 'general idea', and the expression of it, neither of which is possible without the other."

I think it may be shewn that the first proposition is an impossibility, and that the second is directly opposed to fact; and I say this after having carefully weighed the evidence, and in spite of my admiration for the whole of the earlier portion of Professor Max Müller's work.

From an unfortunate confusion of terms, it is not at first sight easy to discover precisely what is Professor Max Müller's meaning. Following the custom of a certain school of philosophy, he uses the word "general", sometimes at least, as synonymous with abstract; a practice which Mr. Mill* characterises, not too strongly, as an "abuse of language", and a "wanton alteration of the meaning of a word". But Professor Max Müller must mean one of three things: that roots were originally all general names, or that they were all abstract names, or that some were one and some were the other. He must mean that classes were named first, or that attributes were named first, or that roots expressed sometimes classes and sometimes attributes. The distinction will be more apparent if we examine two instances. We may suppose that the attribute *whiteness* was expressed by some primary root; or we may suppose that the class *white*, that is to say white objects in general, were so expressed. The difference in the meaning of the two words is thus stated by Mr. Mill.† "Whiteness is the name of the colour exclusively; white is a name of all things whatever having the colour; a name not of the quality whiteness, but of every white object." Snow is white, but snow is not whiteness. Which of these two meanings was expressed by the root, according to Professor Müller?

Let us as a second instance take the word dog. Was this name first given as a name for all dogs, or was some abstract name equivalent to—let us say—"wag-tailiness", given first to a characteristic attribute or quality perceived in dogs, and then transferred to dogs themselves? Or, if this latter alternative be thought too absurd, are we to reject the abstract signification of roots in some cases and retain it in others?

The only way to answer this question will obviously be to examine some of the instances given by the professor himself. But when we attempt to do this, we at once find, in his manner of assigning a meaning to the root, a want of precision which corresponds with the ambiguity in the meaning of the term "general". "*Antrum*," says Professor Müller,‡ "means really the same as *internum*. *Antar*, in Sanskrit, means between and within. *Antrum*, therefore, meant originally what is within or inside the earth or anything else. It is clear, therefore, that such a name could not have been given to any

* Logic, 3rd edition, vol. i, p. 29.

† Ibid., p. 31.

‡ Lectures on the Science of Language, 3rd edition, p. 482.

individual cave, unless the general idea of being within, or inwardness, had been present in the mind. This general idea once formed, and once expressed by the pronominal root *an* or *antar*, the process of naming is clear and intelligible."

The process of naming the *antrum* may be clear enough, but not the original meaning of *an* or *antar*. Did *an* mean *within* or *inwardness*? Was the pronominal root, in plain English, a pronoun, or was it not? Would the first man who used the word have said, "The cave is *an* (within) the earth", or "The relation in which the cave stands to the earth is that of *an* (inwardness)"? Did *an* express the relation between an indefinite number of pairs of objects in the concrete, or was it a name for that relation in the abstract? To this question no answer is to be found in the immediate context. Common sense might perhaps supply one.

The same remarks apply to the meaning assigned to the root *ku*, from which Professor Max Müller derives *cavea* and *caverna*. "The general idea of covering existed in the mind before it was applied to hiding places."† Possibly so; but was it named first—that is to say, was the attribute of covering abstracted from objects which cover, and named before those objects, or was the name applied first to all objects, as a class, which possessed the attribute of covering? In this case, the Professor seems to imply that the attribute—the abstract—was the first signification of the root. "It," he says,‡ (*i.e.* the cavern) was called by the root *ku* or *sku*, which conveyed the idea of to cover." Further on§ there is a passage which can admit of no doubt. "It is the same with all nouns. They all express originally one out of the many attributes of a thing; and that attribute, whether it be a quality or an action, is necessarily a general idea."

By general ideas, then, I think we are justified in concluding that the professor means abstract ideas; and all roots, according to him, expressed abstract ideas, and nothing else. The paradoxical character of this theory is the only excuse I have to offer for the foregoing length, and, I am afraid, tedious examination of Professor Müller's illustrations; but it was, I think, necessary, in order to leave no doubt open about his meaning. And now let us consider to what this theory will lead us. Some attribute, no matter what, must have been the first to receive a name; and at that time all other things must have been nameless. Let us now suppose that the first articulate-speaking man has in his mind or upon his lips this first root-word; how is he to make it intelligible to his comrades? Until it is made intelligible, it cannot fairly be called language; and to make an abstract name intelligible without the assistance of other words is, if not impossible, a feat requiring greater ingenuity than most civilised men possess. Here is the problem: on one side is a human being able to articulate one monosyllable signifying an abstract idea, and able also to gesticulate; on the other side, a human being or beings, also able to gesticulate, but without the power of uttering a single articulate significant sound. How is the meaning of the word

† Lectures, 3d edition, p. 382.

‡ Ibid.

§ Ibid.
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to be communicated? I must confess I have tried to find a way out of the difficulty, and have failed. Suppose, for instance, the first speaker wishes to convey that the attribute of light* or brightness is to be conveyed by the word *luc*. He points perhaps to the sun, and says "*luc*". But what interpretation could the hearer place upon the gesture and the utterance, except that the object pointed out is to be called *luc*? How are the roundness and the heat of the sun to be eliminated from the meaning of the word, while the light only is left behind? Obviously only by a repetition of the word and gesture when other shining objects are in view. But in this case, the particular would have been first named, and the meaning of the name would have been transferred to the general and the abstract. In this particular instance there is a curious difficulty; for, while we must suppose that *luc* meant originally *light*† in the abstract, we are told that *luc*-s (*lux*), the Latin word which expresses that meaning, is equivalent to "*shining there*", *s* being a pronominal suffix. But if there is such a thing as an abstract and general name, *lux* must certainly come under that definition. It means not *shining there* in particular, but shining wherever you please—here, there, and everywhere—it means the attribute of light, not of any particular kind, but of all kinds. We are therefore left to suppose that, although *luc* originally meant light in the abstract, it became necessary in Latin to add something to it, in order to express the idea of light, and that something a pronoun which would have the effect of limiting and particularising the meaning. If so, surely *luc* must have been of more abstract and more general signification than light, though including that idea, and the first founders of language must have had minds of a most scientific character: it would hardly be unreasonable to conclude that they had arrived at the idea of the correlation of forces. But such are the difficulties and contradictions which beset the theory of the abstract signification of roots.

In short, it is impossible to name intelligibly to others what it is impossible to indicate to others; and it is impossible to indicate an abstract idea without previously existing language. That abstract ideas could have first received a name is, then, impossible; and we are therefore justified in concluding that the concrete was the *primum appellatum*. On this subject, Adam Smith makes some excellent remarks. Professor Max Müller has quoted from him, and professed to give his theory in his own words; but has not quoted or answered the following passage. "As neither quality nor relation can exist in abstract, it is natural to suppose that the words which denote them, considered in concrete the way in which we always see them subsist, would be of much earlier invention than those which express them considered in abstract, the way in which we never see them subsist. The words *green* and *blue* would, in all probability, be sooner invented than the words *greenness* and *blueness*; the words *above* and *below* than the words *superiority* and *inferiority*. To invent words of the

* Lectures, p. 274.

† Professor Max Müller says "to shine". But he does not of course mean the infinitive mood of the verb shine.

latter kind requires a much greater effort of abstraction than to invent those of the former. It is probable, therefore, that such abstract terms would be of much later institution. Accordingly, their etymologists generally show that they are so, they being generally derived from others that are concrete.*

But, inasmuch as concrete names may be general names in the true sense of the term "general", it may be worth while to examine whether roots could have been general names of this kind—whether an indefinite number of objects could have received a common name before that name had been given to one particular object. This is the more necessary, inasmuch as it is possible that Professor Müller may have included names of this kind in his idea of the class "general". His own language seems to exclude this meaning; but the words of Leibniz, which he adopts, certainly include it, and it alone. "We may, therefore," he says,† quoting from Leibniz, "assert that the names of individual things were names of species, which were given, *par excellence* or otherwise, to some individual."

But the second question which this unfortunate confusion of terms has raised, surely answers itself. How could one human being, possessing a language of one word, inform another human being, altogether ignorant of language, that he desired by his one word to signify not one particular object, which he might point out, but an indefinite number of objects, some of which he could point out only on a future occasion, and others not at all? If one object is pointed out, the word must be taken to signify that one object; if several are pointed out at once, as, for instance, a flock of birds, or a pile of stones, it remains uncertain whether the word is applied to the total flock or pile, or to each of the individual objects making up that total, or to the act of flying, or to the shape of the pile. A word could have obtained a definite signification only by being applied first to a single definite object. The names of the species and of the attributes would grow up naturally out of this original word.

In no sense, then, could the first thing named have been a general idea. It must have been concrete and particular. And all the facts of the case really bear out this proposition; though they also bear out a proposition somewhat like that of Professor Max Müller in expression, but essentially different from it in fact. Though it is impossible that attributes could have been named first, it is certain that all things must have been first named from the possession of attributes. To say this, is to say no more than that things received different names because they differed—a truism which no one will be inclined to dispute. But it does not even follow that things were named from the possession of a single attribute. They may have been named, and probably were named, from the possession of many attributes, which made them what they were.

But, it may be said, Professor Max Müller has brought forward the strongest evidence to show that all root-words expressed general ideas. My answer to this is, that the evidence which he has adduced

* Theory of Moral Sentiments, Basel, 1793, vol. ii, p. 280.

† Lectures, p. 380.

is all on the other side. For, let it be granted that there once was an Aryan language, all the words of which were monosyllabic, what proof have we that these were the original roots of an original language? All that Professor Müller can tell us of them is, that modified, in one way they express the general, in another the particular; in one way the concrete, in another the abstract. He does not pretend to say that Aryan was the original language, or that others may not have preceded it. To maintain that Aryan affords any evidence of the original meaning of root-words is, if we are to accept Professor Müller's etymologies, to maintain that men learned to measure before they gave a name to the moon, studied the phenomena of reproduction before they gave a name to the sun, learned to plough before they named the earth they stood upon, and ascertained that "dust they were, and unto dust they must return", before they named their own species!*

In addition to this, it is asserted† that the Aryans had attained a civilisation as great as that of the Germans described by Tacitus. If so, it certainly cannot be among such a people that we are to look for the first origin of language.

But the best example of a radical language—of a language in which roots are words—is, according to Professor Max Müller, the Chinese. And in Chinese we find, even by his own showing, that the same word expresses both the abstract and the concrete, and that "the number of imitative sounds is very considerable."‡ In other words, the most primitive form of language is that which offers the strongest evidence against the theory that general ideas formed the basis of all language. The same word, "jin", means "man", "woman", and "humanity". What evidence this fact offers that humanity in the abstract was named before any particular man, it is difficult to discover. "The history of every substantive," says Professor Max Müller,§ "might be cited in support of the view that the particular was first named." To admit this, and to assert at the same time that the general was the first named, is to invert the ordinary process of induction. It would be equally reasonable to argue that, although water has now a tendency to run down hill, it had formerly a tendency to run up hill; that, though the three angles of every triangle are now equal to two right angles, they were formerly equal to less or more; that, though fire now produces the sensation of heat, it formerly produced the sensation of cold.

If the language which is in the most primitive condition affords most instances of onomatopœia, we may surely conclude that onomatopœia had a considerable share in the formation of language. The fact, if fact it be, that the imitative sounds with which we are acquainted have not been fertile in derivatives, does not prove that imitative sounds never had any derivatives. It is quite possible that the imitative sounds originally in use may have become so modified in sound and meaning as to be no longer recognised as imitative, and to be much better adapted for new variations of meaning than those

* Lectures, p. 387. † Ibid., p. 239. ‡ Ibid., p. 373, note. § Ibid., p. 381.

imitative sounds which have come into use more recently.* But the statement that no imitative sound or ejaculation has had a large family of derivatives is refuted, in one instance at least, by the root *ma*. This sound is one of the earliest uttered by the infant; and a sound very like it is uttered by more than one of the brutes. In the earliest human life it is the sound of the child crying for the breast. The stimulus of appetite acting upon the vocal organs seems to call forth this sound before, or at least more frequently, than any others. That it has a definite meaning will hardly be maintained. The irritation of nerves consequent upon inanition seeks relief in an articulate sound; but, in the minds of the parents, the sound becomes connected with the idea of the breast. Perhaps the reduplication of the sound *ma-ma* conveys the idea of the two breasts. And the transition of meaning from the two breasts to the mother is not difficult. From this root *ma*, we may trace the various Aryan names for *mother*—the Sanskrit *mātri*, the Greek *μήτηρ*, the German *mutter*, and all their derivatives. It is not unreasonable to suppose that *ma-tu-rus* may have come from the same source, meaning originally “of an age to become a mother.”† There is every probability that the Greek and Latin words for apple, *μήλον* and *malum*, had the same origin; for in Greek, at least, the word is used metaphorically to express the breast. *Μηλοῦχος* is a girdle that confines the breasts. “*Μήνη*, the moon,” says Professor Max Müller, “means the measurer.” Does it not rather mean the mother—the mate of the sun, whom Professor Müller asserts to be the begetter? The Sanskrit *má*, to measure, may have been derived from the root *ma*, signifying originally mother, and metaphorically the moon. The Latin *mano*, to flow, comes probably from the same root: source and mother are words that may be used metaphorically for each other. Here are a number of words, each of widely different signification, each having a number of derivatives, and each having as good evidence of descent from the common root *ma* as any of the words cited by Professor Max Müller can give of their genealogy. There is as good evidence that the adjective *malic* is derived from the root *ma*, as that earth is derived from the root *ar*; and surely the modification of meaning is as remarkable. The name of an acid in modern chemical science owes its origin to the first cry uttered by an infant unnumbered ages ago. It is not improbable that many more roots might be traced to ejaculations, or cries resulting from emotion, and perhaps even in the cries of the brutes.

The object of Professor Max Müller's line of argument is apparently to prove that there is a fundamental distinction of kind between the intellect of man and the intellect of brute. That the dignity of man must be asserted at any cost seems to be the doctrine of many philosophers. Be it so; but is the dignity of man really asserted by a misstatement of the facts? Surely we, as men, can afford to give the brutes their due; the superiority of man will bear the light

* “But words of this kind are like artificial flowers, without a root. They are sterile, and are unfit to express anything beyond the one object which they imitate.” (*Lectures*, p. 368.)

† See Horace, *Odes*, III, vi, 21; and Virgil, *Æneid*, vii, 53.



of day, and needs not to be puffed like the spurious wares of a dishonest tradesman. The largest concessions to the brutes cannot transform a gorilla into a Shakspeare or a Müller; and we may afford to inquire calmly how near to us the brutes approach without fear that the inquiry will bring them any closer.

"The having of general ideas is that which puts a perfect distinction betwixt man and brute. No animal thinks, and no animal speaks, except man. Language and thought are inseparable. Words without thoughts are dead sounds. Thoughts without words are nothing. To think is to speak low; to speak is to think aloud. The word is the thought incarnate." So says Professor Max Müller;* but this rhapsody amounts to no more than a statement without explanation of the dilemma of Rousseau: "si les hommes ont eu besoin de la parole pour apprendre à penser, ils ont eu bien plus besoin encore de savoir penser pour trouver l'art de la parole."†

This dilemma of Rousseau's has been translated into German by Wilhelm von Humboldt, and quoted again and again as a fine saying. "Der Mensch ist nur Mensch durch Sprache; um aber die Sprache zu erfinden müsste er schon Mensch seyn." Professor Max Müller gives it us both in German and in English; but two propositions which contradict each other cannot prove the origin of language from any source whatever.

"To think is to speak low," says Professor Max Müller, and in that one sentence lies wrapt up the fallacy which makes the brute intellect distinct in kind from that of man. It is assumed that language is the same as articulation, or at least that articulation is necessary to language. If this be so, and if language be necessary to thought, no deaf and dumb person can think—a proposition which will certainly not be maintained. That articulate language facilitates thought more than some other kinds of language no one will dispute. But it does so because it serves as a mental shorthand, just as algebra shortens the process which might, perhaps, if there were sufficient time, be performed, though with infinite labour, by ordinary language itself.

It is possibly true that we cannot think without symbols, for the recollection of a thing may stand as the symbol of the thing itself. But all symbols are not language, though all language may consist of symbols. We may invent a symbol for our own use, which we do not intend to make, and which we may be unable to make a means of communication with others. It is probable that brutes think by means of such symbols. For instance, the mental picture of a single cat, dog, man, etc., may serve as a symbol of the whole species. Certainly I succeeded in impressing upon a dog the meaning of the general name cat, which would, I think, have been impossible, had he not possessed some power of this kind. The word became, in his case, I conclude, as in my own, a symbol of the symbol in his mind,

* Lectures, pp. 390-1.

† Discours sur l'origine de l'inégalité parmi les hommes: Panthéon Littéraire. Œuvres de J. J. Rousseau, vol. i, p. 545.

which though itself a cat of some definite size and colour, represented cats of all sizes and all colours.

And symbols may pass through several distinct stages.

1. They may be used by an animal for his own convenience only, in which sense they may be called instruments of thought.

2. They may be used for the purpose of communication (but not in the form of articulate speech), as in communicating ideas of food, danger, game, etc. Both brutes and men use this kind of language. The cawing of the crow, the whistle of the thief, the look of the lover, may all be classed under this head.

3. They may be used in the form of articulate speech and written language.

4. They may take the form of algebraical symbols, and so there may be an algebra of algebra, symbols of symbols, *ad infinitum*.

Can it then be said, that articulate language is necessary to thought with any more justice than that algebra is necessary to thought? Is it not rather the fact that the symbols of language are a convenient help to thought, but only in so far as they are symbols. They are artificial symbols of natural mental symbols. By the latter we are able to think, by the former we are able to communicate our thoughts, and to store up past experience. By language we economise the processes of thought, just as by algebra we economise the use of language.

The general name, then, is but a symbol of a symbol. An individual is mentally made the representative of a class, and stands as a symbol for that class. The general name is a name or a symbol of that symbol. And in the attempt to conceive the meaning of an abstract name, a particular object possessing the attribute named is summoned up as a symbol. Use language how you will, you cannot realise the meaning to yourself without the aid of these mental symbols. It may not always be necessary to translate the symbols of language into the symbols of mind, but, where language has a meaning, it is always possible.

If, then, the having of general ideas mean no more than the faculty of making a particular object serve in the mind as the representative of a class, I am quite at a loss to understand how Professor Max Müller, or his authority, Locke, has discovered that the brutes are without general ideas. That men possess general ideas in any other sense cannot, I believe, be proved; that brutes possess them in this sense we have all the evidence that can be obtained from their actions. Any one who doubts this must have been unobservant of the habits of brutes—must have argued somewhat in this way: "brutes cannot have general ideas, because I should not like to believe that they have; therefore they have not; therefore there is a fundamental distinction of kind between the intellect of man and brute."

In confirmation of my view, I quote from Jesse's *Gleanings in Natural History** an instance which Mr. Jesse declares to have come under his own personal observation. "I was one day feeding," he

* Sixth edition, p. 11.

says, "the poor elephant (who was so barbarously put to death at Exeter Change) with potatoes, which he took out of my hand. One of them, a round one, fell on the floor, just out of the reach of his proboscis. He leaned against his wooden bar, put out his trunk, and could just touch the potato, but could not pick it up. After several ineffectual efforts, he at last *blew* the potato against the opposite wall with sufficient force to make it rebound, and he then, without difficulty, secured it."

Now, had a philosopher done this, we should have been told that he had the abstract (or as Professor Max Müller would say, the general) idea of elasticity. The simple fact is, that both the philosopher and the elephant can recollect past facts, and apply them to present emergencies. Call it what you will—a general idea, an abstract idea, an evidence of the law of similarity,* an act of reason, or by any other grandiloquent name, the fact is still the same. The elephant did all the philosopher could have done under those particular circumstances; he hit upon a plan for getting the potato, and got it. When Newton applied the motion of the apple to the planets, he performed precisely the same kind of mental operation.

Mr. Jesse gives innumerable cases equally illustrative of brute powers. Many of the stories which he tells may appear incredible; but of those which he tells as coming under his own observation there can surely be no doubt. The others may be true or false, but they are certainly not incredible to any one who has studied the habits of even one or two brutes for a few years; they are incredible only to those *a priori* reasoners who think nothing can be true which is opposed to their particular views.

But suppose we reject all the cases in Mr. Jesse's book, and confine ourselves only to those which Professor Max Müller admits. "When a whale is struck," he says,† "the whole shoal, though widely dispersed, are instantly made aware of the presence of an enemy." What is communicated in this case but a "general" idea—the idea of danger? If the idea of danger is not what the Professor calls a "general idea," his terms are utterly devoid of meaning. He also gives another case still more to the purpose. "A parrot," he says,‡ "will take up a nut, and throw it down again without attempting to crack it. He has found that it is light; this he could discover only by comparing the weight of the good nuts with that of the bad; and he has found that it has no kernel; this he could discover only by what philosophers would dignify with the grand title of syllogism, namely, 'all light nuts are hollow; this is a light nut, therefore this nut is hollow.'"

Now, on what ground does Professor Max Müller imply that a man, under similar circumstances, has the abstract idea of hollowness, and that the parrot has it not? That he does imply this there can be no doubt, when he says that man only has that "faculty of abstraction which is better known to us by the homely name of reason."§ I have failed to discover any attempt to bring evidence

* See Brain, the Senses, and the Intellect, p. 512.

† P. 361.

‡ P. 358.

§ Lectures, p. 363.

that a man would discover the hollowness of the nut by that "faculty of abstraction which is better known to us by the homely name of reason," while the parrot would discover it by the different process which "philosophers would dignify with the grand title of syllogism." And I have failed, moreover, to discover that there is any difference in the two processes. All deductive reasoning may be exhibited in the form of the syllogism, but Mr. Mill has clearly shown that all inference is really from particulars to particulars. The process by which the hollowness of the nut is arrived at is of this kind: "This particular nut produces a sensation similar to the sensation produced by a certain other nut or nuts which were hollow; therefore this nut is hollow;" or to adopt the formula of Mr. Mill: "This nut has a mark (lightness) which is a mark of hollowness." Professor Max Müller has, perhaps, another name for this process, but it is generally known by the name of reasoning, and it is the process by which every proposition in Euclid is proved. Until the new name is made known and generally adopted, we are justified in concluding that parrots reason, and if we are to accept the statement that reason and the faculty of abstraction are one and the same, we may declare further that parrots have the faculty of abstraction. It appears to me, then, that by this one sentence Professor Max Müller has destroyed his own case and established mine.

It happens, strangely enough, that Rousseau, in discussing this question, took one of his illustrations from nuts. "Pense-t-on," says he,* of the monkey, who passes from one nut to another, "pense-t-on qu'il ait l'idée générale de cette sorte de fruit, et qu'il compare son archetype à ces deux individus?" The answer to this question is surely easy enough. There is no evidence whatever that the monkey has the capacity of realising to himself Platonic archetypes in a less or greater degree than man. The probability is that he knows a nut when he sees it, just as much as we do; at all events, all his actions seem to prove that to be the fact. If we say simply that the law of similarity seems to apply to brutes as well as to mankind, we say all that the facts will justify us in saying.

"There is," says Professor Max Müller,† "a petrified philosophy in language, and if we examine the most ancient word for name we find it is *nāman* in Sanskrit, *nomen* in Latin, *namo* in Gothic. This *nāman* stands for *gnāman*, which is preserved in the Latin cognomen. The *g* is dropped, as in *natus*, son, for *gnatus*. *Nāman*, therefore, and name are derived from the root *gnā*, to know, and meant originally that by which we know a thing." He goes on to argue that brutes neither know nor name anything, and that it is an abuse of language to say that they do. In curious contrast to this view are the words which Milton places in the mouth of the Almighty.‡

"Knowest thou not
Their language and their ways? They also know
And reason not contemptibly."

A poet's testimony may, perhaps, be thought of little weight in a

* Discours sur l'origine de l'inégalité parmi les hommes.

† Lectures, p. 384.

‡ Paradise Lost, b. viii, 372.

question of science, but it is, after all, the poet's imagination which enables the philosopher to discover laws of nature. These words, full of life and nature, are worth far more than the "petrified philosophy" of a questionable etymology.

But let it not be supposed that by any of my remarks I wish at all to detract from the very great abilities of the expounder of the science of language. No one can admire more than myself his philological ingenuity. It is only when he deals with subjects that are less familiar to him, and in which he is probably influenced by the prejudices of a particular German school and of a particular Oxford school, that, as it seems to me, he falls into the pit of self-contradictory dogmatism.

My object has been to show, and to show from the evidence of an adversary, on what footing we may expect the science of psychology to stand; to show that the impassable gulf supposed to yawn between the minds of brute and man is a fable as unfounded as those which stay-at-home travellers tell of unknown lands. When this point is once established, the place which psychology will take in the science of man is easily assigned. Comparative psychology must travel on side by side with comparative anatomy; and each in turn must lend a helping hand to the other. They must necessarily carry with them a whole train of subordinate sciences, one of which is the science of language; but without comparative psychology and comparative anatomy, a science of man is impossible. To neglect those sciences which illustrate man's corporeal nature would be as wise as to study anatomy in the soft tissues, and to ignore the skeleton, to examine the nerves of sensation, and neglect the nerves of motion, or as to study geology simply in the different *strata*, and to ignore the fossils they contain. To neglect those sciences which illustrate man's mental nature would be as wise as to study anatomy in the skeleton and ignore the soft tissues, to examine the nerves of motion and neglect the nerves of sensation, or as to study geology in the fossils and ignore the *strata*. In short, as the highest type of man is the cosmopolite, so the science which is to deal with man in general must be cosmopolitan.

The PRESIDENT observed, that the paper was written in the most liberal spirit, and he was sure they must all have been much interested in listening to it. The author of the paper had told them that comparative psychology showed that man is mentally above the lower animals, and how much, and that in all mental phenomena there is no difference in kind, but that the difference consists altogether in degree. The illustrations brought forward to confirm that view were very numerous and interesting. Man's spiritual pride had hitherto prevented him from recognising that law, if such it might be called,—for the generality of mankind were afraid to look simple facts in the face. The society were, therefore, much indebted to Mr. Pike for the clear statement he had made of his views on this interesting subject, on which there had been a large amount of foolish talk in scientific societies and in the universities.

Mr. BOUVERIE PUSEY observed, that the views of the author of the paper were in accordance with the oldest known conceptions of brute intelligence. In every collection of old tales, it would be found that brutes were made to talk, and were supposed to be influenced by similar motives as men. The same view was supported by the Hindoos and the Egyptians; and the doctrine of metempsychosis was founded on the supposed intelligence of brutes: the opposite opinion was a modern conception.

Mr. REYNOLDS considered that the illustrations adduced of the exercise of reasoning power by animals were indecisive. With respect to the illustration of the elephant and the potatoe, he thought the occurrence might have been altogether accidental. Animals were often seen to blow; and the elephant, irritated at not being able to reach the potato, might have blown through its proboscis without anticipating the effect. The illustration of the parrot and the light nut was also very doubtful evidence of reasoning power. The bird might have found out that the nut was a bad one by its feeling light, and that the nut was not, in fact, a nut, though looking like one.

Mr. St. CLAIR objected to the paper, that it was rather a refutation of the opinions of Professor Max Müller than an exposition of the subject in general. The science of comparative psychology should be established by independent facts and reasoning. It was not known, he said, that brutes have not abstract ideas, and that they do not form rational conceptions. After alluding to the affirmation of Locke of the same views as Professor Max Müller with respect to abstract ideas distinguishing man from brutes, and of Archbishop Whately on another distinction, Mr. St. Clair proceeded to say, that in an old sermon of Wesley's he showed that brutes are not altogether without reason; and the distinction he drew between man and beasts was, that man is capable of being religious, and that brutes are not. This was strictly true in a philosophical point of view. As to the illustration of the derivation of the word "mama," from the fact that the mother has two breasts, it would not bear examination. If the two breasts of the mother caused the repetition of the sound "ma," and so formed the word "ma-ma," the same cause could not apply to the formation of the word "pa-pa," which infants utter as readily as the former, though the breasts in the father are not conspicuous.

The Duke of ROUSSILLON suggested some considerations which he thought favoured the opinions of the author of the paper. He said he had been for a long time engaged in examining the opinions of various writers respecting the origin of a race of men whom he believed to be the most ancient of mankind. That race was called the Scythians, but the meaning of the word was lost. Fifteen hundred years before Ninus, the Scythians were in possession of Asia. There was no certainty respecting the time when that king reigned; but it appeared from all authorities on the subject, that it could not have been later than twelve hundred years before Christ. Some writers represented it to have been eighteen hundred years; but taking it to have been fifteen hundred for round numbers, it was evident that the Scythians were an organised society three thousand years before Christ, as at that time they were enabled to rule over Asia Minor. It was, there-

fore, nearly certain that there was a population in existence at that early period, who possessed laws, arms, organisation, and all the necessary appliances to enable them to fight and conquer. When they thus had before them a race who existed in a civilised condition four thousand eight hundred years before our time, it became a matter of great interest to ascertain what were the characteristics of that race. Certain authors were of opinion that they were the Mongolian race, and there is at the present time an author who says they were of the Caucasian race. He had carefully examined the evidence on this subject, and he intended shortly to publish his opinions, and the results of his investigations respecting it. He would now merely state that the Scythians had light hair, fair eyes, and a fair skin, and that from them were descended the Scandinavians, the Germans, the Sclavonians, and many other nations.

Mr. REDDIE said he should be sorry if the Anthropological Society of London came to the conclusion that there is no great difference between men and beasts. In anatomical construction, indeed, there was some resemblance; but if there was a distinction at all between man and the lower animals, it was chiefly in his possession of an exclusive kind of intelligence. He was not prepared to assert a distinction between man and beasts in all respects, but he did not agree in the opinion that the difference in their mental capacities is only a difference in degree. No reasoning power, properly so called, was evinced by animals. The instance of the sagacity of the elephant which had been adduced was no proof of reasoning power. It was probably only an accidental occurrence. Many better instances of the intelligence of animals might be adduced than that; but they were all of that kind of sagacity which is instinctive as distinguished from rational. It might rather be said that man has the faculty of instinct than that brutes have the faculty of reason, and there could be no doubt that many of our acts are instinctive. Thus, for example, when a stone is thrown at your head, you draw aside to avoid it from instinct, without reflection; and an animal possesses the same instinctive power of getting out of danger. The resemblance between animals and man is not in their having reason, but in man having also instincts. With regard to the origin of language, the illustration of the formation of the word "ma-ma" was not borne out by facts, for more generally the sound "da-da" is the first word that is uttered by an infant. If the development of the breast of the mother had any relation to the number of times the infant said "ma", she would have as many teats as a cow! As to the parrot and the dropped hollow nut, he did not think that illustration afforded any proof of reasoning power. He had seen a parrot crack hollow nuts, and he considered the instance when a parrot refused to do so, to be accidental, or an instinctive action only. He did not perceive any indication of the conception of abstract ideas in the sagacity of animals, or any approach to the power of speech; and, with respect to the antiquity of the notion that animals could talk, it could not surely be gravely intended that a literal interpretation should be given to the fables about talking animals, and to the words put into their mouths! As to the doctrine of metempsychosis, which had also been alluded to by the same speaker, it should be borne in mind that all those who

believed in the transmigration of souls believed also in the grand distinction between men and animals which reason and language create.

Mr. BLAKE adduced an instance of the communication of intelligence between a pilot-fish and a shark of which he was a witness, in about the latitude of Buenos Ayres, many years ago. A shark was observed alongside the ship and attempts were made to catch it. They got a piece of beef and fastened it to a hook, and as soon as it was thrown overboard the pilot-fish came and smelt at the bait. It then went back towards the shark, which continued at the beam of the vessel, and made some communication to it, the result of which was that the shark did not move. This was done several times with the same effect. They then baited the hook with a piece of pork, and the pilot-fish having examined it made its report to the shark, at a distance of more than thirty feet, when instantly the latter came to the stern of the vessel, made a snatch at the pork, which it swallowed, and then swam away with the meat and hook too. This was a fact witnessed by himself, and he should like to know what means of communication subsisted between the two fishes, so that they could thus understand each other.

Mr. C. CARTER BLAKE said the paper was so suggestive and was conceived in so liberal a spirit, that he only objected to some slight details. Mr. Pike had pointed out the difficulty of transmuting a gorilla into a Shakespeare or a Müller; but it was a difficulty of his own creation, for no one ever conceived of such a transmutation. The transmutationist only contended for the probable transmutation of the higher class of anthropoid apes, into the lowest class of human beings. As to the question whether language was inseparable from thought, it might be observed that some inferior races of man had a very low grade of language, and uttered sounds that did not convey distinct conventional ideas. He alluded, in support of that opinion, to the Veddahs, and to the observations of Sir Emerson Tennent to the same effect. In what respect, then, except in degree, did such a language differ from the communication of ideas among animals—such, for instance, as was recognised by the bark of a dog, or the mewing of a cat? For his own part he could not distinguish the difference. The communication of ideas by peculiar sounds was especially observable in animals brought under the control of man. It had been stated by Broca, that man might be deprived of the faculty of speech by taking away the second plait of the frontal convolution of the brain; and though, of course, we reject the hypothesis of phrenology in its strict application, there could be no doubt that the faculty of speech has some definite relation to nerve substance. The assertion that the distinction between man and brutes consists in his being a religious animal would not bear examination, for there are many tribes of savage men who have no idea of a God or of a future state; he therefore objected to that definition of man. He wished strongly to express the belief that the distinctions between man and brutes do not depend on moral or psychological forms of classification, but that it must depend on anatomical observation of some positive fact. He had no sympathy with those who, admitting man's physical sameness with the inferior animals, wish to give to man an immaterial substance

different from that which animals possess, yet do not show in what that difference consists.

Mr. WALLACE observed, in reference to the distinction drawn by Mr. Reddie between reason and instinct, that what is called instinct is generally the result of experience which forms a habit that is in time called instinctive. Alluding to the illustration of sagacity in a parrot in detecting a bad nut, he said that he knew a still better instance of apparent intelligence in a parroquet which he had. The bird was very fond of sugar, but could only take it when moistened, and when a dry lump of sugar was given to it, the bird dipped the sugar into water before attempting to eat it.

Mr. PIKE, in replying to the observations that had been made on his paper, said it was satisfactory to find that almost every one of the speakers had agreed to his main proposition. Mr. Reynolds had objected to the illustration of the elephant and the potato, that it was a mere assumption that the elephant reasoned on the effect of his blowing, and suggested that the rebound of the potato from the wall was merely an accident. But if so, it was a remarkable chance that the force of the elephant's breath should drive the potato against a particular point of the wall so that it should come back for him to catch it. Allowing, however, that to have been accidental, there were numerous other instances of sagacity in elephants which had given them the character of being reasoning animals. As to the parrot and the hollow nut, whatever might have been the means of indication still it was an act of reason so long as the bird did not crack the nut. Mr. St. Clair had objected to the paper on the ground that it was principally occupied with a refutation of the opinions of Professor Max Müller; but he (Mr. Pike) had selected that gentleman as the foremost of the class of reasoners who supported certain views. With respect to the instances of derivatives from the root "ma," the objections that had been raised to the derivation from it of the word "mama" did not refer to a fundamental point of the argument, for he suggested the connection of the repetition of the sound and the two breasts of the mother, merely as a conjecture. Mr. Reddie had accused him of saying there is no distinction between man and brutes; but what he said was directly contrary. He had stated "there is no fear that comparative psychology will fail to exhibit the immense superiority of man to the brutes." Mr. Reddie further asserted that no true instance had been adduced of reasoning power in brutes, and that they acted only from instinct. This objection seemed to resolve itself into a question of definition of terms. But it appeared to him that if an act performed by man was considered an act of reason, a similar act by a brute must also be so considered. In all such cases of what is called instinct, the fact is, that they are the results of experience applied by the faculty of reason. With respect to the observations of Mr. Carter Blake on what he had said about the transformation of a gorilla into a Shakespeare or a Müller, there was a little misapprehension. He was merely answering the opinions of other people, for nothing could be further from his own opinion than such a transmutation. The question of a common origin it was not necessary to enter into.

Notes on the Capabilities of the Negro for Civilisation. By HENRY F. J. GUPPY, F.A.S.L.

It is with much diffidence that I bring before the Anthropological Society a few observations on the apparent capabilities of the negro race for civilisation, so far, that is to say, as my own limited experience extends. I say *apparent*, because in Trinidad and other West India colonies, it has been contended that the negroes have been brutalised and reduced below their true standard, by slavery. However true this may have been at the time of emancipation, a sufficient number of years has now elapsed for a new generation, free from any oppressing influences, to show forth the natural powers of the negro mind. That slavery does not necessarily degrade the negro, however much other races might be affected thereby, has been proved by the observations of several persons, for we find in Dr. Waitz's valuable volume, so ably translated by Mr. Collingwood (p. 72), that it is stated in many cases, despite of slavery, his contact with the superior race in the Slave States of North America has considerably softened down his more animal characteristics, and rendered even his countenance more like that of a thinking being. And to counterbalance any deterioration that may have been produced by slavery, the descendants of the slaves have had the means of improvement and of civilisation brought to their very doors, and their adoption enforced by the most improved methods of education known to the highest civilised race. The possible effect of slavery on the physical and mental organisation of the negro has, to say the least, been grossly exaggerated. It confessedly requires several generations at least to effect any great or permanent change in this respect, and as regards the slaves in these colonies, a large proportion, if not the majority of them, at the emancipation were either native Africans, or the immediate descendants of such. And may it be asked, what example can be adduced of the slavery, however brutal, of one or two generations of a race producing such an effect, that the children, on having the means of improvement placed before them, have been found so far below their progenitors as to be unable to make an equal, or nearly equal, use of them? My own observations, slight as they are, fully bear out the remarks made on the subject by our respected president at the meeting of the British Association at Newcastle.* Leaving out, as he proposes, the mixed race, there are, within my experience, but very few examples of the pure black holding places of trust and confidence; such of them as do so, certainly have their features much more nearly approaching to those of Europeans than one would have imagined possible, that is to say, when compared with the general bulk of the negroes; so much so, indeed, is this the case in some instances, as almost to lead one to doubt the purity of their descent. It has been remarked, that when equally coloured individuals intermarry, their offspring become darker and darker; it might be worth while, perhaps, to ascertain how far the influence of the lighter and (let us

* Vide Anthropological Review for November 1863, p. 386.

assume) the superior race would extend. Would it continue to affect the features and form when the complexion had returned to the dark tint of the inferior race? And if so, would the mental powers in any measure correspond? These are interesting questions that it would be, no doubt, premature to answer. But if an affirmative could be given, we might, perhaps, explain, at least in some cases, the apparent anomaly of a completely black individual possessing bodily and mental characteristics exceeding much the standard of his race. As to the rebellious propensities of the negroes, it may be remarked, that when an outbreak does occur amongst them, as at St. Vincent a short while since, the object is generally one of lust or ease, and not one caused by ambitious and domineering ideas; we have seen this exemplified in Hayti, where the *extermination* of the numerically inferior race was determined on by the blacks, and not their subjugation, for that, indeed, was impracticable.

That it is far from being always the case that when the negro has opportunities of improvement he will use them, we have, unfortunately, too many instances in this island alone to prove. For example, there were some negroes conveyed hither after the American war of independence, in which they had fought on the side of the British, and who were allotted pieces of land, some ten or twelve miles from S. Fernando, the second town of the island. Their descendants, far from being improved, notwithstanding the advantages of having schools in their midst, and the constant efforts of clergymen and others to induce them to become more civilised, have decidedly retrograded. The original settlers, of whom a few are still alive, are found to be civil and well-ordered, whereas their children are wild and almost ferocious savages, extremely inhospitable, and jealous of the designs of visitors. The negroes generally have a tendency to withdraw themselves from the neighbourhood of their fellow colonists, and to bury themselves in the valleys and woods, there to live a merely animal life, cultivating, perhaps, a small patch of land, no more than is barely sufficient to supply themselves with scanty clothing, and, perhaps, to purchase a few such luxuries as tobacco or rum. This conduct is probably to be attributed to their natural and uneradicated desire for ease, and dislike for labour of any kind, having liberty to express itself by their possession of land, the cultivation of a very small portion of which being sufficient for a savage existence. Their distance, too, though small it be, from the pressure and presence of a more energetic people, no doubt contributes to this effect. This dislike of steady work and want of thrift has rendered the bulk of the negroes utterly unfit for labourers, and has necessitated the introduction, into some of these colonies, of Coolies from India and China. If the cultivation of these islands had, indeed, depended upon the exertions of the liberated slaves and their offspring, we should, long ere this, have sunk to such a low ebb, that our present condition is wealth comparatively, to what it would have been, though we are still struggling under many difficulties.

The negro, in effect, requires constant stimulation, and the hard

teaching of necessity to force him to activity. He has no ambition of rising either in intelligence or in wealth. When left to himself but for a short time, he falls back rapidly into a mere listless condition, in which he cares not for the outer world, or, indeed, for anything out of his own personal existence. As for knowledge, the progress of his fellow-beings, the improvements made in arts or sciences, all these are blanks to him; he seemingly comprehends not their import; and though their importance may be impressed on his mind for a while, he soon forgets all that he has heard, and quickly relapses into his former apathy. How different from this are the Chinese and Hindoos, with whom we are able, in some measure, to compare him, in this and other colonies, where the immigration of these races has been carried on for some years. With far less opportunities, both the Chinese and the Indian coolies, more especially, perhaps, the former, have already turned their advantages to some account. They trade, they speculate, and endeavour in other modes to emulate the wealth and prosperity of their fellow-citizens; indeed, it is a common observation here that some of our chief merchants will some day be of Chinese descent, if not Chinese themselves. There is barely an instance of such foresight and industry to be found in the pure negro, at all events, as existing here. He has no ambition for advancement, as I said before, and this may be said to sum up his character. If we were to take an average English labourer, and place him in similar circumstances, and in such a situation that by steady application to work he would soon attain independence, I am confident that he would prove, in a short time, that such a tempting prospect was sufficient to urge him on to renewed exertions.

In the discussion that ensued on the reading of Dr. Hunt's paper, Mr. Craft observed that the agricultural labourers in England were bent (in figure) as well as the negro. It may be observed that the majority of aboriginal races who, like the negroes, dislike labour, or, at all events, the labour of tilling the soil (which is the cause of the bend in the English labourer), are finely formed, and exceedingly straight, as for instance the Indians of North America and the Maoris, both of which races are undoubtedly highly capable of improvement, and who yet themselves admit the superiority of the Caucasian race.

If Mr. Craft's observations with regard to the intellectual power and independence of character of the Haytians be correct, how is it that that fine and beautiful island has so notoriously retrograded since its independence and erection into a negro state? Statistics and observations show the wild and desolate condition it has attained from the utter neglect of its inhabitants, who, taken up with continual and petty political squabbles and the mockery of a court, have left their fertile plantations and allowed them to return to a condition only worthy of a people utterly savage, and careless of progression. An island that before its independence produced more sugar than the whole of the other West India colonies (150,000 hogsheads), within twenty years after the negroes had had full possession, produced less than the smallest isle inhabited by Europeans; in 1823, for example,

it was estimated that the exports of sugar from St. Domingo amounted to but 6 or 700 hogsheads; and the deficiency was by no means made up by other products.*

As to Professor Wilson's remarks, it is not at all true that the negroes are to be compared to the inmates of a workhouse. I speak, of course, of those in the West Indies. They (the negroes) have liberty of action unrestrained, a climate that enables them to live upon little, and a soil that would allow them to procure a competence and even wealth, by the expenditure of a certain amount of energy; education can be had by every one, if they only think it worth the attendance at school.

The negro seems unable to adopt even the inventions of the Europeans for saving labour, or do so very slowly and clumsily indeed, whereas many other primitive peoples, the Maoris, for instance, have shown themselves the very contrary to this, and employ all the contrivances for saving labour possible for them to obtain, and learn with avidity of more.

It would, however, be undoubtedly wrong to say that the negro possesses no capacity for mental improvement; for that would be placing him in a very low rank of the animal creation indeed; but it would certainly seem that his capacity must be left, in a great measure, to itself, to develop into anything worthy of the name of civilisation. He does not comprehend that of the European; it is, as it were, out of his sphere. Such civilisation as he is capable of will be *sui generis*, and utterly unlike that of the Caucasian races. We shall not, probably, have any opportunity of witnessing this negro civilisation in the western hemisphere; for observation fully bears out Sir Alexander Tulloch's remark, "that before a century has passed, the negro race will almost have disappeared from the British colonies in the West Indies." As to the American negroes, the same in effect has been said of them by Nott, De Bow and others.

These remarks are made with reference solely to the pure negro; the mixed race, as might be naturally supposed, shows a great variety of conformation, both bodily and mentally, the latter especially perceptibly improving as the individual approaches more nearly to the European race. There are many men of great intelligence, and who occupy very respectable positions here, of the mulatto and lighter coloured classes; there is one thing that may be remarked of these, that they are, as a rule, neither so robust as either the European or the negro, and are certainly more liable to chest diseases.

May I be allowed to protest against the use of the word *African* as being synonymous with *negro*. The latter has, no doubt, its faults, but it is certainly more distinctive than the former, for we know very well that the negro, strictly so called, occupies but a small district comparatively speaking, of the immense continent of which he is a native, and to which he is peculiar. It is to be remarked that the former is a name that is affected by many of the coloured people, as conveying less reproach, as they think, than the other designation.

* Vide Quarterly Review, January 1824, p. 577.

The **PRESIDENT** said he so fully agreed with the author of the paper that it was unnecessary for him to speak on the subject immediately after it had been read. He wished to state, however, that he had had no communication with Mr. Guppy, though from the identity of opinion between them—on the incapacity of the negro for comprehending European civilisation—it might have been so supposed. This coincidence of opinion was the more remarkable as his own observations on the incapacity of the negro for European civilisation were not contained in the paper he had read at the meeting of the British Association, and which only had been seen by Mr. Guppy, but were introduced when he afterwards read the paper in that Society.

Mr. REDDIE considered the paper of Mr. Guppy's a very appropriate sequel to the one that had been read before it. It was a clear statement of facts of the condition of emancipated negroes, devoid of speculation. They could see from that statement that there was a great deal to be done in comparing the different degrees of intelligence in man without descending to a comparison with brutes. In endeavouring to establish a comparison in the latter case there was this difficulty, that they had no facts to depend on. It could be seen and ascertained how far the negro is capable of understanding the higher grades of human intelligence, but with regard to inferior animals the difference was not one of degree but of kind.

Mr. PIKE remarked that it had been just said by Mr. Reddie that he approved of the paper because it contained a lucid statement of facts and not speculation; but at the same time he had asserted that the difference between man and brutes is one of kind and not of degree, which assertion was a speculation and not a fact.

Mr. WALLACE said the author of the paper dwelt much on a fact which no one had denied—that the negro is very inferior in intellectual capacity to the European. The only question to be determined was, how far that inferiority extends. The African negro was often spoken of as being the lowest race of mankind; but he believed that the negro is not the lowest grade. The Australians, the North and South American Indians, and even the Malays, he considered to be inferior to the negro. The negro, he believed, possesses a considerable amount of intelligence and energy that might enable him to rise much higher than he has done yet. It was not fair to compare a negro emancipated from a state of slavery with Hindoos and Chinese who belong to the oldest civilised nations on the earth. It was true, indeed, that the negro would not work and exert himself, except under the pressure of necessity; but that remark was applicable to mankind in general, for everyone required a stimulus to exertion. They had never seen the negro in that state of stimulus fitted to develop his moral and intellectual faculties and to enable him to appreciate the benefits of civilisation. When the negroes in our West Indian possessions were emancipated they ought to have been placed in circumstances that would have given them a stimulus to labour. There was no necessity to have given them the land on which they were located. If it had been an established rule that the negroes were to pay rent for the land they occupied, that would have obliged them to

labour, and we should have had a different state of things from that described by Mr. Guppy. The necessity to provide money for the payment of rent and to enable them to live would have given them a stimulus to work. The necessity of exertion to obtain a livelihood was even among ourselves an excellent means of improvement. We had never seen the negro under favourable circumstances. We had always seen him either as a slave or perfectly free without any stimulus to exertion. Allowance should be made for the contrast between his present condition of perfect freedom and his former state of slavery. We had not yet seen the negro under the circumstances that would show him to the greatest advantage.

Mr. S. E. BOUVERIE PUSKY observed that the emancipated negroes of our West Indian colonies were placed under very unfavourable circumstances. When in a state of slavery they were treated by the planters with great severity and in a very different manner from the slaves in the Confederate States of America. The planters were always in debt and they forced their slaves to work hard and behaved to them with barbarity. The planters had no ideas of political economy, and when the slaves were emancipated they thought the negroes were bound to work for a fixed price. But the negroes, on being released from such harsh bondage, would not be compelled to work. They migrated, and, in some instances, they squatted, and indulged in what to them was the luxury of idleness. He agreed with Mr. Wallace in thinking that sufficient allowance had not, under such circumstances, been made for the negro, and that we should not judge of his mental capacity by his present low degree of intellectual development.

Mr. PINKERTON thought that too much had been said both on the one side and the other about the capabilities of the negro for European civilisation, and that they should look on him in the state he was found and see what he is. It was useless to speak of the negro as he might have been under different circumstances. When compared with the Hindoos and Chinese there could be no doubt the negro was very different.

Mr. C. CARTER BLAKE noticed the allusion in the paper to the observations of Mr. Craft in the discussion of Dr. Hunt's paper on the negro at the last meeting of the British Association. Mr. Craft had there stated that the agricultural labourers in England were bent in figure as well as the negro; but the fact was suppressed by him that, in the case of the English labourer, the stooping figure was not concomitant with any anatomical peculiarity. The agricultural labourer exhibits the "European type" as characteristically as any of the white races of mankind. With respect to the negro, however, it was well known that the angle of the occipital foramen is different from that of the white races, and there are other distinctions in his anatomical characters. With regard to the assertions sometimes made, that the civilisation of the negro is capable of altering his cranium from the true character of the race, what were the facts? One of the most degraded skulls of the negro type which is yet known is that of a civilised negro who was a Wesleyan deacon in the West Indian islands. Mr. Wallace had stated that

no one denies, and that no one had ever denied, the inferior mental capacity of the negro, but he could have paid little attention to what had been again and again asserted by the advocates of the negro, or he would not have said so. If they turned to the popular literature, it would be found there stated not only that the negro is equal, but that he is superior to Europeans, and it had been recommended by some persons on the other side of the Atlantic, that the European races there should be improved by mixture with the negro.

The PRESIDENT considered it to be due to the author of the paper to say a few words in support of his opinions. In the first place, he would observe that the paper showed that the volumes published by the Anthropological Society had got out to Trinidad, one of the results of which had been the production of the interesting communication which they had just heard. Mr. Guppy had told them very properly that slavery does not degrade the negro, and when they hear so much about what slavery has done to degrade them it was well that they should now have the statement of a gentleman, founded on observation of the facts of the case, that the opposite effect was produced by slavery. The children of the slaves, who have had the means of improvement and of civilisation, were, on his evidence, worse than their parents when in a state of slavery, and were said to have greatly deteriorated. The cause of this was, that the children who are free want the stimulus of necessity to work. Mr. Wallace, indeed, said that all men require that stimulus, and would do nothing without it. He (the President) did not believe that to be the case with Europeans. There were, for example, upwards of 10,000 men in this metropolis who work daily without any necessity for so doing. At the last meeting of the British Association it had been asserted by Professor Wilson that there were in the English workhouses many men whose mental capacities were not superior to those of negroes, and that if the latter had the opportunity, they would become equal to the white man. In the instance of Hayti, however, the contrary was seen; the free negroes were there either savages, or were quickly becoming so. The opinion expressed by the author of the paper that the mulattoes are not so robust as either the European or the negro, agreed with the opinions of other good authorities and with experience, for it is known that they die off fearfully. Mr. Wallace had said that the negro is not the lowest of the human races, and that there are several lower than he is. That assertion fully agreed with the statement in his (the President's) paper on the negro, in which he said there were six races lower. If they looked to the facts of the case, as recommended by Mr. Pinkerton, and examined the condition of the negro in every possible condition, they found the same result—that the highest state of civilisation and mental development which the negroes exhibited was when they were in a state of slavery under the treatment of a kind proprietor. They were treated, as had been observed, very differently in some parts of America from the cruel manner in which they were formerly treated in the West Indies. The treatment most of the negroes received in the Confederate States was well adapted to improve them, and it had produced

that effect. At present they were dying off very quickly in America. He thanked Mr. Guppy for having contributed so valuable a paper; and he hoped that other gentlemen would send their opinions on the subject. He had been accused of being prejudiced, and of having interested motives in his representation of the incapacity of the negro for European civilisation. He begged to assure the meeting, however, that he had no prejudice on the question, but he thought it was the duty of anthropologists to oppose the opinion attempted to be established of the equality of the negro and the white man; and, as to the alleged interested motives, it was well known that the men who made such charges were generally those who were themselves most influenced by such motives.

Mr. PUSEY rose to explain that he considered himself opposed to the opinions expressed in the paper. The freed negro did not work because he was not adequately and steadily paid for his labour. With regard to the state of the negroes in Hayti, there were peculiar circumstances in that case, which prevented it from being fairly taken as an illustration.

The PRESIDENT then briefly noticed that the translation of Broca's work on Human Hybridity was now ready; and he proposed a vote of thanks to Mr. Carter Blake for the careful and prompt manner in which the work had been edited. This proposal was seconded by Mr. REDDIE, and carried unanimously.

The meeting then adjourned to the 5th of April.

APRIL 5TH, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

THE minutes of the proceedings of the last meeting were read and confirmed.

The thanks of the Society were given to the following gentlemen for donations to the library:—Professor Rudolph Wagner; M. Georges Pouchet; J. Frederick Collingwood, Esq.; T. Bendyshe, Esq.; the Royal Society of London; and the Cotteswold Club.

The following new members were announced as having been elected since the last meeting.

John Brinton, Esq.; Handel Cossham, Esq., F.G.S.; E. Bickerton Evans, Esq.; Edward C. Healey, Esq.; J. Byerley, Esq.; G. S. Gibson, Esq.; Lieutenant-Colonel H. Clerk, R.A.; W. Cory, Esq.; David Gray, Esq.; John S. Burke, Esq.; Edmund Farmer, Esq.; Antonio Brady, Esq., F.G.S.

The following papers were then read.

On the Universality of Belief in God, and in a Future State.

By the REV. F. W. FARRAR, M.A.

“Es ist ein seltsamer Irrthum, anzunehmen, dass alle Völker an das Dasein eines Gottes glauben; ich habe viele Wilde gesehen, die davon keinen Begriff hatten.”

DE LAUTOUR.

WHETHER or not all nations believed in a God, was a question debated even by the ancients. On the one hand, Artemidorus* and Plutarch† positively assert that there was no race without this belief; on the other hand, the Phlegyes, Nasamones, Callaici, Akrothoi,‡ and others, are expressly charged with such ignorance, and Cicero§ pointedly affirms his belief in the existence of such people.

In modern times it has generally been assumed that there is no doubt about the matter, and such a consensus of the whole human race has even been most needlessly inserted among the certain evidences of religion. But what are the facts? If we may believe the testimony of travellers,—*who are generally prejudiced in the opposite direction*, and who frequently implant their own belief, which is found there by subsequent voyagers—there are not only isolated tribes, but whole nations who are so degraded as to live with no knowledge of their Creator.

For instance—1. Of the *Australians*, Mr. Schmidt says, “*They have no idea of a Divine Being*,” and Mr. Parkes, “*That they have no words for justice or for sin*;” and Dr. Laing, “*They have no idea of a superior Divinity, no object of worship, no idols, nor temples, no sacrifices*, nothing whatever in the shape of religion to distinguish them from the beasts.” Similarly Perty,|| in describing the aborigines of Solomon’s archipelago, says, “*that in many of the islands there is no trace of any religion*.” 2. If we turn to *Africa*, the missionary, J. Leighton, tells us of the *Mpongwes*, that he found among them neither religion nor idolatry; and another missionary, the Rev. G. Brown, tells us of the *Kaffirs*, “*That they have not in their language any word to use as the name, or to denote the being, of a God—of any God*.” According to one account, the nearest approach to it appears to be the word *Tizo*, which means “*wounded knee*,” and was the name of a celebrated medicine-man a few generations back! The natives of Cape Mount, when questioned by Smith about their religion, said, they obeyed their chiefs, and troubled themselves about nothing higher. A Bosjesman, when asked the difference between good and wicked, said, “*It was good to steal another person’s wife, and wicked when one’s own wife was stolen*.” Respecting Fetichism in general, which is the prevalent religion (?)

* Οὐδὲν ἔθνος ἀνορέων ἔθεον. Artemid., i, 9.

† Ἀνέρου δὲ πόλεως καὶ ἀθίων . . . οὐδεὶς ἐστὶν οὐδ’ ἐστὶ γερωνὸς θεότης. Plut. Adv. Colot. Epicureum, p. 1124.

‡ See Fabricius, Bibl. Antiq., p. 229

§ “*Equidem arbitror multas esse gentes sic immanitate efferas, ut apud eas nulla suspicio Deorum sit.*” Cic. De Nat. Deor., i, 23.

|| Grundzüge d. Ethn., § 282.

of Africa, Captain Burton* observes, that "it admits *neither God, nor angel, nor devil*; it ignores a resurrection, a *soul or a spirit*, a heaven or a hell." Of the Kaffirs the missionary Scultheiss† also says, that "they have no religion, never pray, know nothing of a higher Being, and believe only in the existing life." 3. Of the *Malagache*, Rochon‡ says, "The Malagache, like the savage, is *destitute alike of virtue and vice*; he is susceptible of no kind of foresight; and he does not conceive that there are men on the earth who give themselves uneasiness respecting futurity." 4. Of the *Esquimaux*, Whitebourne,§—whose testimony is valuable because he wrote in 1612, and before they could have learnt of God from more frequent intercourse with Europeans—says, "*They had no knowledge of a God, and lived under no form of civil government.*" And even Sir J. Ross¶ observes, "That they have a moral law of some extent written in the heart I could not doubt, as numerous traits of their conduct show; but beyond this *I could satisfy myself of nothing.*" 5. Of the *Mincopies* or *Andamaners*,** Dr. Mouat says, "They have no conception of a Supreme Being,—no conception of a Cause, and are not even polytheists. One of them who was taken captive said that his countrymen 'had no kind of worship, not even the most gross, being entirely ignorant of the being and nature of a God.'" 6. Finally, of the *Veddahs* of Ceylon, Sir J. Emerson Tennent‡‡ does not hesitate to say, "They have no religion of any kind,—*no knowledge of a God or of a future state*; no temples, idols, altars, prayers, or charms." Mr. Bailey, long a resident among them, confirms this judgment, "They have no knowledge of a Supreme Being! 'Is he on a rock? on a white ant-hill? on a tree? I never saw a God,' was the only reply I received to repeated questions. They have no idols, offer no sacrifices, and pour no libations."

It is probable that these testimonies might by further search be largely multiplied; but if not, they are alone amply sufficient to set the question at rest, and to prevent the repetition of that which is, on the best interpretation, very questionable. We need not, therefore, weaken them by cases like that of the Diggers, who, because they consider the world to have been made by a large capote, and the sun by a cunning rabbit, are supposed to believe in a superior Intelligence! A vague fear of the Unknown is found even among animals, and is widely different from the belief in a God. At the same time, everyone would rejoice if the testimonies here adduced could be impugned by trustworthy evidence.

It is not necessary to say anything about the supposed world-extensive belief in a future state. It is absurd to say that such a belief *can* be general among all nations, when it is now all but universally admitted that it was a belief at the best but *very darkly*

* Personal Advent. in South Africa, p. 12.

† Lake Regions of Central Africa; Schultheiss, in Perty, Grundzüge d. Ethn., § 274.

‡ Voyage to Madagascar, Pinkerton, xvi, 241.

§ See Pouchet, De la Plur., ch. v, pp. 90-115.

¶ Second Voyage, p. 548.

** Adventures among the Andamaners, pp. 14, 303.

‡‡ Ceylon, ii, 441.

revealed even to the ancient Jews* themselves before the captivity; and that when they did learn it, they continued to assign *total annihilation* to those who denied the resurrection and the judgment. The Scriptures themselves teach us that it was Christ, and not Moses, who "brought life and immortality to light."

The PRESIDENT said that Mr. Farrar had done great service to anthropology in bringing the subject of the asserted universality of belief in the existence of a God and a future life before the Society. He had stated many facts which deserved to be more noticed than they have been; for the universal belief in the existence of a supreme Creator had been generally assumed. This was so much the case that at a meeting of the Sydney Philosophical Society much surprise was excited when the question was raised whether it was true that the aborigines of Australia had no notions of a God. The question was examined into, and the assertion of Mr. Laing to that effect was pronounced to be perfectly correct. In Victoria, indeed, it was found that the natives entertained a notion of a good and a bad spirit, but Victoria was a small district, and the evidence on the subject obtained there afforded no real answer to the assertion of Mr. Laing and others, that there is no universality in the belief of a God. As to the assumed belief in a future life among all tribes of savages, such a notion was quite out of the question if they did not believe in a God. He should be glad to hear evidence on the subject from any gentleman present. The facts stated in the paper were very important, and he should be pleased if any facts could be brought forward on the other side of the question.

Mr. REDDIE said there could be no doubt it was an unfortunate proposition that had been advanced many years ago, that the existence of a God could be proved by the universality of such a belief. There were, doubtless, many degraded nations who had no proper idea of a Supreme Creator; but it was questionable whether all the assertions which travellers had made on this subject were correct; for a great deal of what they represented rested on a very slight foundation. There could be no doubt that, even in our own country, there was great ignorance of religion; and fifteen or twenty years ago a blue book was published, containing the report of the Commissioners on Education, in which it appears that they had found among our own people in the mining districts persons who were totally ignorant of a God. With respect to the assertions of travellers it might be observed, that many of them know so little of the language of the savage races they have visited, that even if they had a belief in a God they would often not know how to express it, or would not be well understood. It was a fact, even in our own country, that many men, women, and children, often gave very lamentable answers to the questions put to them; but these questions (as appears by the Blue Book referred to) were often not very skilfully framed, in language adapted to the common people; and it was very doubtful whether the questions put by travellers, who had but an imperfect knowledge of the imperfect languages of savage

* See Ps. lxxxviii, 10-12; Is. xxxviii, 9-20; Ecl. ix, 5, 6, 10; Job xiv, 10-21; Eccles. xvii, 27, 28, etc.

tribes, were calculated to gather the accurate meaning of the people they addressed. But it would be a false deduction to think that a race of people had always been devoid of the knowledge of a God, because some of them had since sunk to that degraded state. Though a great portion of the statements quoted by Mr. Farrar might be true, yet it was sufficiently apparent from the recent works of travellers—and he referred especially to that of Captain Speke—how little they often used their eyes or their intellects to discover trustworthy facts in their intercourse with the natives; and he ventured to think that much of what travellers had said might be questioned, as merely formed upon inadequate and superficial considerations.

Mr. LOUIS FRASER said that all the negroes of Africa whom he had seen believed in the existence of a good spirit and of a bad spirit. They did not attend much to the former, because they thought he would do them no harm; but they were in great dread of the latter, and endeavoured to propitiate him.

Mr. WALLACE said that when he was among the wild tribes of the Moluccas and of New Guinea, he endeavoured to ascertain what were their ideas respecting the Creator of the universe, but he could only get from them a confession of total ignorance of the subject. It was difficult to distinguish the real opinions of those savages from the opinions that they had heard. If they were told by any traveller that there was an invisible Creator of the universe, so far as they were capable of receiving such an idea they would receive it, and repeat it afterwards when questioned on the subject; but so far as he was able to ascertain, they had no such idea whatever. They had no desire for knowledge, but were contented to go on in their own ways. They have, indeed, some vague ideas of the existence of unknown powers; diseases, for instance, were supposed to be unnatural, and to be caused by some supernatural agency, but that was very different from the belief in a God. The intellectual capacities of those tribes were so feeble, that he doubted whether they could be made to appreciate or understand what was meant by a God. They were unable even to comprehend the simplest relations of numbers, such as the adding of four and five together, or even less quantities, without putting stones before them and showing them the amount visibly. In the same manner, their language contained no general terms. They had names for particular things, but for no classes of things. They had names for particular trees or plants, but they had no names to express the meaning of trees or plants in general.

The Rev. Mr. KERR expressed great satisfaction at having heard the able paper of Mr. Farrar, for he had often considered that it was a question which deserved careful thought. His own experience in several large parishes in England had taught him that, even in this country, there were many persons who had but little notion of a God. In Liverpool he had found several instances of persons who were occupied in certain kinds of employment who had very little idea of a Supreme Being. In the eastern parts of London also, he had met with several similar instances; and he had no doubt that a great many, even in this Christian country, had no idea of a God. It had been asserted

by Grotius in his work *Religionis Christianæ*, that the idea of a God was general throughout mankind, but his own observations among the heathen at home bore out the remarks of the travellers who had been quoted by the author of the paper.

Mr. T. BENDYSHE observed that two questions had been mixed together in the discussion, which were really quite distinct. It was one question whether there are individuals in any community who have no knowledge of a God; and quite another question whether there were races of men devoid of such knowledge. That there are individuals who are ignorant of the existence of a Supreme Being must be apparent to every one who investigated the subject. He considered it very doubtful whether the Australians, as a race, had any idea of a God. That some individuals among them might have was probable, but that would not negative the assertion of the author of the paper. It had been said by Mr. Reddie that the opinions formed by travellers might be owing to their ignorance of the language of the tribes whom they visited. But there were cases to which that objection would not apply. There was a well authenticated case of a man who was a captive among a savage tribe for thirteen years, who stated that they had no notion of a God, and that statement was made with a full knowledge of the language and of the sentiments of the tribe. It was stated, also, by Captain Speke, that when he asked the king of Uganda whether he believed in the existence of a Supreme Being, he laughed at the idea of such a thing. The prevalence of some superstitions was not sufficient to prove the belief of a God. There was a great distinction to be observed between Fetish practices, and other superstitions of the kind, and the belief in a Supreme Creator. To establish the position of the author of the paper, all that was wanted was the proof of one negative instance. Captain Ross was among the Esquimaux for several months, and the whole of that time he saw no indication of any religious worship. Even among the Chinese, there was no word to express the signification of a Supreme Being, the word God and heaven being synonymous,—so difficult was it for them to conceive the meaning of the word God. Those instances were, he thought, sufficient to prove Mr. Farrar's general proposition.

The Rev. F. W. FARRAR said his object in bringing the subject before the Society was to obtain testimony on one side or the other. He should have been delighted if the opinion he had stated, on the authority of various travellers, had been refuted by other travellers; and that was his main object in bringing the question forward. After all, however, the main assertion in his paper was little more than what was stated in the Bible—that there were people who knew not God. They had, indeed, heard it stated that evening by a London clergyman that even in England there are people living within the sound of church bells who do not know anything of God. That was important evidence, and after that they should not be surprised that in certain parts of the world there are savage tribes who have no belief in a God. All races, probably, have a *fear of the unknown*, but a similar feeling exists among animals, as may be proved by many well-authen-

ticated instances, some of which have been adduced by Prof. Carl Vogt. Of course, it was well known that *individuals* in all nations were unfortunately to be found who had no belief in a God. Even among the Greeks, there were some who avowed their disbelief in an invisible Creator of the universe. It was a verification of the maxim that extremes meet, to observe the strong intellect of cultivated men arrive at the same conclusion as the most degraded types of humanity.

The following paper was next read :

On Hybridity. By the REV. F. W. FARRAR, M.A.

WE hope in the following paper to adduce some evidence in favour of two propositions, viz. :

I. That it is erroneous to assume that the fertility of hybrids furnishes a decisive proof of the unity of species ; and

II. That it is as yet premature to assert that the union of all varieties of the human race produces an offspring continuously fertile.

I. Of course if we choose to define species in a conventional way, and consistently abide by our definition, we may apply the term to all varieties which are capable of producing between themselves a fertile offspring. But then it is a mere playing with words to assert that the intermixture of all human races is "eugenesic", and then to say that we have, in any valuable sense, proved the unity of the human species ; on the contrary, we have merely been reasoning in a vicious circle, and misusing philosophical terms. If, again, we could prove that all races of men can produce by intercourse a *continuously* fertile offspring, we should prove that fact,—and it is an interesting one,—but we should prove *nothing more*. We should still leave absolutely untouched the question of their origin from a single pair.

The definition of species, which makes it depend on the fecundity of cross-breeds, is very open to attack. Fruitful hybrids have been produced between animals whose common origin cannot for a moment be assumed. The repulsion supposed to exist between different races of animals is occasionally* overcome, though not so easily as in the case of men. Positive experiment has proved that the wolf† and hound, hound and fox, camel and dromedary, goat and sheep, goat and steinbock, horse and ass, are severally capable of producing fertile offspring. But does any one venture seriously to assert that these classes of animals must therefore have severally originated from single pairs ? Yet if not, it is absurd, on the assumption of similar grounds, to make such an assertion in the case of man. Besides, as Vogt justly remarks, what we call species is merely an abstraction from individuals ; and, similarly, fruitful intercourse, as a character of species, is merely an abstraction derived from the observation of a comparatively few individual cases.

The remarks of Agassiz‡ on this whole subject are so weighty and

* Jessen, Ueber die Lebensdauer. Bonn, 1855.

† See on the whole subject, Broca, Sur l'Hybridité ; C. Vogt, Köblerglaube und Wissenschaft, § 68 ; and Bulletins de la Soc. de l'Anthrop., Apl. 1860, where the whole subject is ably discussed by MM. Broca, Boudin, De Quatrefages, etc.

‡ Provinces of the Animal World, Types of Mankind, p. lxxv.

authoritative, that we must here quote a portion of them in spite of their length. Speaking of the horse and ass, the tame bull and wild buffalo, the three species of bears, etc., he says: "The ground on which these animals are considered distinct species is simply the fact, that, since they have been known to man, they have always preserved the same characteristics. *To make specific difference or identity depend upon genetic succession is begging the principle, and taking for granted the question under discussion.*... We know that the horse and ass, etc., may be crossed, we are therefore not justified in doubtful cases in considering the fertility of two animals as decisive of their specific identity; any definition of species, in which the question of generation is introduced, is therefore objectionable. The assumption that the fertility of cross-breeds is necessarily limited to one or two generations does not alter the case, since, in many instances, it is not proved beyond dispute. It is, however, *beyond all question*, that individuals of distinct species may in certain cases be productive with one another as well as with their own kind.... I am prepared to show that the differences existing between the races of men, are of the same kind as the differences observed between the different families, genera, and species of monkeys or other animals;... nay, the differences between distinct races are often greater than those distinguishing species of animals one from the other.... Unity is determined by a typical structure, and by the similarity of natural abilities and propensities; and, unless we deny the typical relations of the cat tribe, for instance, *we must admit that unity is not only compatible with diversity of origin, but that it is the universal law of nature.*"

II. It was asserted by Prichard, and has been reasserted, as a capital point in their argument, by all monogenists, that the union of any two human races is capable of producing an offspring *continuously* fertile. This proposition is, as we hope to show, at least *premature*.

In the first place, we ask with M. Pouchet,* "have all, or anything like all, the combinations been tried? the union, for instance, of the Esquimaux and the Negro, of the American and Australian, of the Tartar and Bosjesman?" Moreover, is it certain that of those which have been tried all *are* capable of producing a progeny capable of perpetuation? M. Broca, who has made hybridity his special study, expressly denies it. Is it, for instance, certain that the hybrid† between the European and the Australian woman is fertile in even the first instance? Does there exist—in spite of the opportunities which have occurred—a single hybrid between the European and the Andamaner?‡ or between the Kaffir and Hottentot? or between the diminutive Negroes of the Philippines and the Malay? or between the Veddahs and Cingalese? Count-Strzelecki asserted that Australian women, who had once lived with Europeans, became infertile for their own race. If this were certain, it would be a most important fact; but it has been keenly contested. On the one hand, Goodsir,

* De la plur. des Races Hum., p. 194.

† Such half-castes are *very rare*. Jacquinot, Voy. au Pôle Sud. Zoologie, ii, 363.

‡ Om. d'Halloy, Des Races Hum., p. 108.

Carmichael, and Maunsell have pronounced it *unquestionable*;* on the other hand, Mr. F. Heywood-Thompson† has denied it absolutely. This much, however, appears to be certain, viz., that such a mixture of races produces among several savage tribes a strong *tendency* to sterility, and this is a consideration which obviously has much weight in the argument.

It is true, that M. Om. d'Halloy‡ reckons the number of half-castes in the world as amounting to the enormous sum of 12,300,000. But this proves nothing, unless it can also be shewn that they are maintained without infusion of fresh blood, and solely by intermarriages among themselves. Now, after all that has been asserted, it is extremely doubtful whether there exists on the globe a *single hybrid race*. M. Pouchet, supported by a host of great authorities, maintains that there does not. In many cases it is *known* that the intermarriage of hybrids leads to rapid extinction. The Griquas on the Orange River—the favourite instance of Prichard and all monogenists—a tribe of half-breeds between Dutch and Kaffirs, are asserted by eye-witnesses to be constantly replenished by fresh blood, or else to revert rapidly to the African type. Nor is there any other single people§ which can be pointed out as a positive proof that a race of hybrids can maintain itself without constant fresh infusions. As long as this is the case, and as long as we find such writers as Dr. Knox and M. Broca denying the universal fertility of different human varieties, or the certain continuation of any really hybrid races, we may safely hold that the question is as yet very far from being so decided as monogenists have maintained.||

Nor are positive facts wanting to support the belief that a race formed by the mixture of two very different types is *incapable*¶ of maintaining itself. The Mamelukes could never propagate their race in Egypt. In the Isle of Flinders, where perished the last miserable remnants of the aboriginal Tasmanians, barely one or two children grew up from the intercourse of the convicts with the native women. M. de Rochas** says, that in New Caledonia, in spite of very numerous unions, he only met *two* half-castes. There are half-castes of Kanaka women (in the Sandwich Isles) with Europeans,†† Negroes,

* Bull. de la Soc. d'Anthr., Apr. 1860.

† Journ. of Ethn. Soc.

‡ Des Races Hum., pp. 109, 117.

§ Of the Cafusos, a cross between blacks and red-skins, we must know a great deal more, before we can accept them as a case in point. Prichard (Nat. Hist. of Man, i, 27) quotes an account of them from Martius and Spix, Travels in Brazil.

|| See on this subject, Dr. Knox, On Race; and Broca, Sur l'Hybridité, passim; Caldwell, On Unity, p. 35; Rev. des Deux Mondes, viii, 162; Col. Hamilton Smith, Nat. Hist. of the Human Species, p. 21; Pouchet, p. 78; Dr. Knox, On Acclimation; Nott and Gliddon, Types of Mankind, p. 465; Indigenous Races, p. 367; Squier, Notes on Central America, pp. 54-58; Davis and Thurman, Crania Britannica, p. 7.

¶ Some of these facts are attested by M. Pouchet, pp. 135-153. He quotes Types of Mankind, p. 373; Boudin, Geog. Méd., i, xxxix; Indigenous Races, p. 443; Squier, Nicaragua, ii, 153; Cabanis, Rapports du Physique et du Moral, i, 484; Courtet de l'Isle, Tabl. Ethnogr., p. 77, etc.

** Bulletins de la Soc. d'Anthrop., Apl. 1860, p. 402.

†† Ibid., July 1860, p. 609.

and Chinese, but two half-castes are *never fertile among themselves*. According to Dr. Nott, half-castes are short-lived, and, if they intermarry, are unprolific. In Java, according to Dr. Boudin—a very high authority—the half-breeds between Dutch and Malays cannot subsist beyond the third generation. The Zambos—sons of Indians and Negroes—are the most degraded and criminal of all classes; the sons of Spaniards and Indians are weak and poor in type. Mixture of types in *most* cases, if not in all, leads to “*abrutissement*” and degradation. Mulattoes, as is well known to practical physicians, have a special tendency to consumption and other diseases. From a multitude of such considerations M. Pouchet deduces two laws:—1. That no mixed race can exist *of itself*. 2. That when two races come in contact, either one absorbs the other, or they continue unchanged side by side, with a third inferior and less numerous set of half-castes.

Hybridity was one of the three *causæ degenerationis*, which, according to Blumenbach, caused the primeval white race to degenerate into dark varieties; the other two being *climate*, and *mode of life*. We may remark, in passing, that these must for Prichard, and those who follow him in regarding all races to have sprung from the black and stupid African, be considered on the other hand as *causæ perfectionis*! With climate and mode of life as supposed causes of variety we are not here concerned; but all that has been advanced about *hybridity* in this brief paper will amply tend to prove that the crossing of races, *so far from producing differences, only attenuates them*, by creating a mean between two extremes. “It does not produce varieties,* but is only the consequence of them; and even in this limited function its action is insignificant.”

Professor Rudolph Wagner, in his Anthropological Lecture before the Naturalists at Göttingen, put forward what he stated to be “certain results” of ethnology in seven axioms, of which two were that “the differences between various nations are not greater than those between animals of the same species, *e. g.*, the dog and sheep”; and “that all races of mankind produce fertile hybrids.” We have seen how baseless both axioms are, and we may add that recent scientific inquiries have pointed out the groundlessness of the assumption that the dog, for instance, forms in all its varieties but one single species.

So that in this branch of the subject—which is one on which monogenists most firmly rely—the facts tend powerfully against them; even if we accept their arbitrary criterion of species, which we do not; and even if we admit, which we do not, that unity of species is incompatible with descent from different pairs. It seems to us, that their method of treating this subject has been to assume the unity of the human species as an axiom, and then to prove it by a definition!†

Professor CARL VOGT (who spoke in French) said that the question was one which demanded great consideration, and on which many theories had been propounded, though none of them had received general acceptance. They were met at the very first step, in consi-

‡ JENKIN, Ueber die Lebensdauer der Gewächse. Bonn, 1855.
 * Pouchet, De la Plur., p. 118. † Vogt, Köhlergl., § 1.

dering the subject, with the difficulty of defining what is meant by species. By some persons it was regarded as an assemblage of individuals who reproduce their exact similitudes; but the continuance of fruitful intercourse proved, on examination, to be a very defective definition of species. Some classes of animals, for example, reproduce with others that are apparently dissimilar; and some which appear to approach each other in kind are not fruitful. The distinction of species could not, indeed, be proved by unfruitfulness any more than similarity of species could be established by continued fertility. He instanced the great differences between different kinds of dogs, which all reproduce, though one kind is only to be distinguished from another by its distinctive external characters. The question of distinction of species by hybridity could not, therefore, be determined, because they were ignorant in what the distinction of species consists. The external characters of animals also undergo much change by change of climate, of which the altered character of the dog introduced into Paraguay formed an example. The question might, perhaps, be resolved into a question of the transmutation of species; and to a certain extent he agreed with Mr. Darwin in that theory. As it was impossible to determine in what difference of species consists, either from the external character of animals or from hybridity, it was evident the question became one of great difficulty. To add to its complexity, there might be internal and external influences which affected reproduction in one case and not in another, and that increased the difficulty of arriving at any safe conclusion as to species from the test of hybridity. The difference of climate, for example, had a powerful influence on productiveness, of which the great fertility of the French in Algeria was an instance. There were, in fact, a multitude of considerations which affect hybridity, and before they could arrive at any satisfactory conclusion respecting the effect of hybridity as a distinguishing test of species, it would be necessary to ascertain what were the influences that affect it, and how far those influences operate. The question of hybridity, he considered, did not prove anything as to the unity or diversity of the origin of the human race.

Mr. A. R. WALLACE thought the meeting were much indebted to M. Vogt for the eloquent and forcible manner in which he had pointed out the excessive difficulty and complexity of the subject, and the state of ignorance which generally prevails as to what constitutes species. All the facts stated in the paper would, however, go to prove that no two *nations* could produce fertile offspring, for it might be said that in all instances where fertility existed there had been an influx of new blood. Such problems could not be satisfactorily solved, because it was impossible to make the requisite experiments on men. It might be done with animals, but with men it was a different thing. The only method by which the problem could be solved would be, to introduce into some island women of one race and men of another, and leave them to themselves, taking care that no other races were admitted on the island. But as that could not be done, no evidence could be obtained that was not open to objection. One of the in-

stances alluded to in the paper, as affording evidence against the general fertility of human races, rested on but slight grounds. It was asserted that with the Australians there was great difficulty in producing offspring even at the first cross, and that instances of subsequent fertility are rare. But he had received a communication from a friend, who had recently come from Australia, which contradicted that opinion. He stated that he had known two instances of Australian women having had children by white men and afterwards by men of their own tribe. Numerous cases of the kind, he said, occurred in the bush, in one of which the woman had four children; but the illegitimate children were always destroyed by the chiefs of tribes, which accounted for their scarcity. His friend also mentioned that he had seen half-castes who had children of their own, and his evidence also contradicted the assertion of Count Strzelecki, that Australian women who had lived with Europeans became infertile for their own race. There was the well known case of the Pitcairn islanders, in which the males of one race and females of another race were shipwrecked on the island, and lived together for a long time without communication with other people, and it would be important to know the results.

Mr. T. BENDYSHE said that the Pitcairn islanders increased so fast that it was found necessary to remove some of them to Norfolk Island, as they increased so rapidly that they exceeded the means of subsistence. There had been no mixture of other races among them, nor any infusion of new blood. So far, therefore, the evidence of the Pitcairn islanders contradicted the assertion that the progeny of mixed breeds are infertile. With respect to what Mr. Wallace had communicated about the Australians, there was a paper to the same effect inserted in the last number of the proceedings of the Anthropological Society of Paris, which gave an account of the half-breeds of Australia, and represented them to be well developed; and that these half-castes are numerous, notwithstanding all the statements of M. Broca. As to the statement of Count Strzelecki, it was evidently a very baseless assertion. The fact of the matter was, that the half-caste Australian women were nearly all prostitutes, and therefore they had no children. The fact that the Mamelukes could not propagate their race in Egypt, only showed that the climate of Egypt did not agree with them; and their infertility in that country did not apply to the case of hybridity in general. As to the statements of Dr. Knox, it should be borne in mind that he had taken his instances from the mulattoes in the Slave States of America, where the climate was not favourable for the development of the half-castes. In certain latitudes they would propagate, and in others not.

Mr. JAMES REDDIE remarked on the complexity of the general question of hybridity, and on the want of some more accurate definition of what constitutes a species. The question of the fertility of hybrids, or whether all varieties of the human race now existing can produce a continuously fertile offspring, did not, however, affect the question of the original unity of the human race. He conceived that even Mr. Wallace's suggested experiment would not be satisfactory, even if it could be carried out; for the argument did not depend on

proving the continued fertility, say of the progeny of black women and white men, for it might still be a question, whether the result would be the same if they were to reverse the cross, and see whether we should equally have a progeny from black men and white women; which, according to M. Broca, is impossible.

The PRESIDENT observed that the question was so difficult that it was impossible, in the present state of knowledge, to come to a definite conclusion. The great advantage of the paper was, that it might elucidate further information; and he hoped it might be the means of bringing many more new facts to light. He believed that the evidence yet received on the subject was in favour of the propositions of M. Broca; there were, however, very few facts and data to rest upon. With respect to the Australians, it was stated by Mr. Stanbridge, that it was very difficult to rear the half-castes, and he related no tales about killing them. There was very little stability in their constitutions; they died off early, and the girls were always prostitutes. It was the same with mixed races in other parts of the world. In Virginia, the mulattoes suffered much more from the climate than the pure negroes; there was no doubt whatever about that fact. As to the question which had been raised of the existence of mixed races in France, he considered it showed such an utter confusion in the use of the words species and races, that nothing could be said about it. When talking of people so different as the Europeans and Australians, they might be properly called different species, without attaching to the term the signification that they had a different origin; but it was a complete confusion of terms to apply the word species to the different people of Europe. For his own part, he held most firmly the opinion that the difference in species among the races of men observable at the present day had nothing to do with the unity of the origin of man. The question of human hybridity was a very complicated one, and he did not hope to see it settled; but he felt sure that the meeting must agree with him that they were much indebted to the author of the paper for the light he had thrown on it, and it was satisfactory to see a clergyman of the Church of England contribute to the Society two such liberal and instructive papers as had been read that evening.

The PRESIDENT then stated that the paper which had been announced to be read by Mr. Blake must be postponed, on account of the absence of that gentleman from illness; and he called on Mr. Fraser to read a communication received from Africa relating to the capacity of the negroes for civilisation.

Mr. LOUIS FRASER then read a letter he had received from Mr. Anthony from the Bight of Benin, in which he expressed his full approval of the paper read before the Society by Dr. Hunt "On the Negro's Place in Nature;" and adduced a great number of facts in confirmation of the opinion that the negro is incapacitated by nature for European civilisation. He spoke,—partly from his own observation, and partly from hearsay evidence,—of the cannibalism of the negroes, of their brutality and mental incapacity, and of their posses-

sion of all the vices with none of the virtues of humanity. The writer expressed his sentiments against the negro very strongly.

Mr. JAMES REDDIE objected to the terms in which the negroes were spoken of in the letter. The most important and startling things said in it relate to cannibalism; but it is worthless, since the writer himself says "*all this is mere hearsay, of course!*" He thought they had had a great deal of trustworthy evidence collected about the negro, and he feared it might be supposed that they were getting up a case against him, if they appeared ready to circulate more loose statements and hearsay gossip on the subject. The letter, he considered, should be revised and corrected before it appeared in the proceedings of the Society, if it were printed at all. He was sorry to add that, valuable as some of the information it contained might be, even that was not fitted to appear in print in the precise terms in which it was written.

The PRESIDENT observed that it was no doubt very advisable to keep strictly to scientific matters in the papers contributed to the Society; nevertheless all authors must be allowed to express their opinions, and they were liable to have those opinions openly criticised in discussion. If the statements given in the letter were true, there could be no objection to their being stated; but if not true, they might be refuted. With respect to the assertion about the cannibalism of the negroes, all the evidence was not hearsay evidence, for there was the fact that the writer had seen one of the chiefs eating human flesh. That gentleman had been in Africa many years, and he wrote the results of his observations to his friend Mr. Fraser, who had been the naturalist of the Niger expedition. He (the President) could not consent to have contributions from foreign correspondents doctored, like wines, to suit the English taste and the English market. It was open to the Council to publish the letter or not as they thought proper; but he was decidedly of opinion that if published at all, they ought to publish every word as it reached them.

Dr. TURLE said he had understood that the papers read at the meetings of the Society were previously revised by the Council. He understood Mr. Reddie to mean that the paper was not intended by the writer to be read before the Society as it was written, and that it was merely a private gossiping letter to his friend. Papers of that kind ought to be considered by the Council before they were read.

Mr. REDDIE observed that his suggestion was to this effect: as the letter was evidently written off-hand, that the question should be considered by the Council, whether it was a paper that should be printed by the Society. He should be the last person to wish to alter what a writer deliberately wished to say. And, even now, if Mr. Fraser will accept the responsibility of the paper, and will revise it, then whatever *he* might wish to print, he (Mr. Reddie) would also say, *print*.

The meeting then adjourned to the 19th instant.

TUESDAY, APRIL 19TH, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

THE minutes of the last meeting were read and confirmed.

The number of Fellows elected since the last meeting was then read as follows:—

J. B. Brown, Esq.; Rev. W. H. Kemm; C. E. Mackintosh, Esq.; W. Jennings, Esq.; A. Robertson, Esq.; J. Mosheimer, Esq.; W. Gooch, Esq.; A. Hawkins, Esq.; W. Hardman, Esq.; J. Rae, Esq.; W. S. Jeffery, Esq.; E. F. Firby, Esq.; A. H. Hunt, Esq.; Major-General Le Grand Jacob; Rev. Dunbar J. Heath; A. Barton, Esq.; H. J. Adams, Esq.; Dadabhai Naoroji; E. J. Routh, Esq.; Prof. F. Hudson; Major W. E. Hay; K. R. H. Mackenzie, Esq.; J. Hillier, Esq.; H. Hudson, Esq.; H. F. Hall, Esq.; R. Haughton, Esq.; T. Harlin, Esq.; S. Messenger, Esq.; W. R. H. Kinlay, Esq.; W. Ewart, Esq.

THE PRESIDENT observed that the foregoing list of thirty Fellows elected since the last meeting was the largest number elected within any similar period since the formation of the Society, and he hoped it was an earnest of more to come.

The following papers were then read:—

On Skulls from Annabom, in the West African Seas. By CAPT. R. F. BURTON, Her Majesty's Consul at Fernando Po, Vice-President of the Anthropological Society of London, and C. CARTER BLAKE, F.G.S., Hon. Sec. A.S.L.

“Fernando Po, Oct. 23, 1863.

“Dear Sir,—I have the honour to send by this mail two calvaria—a faith offering to the Anthropological Society. They are from Annabom, the island in the West African Seas colonised by Portugal in 1471-1500. The whites afterwards mixed with the slaves of a shipwrecked English craft, hence the present Mulattoes. They are doubtless at times recruited by a few pure Africans, yet they preserve the “Métis” appearance, manner, and inclinations. They are Christians, and the dead are buried under the stamped earth of the largest church—a barn of plant and thatch. When the rude vaults are full, and room for another corpse is required, the oldest occupant's bones are rooted up, and thrown into the nearest patch of bush; hence the dilapidated appearance of the crania; yet they were the best that could be procured. I am trying hard to secure for you a Bube's head, but it is a difficult matter. With best wishes to the Society and to yourself, believe me,

“Dear sir, yours very truly,

“RICHARD F. BURTON.

“The Secretary of the Anthropological Society.”

The two skulls have been received, and are certainly very interesting.

No. 1. The larger one, which I take to have been a male, exhibits all the more striking negro characters in its physiognomy. The narrow forehead, dolichocephalic skull, square orbits, and especially the markedly prognathic maxilla, are as well developed as in any ordinary negro from the Gold Coast. The spread of the temporal muscle, and the prominence of the supraoccipital bone, likewise accord with the conventional definitions assigned to the negro skull. The friable condition of the bones has precluded my bisecting the skull vertically, so as to arrive at a precise estimation of the angle of the foramen magnum. The sutures are obliterated to a great extent; and sufficient of the nasal bone remains to show it was flattened. The teeth in place are solid, and in good condition; the right upper canine has been conical in form, and its posterior surface, as well as part of that of the left premolar, has been worn away by the abrasion of the tooth immediately behind it in the series. The peculiar character which differentiates this skull from those of the majority of negroes with which I am acquainted, is the great breadth of the palate, which is deeply excavated, and to which the oblique implantation of the incisors gives a very remarkable appearance.

No. 2. The smaller size and less development of the muscular processes, may lead us to infer that this specimen belonged to a female, but to an individual of greater age, as indicated by the condition of the sutures. All the characters observable in the large skull accord with those in this specimen, with the exception of the nasal bones, which are here more elevated.

From an examination of the above skulls, according to my interpretation, there is no character which would lead us to consider that they belonged to any other race than the negro, viewed under his most favourable conditions, so far as regards food and freedom from disease. I can detect nothing approaching the "European" type; nothing superior to that of many well-fed negroes which I have seen from Ashanti.

C. CARTER BLAKE.

The thanks of the meeting having been voted to the authors of the paper,

The PRESIDENT said that though the communication from Captain Burton was short, it was interesting; and the two skulls that accompanied it would form a valuable addition to the Society's museum. There could be no doubt they were very interesting specimens; and he hoped they should be favoured with more of the same kind, so as to be better enabled to appreciate their character.

Dr. THURNAM read a paper on "The Two Principal Forms of Crania amongst the Early Britons," which will appear in the *Memoirs* of the Society.

Several skulls, taken from the barrows which Dr. Thurnam had opened, were placed on the table to illustrate the different characters of the skulls mentioned in the paper; and there were also exhibited a number of photographs of the various skulls discovered, intended for illustrations of the forthcoming part of "Crania Britannica." Dr.

Thurnam further pointed out, in one of the photographs, an instance of deformity supposed to be produced by posthumous pressure.

The PRESIDENT observed that the paper was most interesting and exhaustive; and he had no doubt the meeting would be anxious to return their thanks to the author.

Mr. W. BOLLAERT said that he had seen several similar instances of cranial deformity in Peruvian skulls.

Mr. P. O'CALLAGHAN inquired whether any experiments had been made to ascertain the relative internal capacities of the two kinds of skulls described?

Dr. THURNAM replied that such experiments had been made in every instance, and the internal capacities were fully given in tables in the work before referred to. The material employed for the purpose was dried sand, which, he believed, was better than shot or other materials that have been sometimes used for such measurements. As a general result, he believed it would be found that the long (dolichocephalic) skulls were of larger capacity than the round (brachycephalic) ones.

Mr. CARTER BLAKE observed that the paper was, as the President had observed, so exhaustive of the subject that, in his present state of health, he should merely put a few questions to Dr. Thurnam, with the object of developing a few points, and would reserve all future observations on the general question of British craniology. Dr. Thurnam's remarks had been restricted to skulls within the so-called historic period, and to the remains found with them; but there were other ancient British remains, which were alleged, on grounds which he (Mr. Blake) in many cases did not recognise, to belong to a more ancient period. Great stress had been laid by Professor Daniel Wilson on a skull that had been found at Montrose, which he regarded as a type of the old brachycephalic skulls of the ancient Celts. A similar skull was discovered at Kellet in Lancashire, which had slight supra-ciliary ridges. It nevertheless belonged to the round type of skulls; but it differed strongly from the skulls described by Dr. Thurnam this evening. He alluded also to such skulls as that from Mewslade, which Professor Busk had described, which was flattened at the vertex, with the occipital region produced and the frontal region depressed. At Muskham in the Trent Valley, in a peat-bed, a skull had been found accompanied with the bones of *Bos longifrons*, and even with those of *Bos primigenius*; but all these skulls seemed to be of the same type. The author of the paper had called attention to cases in which different kinds of skulls were found in close proximity. There were several in the British Museum from Etruscan burial-places, which had been found together, wherein similar differences could be observed; and Dr. Pruner-Bey mentioned having observed like differences between associated skulls in the Abruzzi. In one of the skulls of the old Etrurian bone cave a post-coronal depression was observed, and in those of the river-beds also there was the same peculiarity. The ancient skulls found on the Cheviots were to a certain extent of the brachycephalic character; and Mr.

Tate, of Alnwick—founding his opinion not on cranial developments alone, but on that of archæological evidence—considered them to be those of the original Celts. He (Mr. Blake) should like to have Dr. Thurnam's opinion as to the relation of the old skulls in river-beds to those described that evening. He was glad to hear that Dr. Thurnam deprecated the theory of a connection between the ancient Basques and the occupants of the north-east of Europe. Such notions were from time to time put forth; and he (Mr. Blake) had recently been reading the small and superficial *Manual of Ethnology* of Mr. Brace, professing to treat on the subject of ethnology, in which much stress was laid on a supposed connection between the Basques and the Laplanders. He should also like to have the opinion of Dr. Thurnam respecting the Guanches of the Canary Islands. For his own part, after examination of the few Guanches skulls at his disposal (a number, of course, far inferior to those of Basques which M. Broca had examined), he saw no connection between the Guanches and the Basques, and they appeared to be *sui generis*. As to the cases of supposed posthumous distortion in Peruvian skulls, which had been noticed by Mr. Bollaert, he must say that he had never seen such a case, and very much doubted if such had any foundation in actual observation. The distortions of all the skulls he had seen from Peru, which he had described in a paper laid before the Ethnological Society, had been produced artificially during life; and the result of the distortion was, that the brain-case had been much minimised, all such skulls being of a very low rank, if we took such a table of the cranial capacities of different races of man as that cited by Vogt, on more or less accurate data.

Dr. THURNAM, in reply to the questions put to him by Mr. Blake, said that his impression was, that the bone-cave skulls and the river-bed skulls described by Professor Busk, Mr. Carter Blake, Professor Huxley, and other observers, were dolichocephalic, and they had both been pointed out as having post-coronal depressions. With respect to the period to which the skulls belonged, his opinion was that, unless archæological evidence could be added to that of cranial developments, the question of age must be left very much in the dark. With respect to the skulls found in the Cheviots, he had no doubt that they were of the ancient British period and Celtic. As to the Guanches, he must say that he felt at a loss respecting them. The preponderating character of those skulls was dolichocephalic, and it was reasonable to suppose a connection between the former inhabitants of the Canary Islands and the neighbouring African population.

The meeting was then adjourned to the 3rd of May.

TUESDAY, MAY 3rd, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

The minutes of the preceding meeting were read and confirmed.

The names of the following twenty-five Fellows elected since the previous meeting were read:—R. Johnson, Esq.; Dr. T. Williams; C. Jervise, Esq.; J. E. Killick, Esq.; W. H. Mitchell, Esq.; H.

Johnson, Esq.; Sir J. R. Martin; W. N. Wilson, Esq.; Colonel S. O'Connor; Professor V. Wittich; Professor Müller; G. Wollaston, Esq.; G. Harris, Esq.; J. M'Donell, Esq.; W. Kelly, Esq.; W. G. E. Hobbs, Esq.; J. R. Langley, Esq.; E. J. Morshead, Esq.; W. Chambers, Esq.; Rev. A. Jessopp; J. P. Jones, Esq.; E. Lawrence, Esq.; C. Richardson, Esq.; M. Ricardo, Esq.; and St. George J. Mivart, Esq.

Mr. A. HIGGINS, the honorary foreign secretary, read a letter from M. Broca, the Secretary-General of the Anthropological Society of Paris, expressing his gratification at the translation of his work on Hybridity by the Anthropological Society of London, and at the able manner in which it had been edited by Mr. C. Carter Blake. Mr. Higgins also read the following communications from foreign corresponding members of the Society :

“ Paris, April 7th, 1864.

“ MR. PRESIDENT,—I beg to express to the Society which you direct with so much zeal and talent, my warm appreciation of the great honour which it has done me in publishing an English translation of my *Researches on Hybridity in the Human Species*. I know better than anyone how imperfect this little work is, and how incomplete as yet are the materials relating to this important question. In collecting those materials and making them the subject of some articles in the *Journal de Physiologie*, my object was rather to incite to further research than to produce a didactic treatise; and your Council has shewn extreme indulgence towards me in selecting this modest attempt to present to the English reader under the distinguished patronage of the Anthropological Society of London.

“ But I specially desire to acknowledge the favour which your able Secretary, Mr. Carter Blake, has done me in consenting to devote to this translation his time, so precious for science, and his talents as a writer. Nothing could be more flattering to me than thus to see my name associated with his in a work which has, in passing under his accurate and elegant pen, acquired real literary merit.

“ The copies of the translation which you have placed at my disposal, I intend distributing among the principal libraries in Paris.

After acknowledging the receipt of the Society's recent publications :

“ The Society has commissioned me to thank you in its name for the receipt of these numerous and important publications, which give eloquent witness of the activity and prosperity of our sister society in London, and of the efficient manner in which you direct it. The reports of your meetings become fuller and more important every day; and when we compare all you have done during your first year of existence with the little we had accomplished at the end of our first year, far from experiencing a feeling of jealousy, we rejoice to see the destinies of your Society confided to valiant hands. The paternal relation existing between the two societies prevents emulation, but not rivalry, and we are as glad of your success as we could be of our

own; well assured besides, that, as you have constantly shewn, this feeling is reciprocal.

"Allow me, Mr. President, to embrace this opportunity of offering you the expression of my personal sentiments of respect and high consideration.

(Signed)

"P. BROCA, *Secretary-General.*"

Vienna Imperial Academy of Sciences.—Meeting, March 17th, 1864.

Communicated by COUNT MARSHALL VON BURGHOLZHAUSEN,
Corr. Mem. A.S.I.

"Dr. Aquinas Reid, general practitioner of Valparaiso, has recently transmitted to Dr. Scherzer, who presented them to the Novara Museum, a series of ethnographical objects. Among them is a complete and uncommonly well-preserved mummy from Atacama, whose head, flattened back by artificial pressure, is covered with a peruke-like cap of net-work, made from an animal's hair, into which are artificially fixed long black hairs, identical in their distinctive characters with those of the actual American race. With this mummy, human crania, pottery, tools, and textile work have been found. Dr. Reid transmitted also a box with a wool-like vegetable substance (the leaflets at the basis of the frond of several species of ferns), used in South America—as they are also in Asia and in the Indian Archipelago, for stopping hæmorrhagia. These substances contain a large proportion of tannine, to whose styptic property they probably owe a great deal of their curative virtue. Dr. Seligmann has visited during past summer, the collection of human crania of Central South Germany and Switzerland, with the special purpose to ascertain the relations extant between the longitudinal Peruvian crania (Aymara or Titicacan race) and the similarly conformed crania found in Austria, Germany, France, and Switzerland, and generally known as Avarian. After having examined every one of the six Titicacan crania preserved in the collections visited by him, besides more than 1,000 of other races, Dr. Seligmann stated that an abnormality is peculiar to this race not to be found either in the so-called Avarian crania, nor in those of any other human race or tribe. It is the existence of exostoses, thickly besetting the right or left, or both sides, the anterior or the posterior, or both portions of the meatus auditorius externus, so as to diminish, transform, and even nearly obliterate its lumen. These exostoses have an osseous hardness, a broad basis, and a size from a grain of hemp-seed to a pea. Of the six crania submitted to examination, only one wanted these exostoses, larger than are generally those caused by morbid affection of the organs of hearing.

"The flattened crania of the Atacama and the other North and South American tribes all show (an already known) peculiarity in the shape of the porus externus, it being frequently slit-like, and its direction oblique from above and before to below and behind; but not one of them offers any trace of the exostoses characteristic of the Titicacan race. Dr. Seligmann is preparing a complete monograph of these and of the so-called Avarian crania."

Extract of a Letter from H.E. the President of the Argentine Republic, Don Bartolomé Mitré, to Mr. Bollaert.

Buenos Ayres, February 24, 1864.

"It is quite true, as Major Rickard has informed you, that I am occupied on a work relative to the Indians of this portion of America. A commission has been employed for some time in this interesting matter. The moment the work is completed, I shall have great pleasure in sending you a copy. I am much obliged for your kind offers to forward me what I may require on the subject of anthropology, particularly as regards the new school you belong to. I have read with great pleasure the contents of No. 2 you sent me of your Anthropological Society of London, in which I found much curious and interesting information, particularly as regards South America."

Mr. W. W. BOREHAM, F.A.S.L., exhibited a human skull found, with about twenty others, in cutting the Great Eastern Railway between the third and fourth barrows at Bartlow Hills, Essex. In the short communication which accompanied the skulls, Mr. Boreham stated that the skeletons were found, as nearly as he could ascertain, at the foot of the third hill, about two or three feet from the surface, and the situation is such that doubt may be entertained whether the hill was not raised after the bodies had been buried, and partly on the place of their interment.

Thanks were given to Mr. Boreham for his communication.

A paper was then read by W. BOLLAERT, Esq.: "On the Palæography of the New World." [This paper will be inserted in the *Memoirs.*]

The PRESIDENT said he felt sure the meeting would be happy to return their thanks to Mr. Bollaert for his very elaborate and interesting paper, and he regretted that some portions of it had been necessarily omitted in the reading on account of their length. It was a paper that required to be carefully read and studied, and he thought it would be better to adjourn the discussion of it to a future evening, when they should be able to do it more justice.

Mr. REDDIE observed respecting that part of the paper in which the author regarded language not as a natural gift to man but that it was invented by him, that he could not understand how that could be possible. It was very difficult to arrive at any proof on the subject, but experience affords no instance of the pure invention of even a word of any kind that was not borrowed directly or indirectly, or made up from some existing word. We adopt words and modify them, but we know nothing of the pure invention of a word, and it was difficult to know how a word could originate without some antecedent. He should like Mr. Bollaert to explain logically what he meant.

Mr. BOLLAERT said he had arrived at that opinion in common with most philologists, who believed that the different races of men had invented the languages they spoke. Those who had lived among Indians must have known that they had a very scanty power of language, and that they acquired such words as they have principally from the imitation of natural sounds. Thus the sound of falling

water they imitated, and they gave water that name. That he believed to be the beginning of the formation of all languages. The time when language was originally formed in that manner was a very different question. Another example he adduced was the word used by the Basques to signify the firing of a cannon, "s-tomba," which represented the first noise of the ignition of the priming and then the sound of the explosion. If there should be any further discussion of the subject he should be happy to go into it more fully.

Mr. BOUVERIE PUSEY inquired how far Mr. Bollaert considered the Creeks and Cherokee Indians were naturally adapted to receive European civilisation.

Mr. BOLLAERT replied that those tribes were not pure Indians.

The following paper was then read :—

On the Precautions which ought to have been taken to ensure the Health of British Troops, had any been sent to Copenhagen. By T. BENDYSHE, M.A.

SOME time ago there appeared a possibility that a considerable number of British troops might suddenly have been embarked for Copenhagen. On the propriety of such a step, a member of this Society can have, as such, no opinion whatever. Or, rather, he can only regret that there should be the slightest chance of British life being, under any circumstances, sacrificed in a foreign quarrel. It is not, however, the sword of the enemy which has been generally most fatal to the military expeditions which nations have carried on at a distance from their native land. The differences of latitude, of climate, and of endemic disorders, have too often been utterly neglected by those who order these expeditions; and it is for these reasons that the *Anthropological Society* may fairly discuss the abstract question, of how any large body of Englishmen, placed under strict control in a foreign country, may return least diminished in numbers and strength to their own. "The only memorable disasters imputable to sickness which occurred in the last great war, were those which occurred in the expeditions to San Domingo and Walcheren. And though these were chiefly imputable to soil and climate, circumstances beyond human control, it is to be hoped that they will serve in all time to come, to enforce the necessity of statesmen rendering themselves acquainted with them in calculating the risks of war."* "We may readily admit that the French expedition to San Domingo at the beginning of this century, the descent of the English at Walcheren in 1809, in the height of the epidemical season, and the Russian campaign in the winter of 1812, might have turned out quite differently from what history shows them to have done, if proper attention had been given to the medical geography of the yellow fever, the marsh fevers, and the effects of congelation."† It is lamentable to think that all the experience which

* Blane (Sir Gilbert), *Select Dissertations on several subjects of Medical Science*, London, 1822, p. 108.

† Boudin (J. Ch. M.), *Traité de Géographie Médicale*, Paris, 1857, tom. intro., p. xxxvi-vii.

might have been made so useful from a consideration of the circumstances attending these events, of which such ample records exist, should have been entirely neglected when the unfortunate expedition to the Niger, in 1841, was planned. In three weeks, on that occasion, 130 serious fevers and 40 deaths took place among 145 white men, whilst of 158 negroes, from America, in the same time, no single death occurred, and only 11 persons were slightly ill.

The first points to consider, in view of transporting large bodies of men, are the soil and climate to which they are to be sent, the time of year, and the local diseases which are endemic to the country. It should be ascertained whether foreigners are usually more or less subject to those diseases than the natives. The kind of men who are most likely to endure, or even to thrive, under the new climate, should be thought of; as whether tall or short, recruits or veterans, and, in our own case, whether English, Scotch, or Irish. No disorder, whose appearance might reasonably be expected, should find the army unprepared for it. The probabilities of active movement, generally conducive to the health of troops, or of continued inaction should be considered; and the experience which probably a few weeks even would give should be rigidly followed in determining the kind of recruits it might be necessary to despatch.

As the warm season advances, we will first give some account of the fatal expedition to Walcheren, undertaken, as I have already said, in full epidemical season.

The expedition to Zealand, which is in almost the same latitude as London, sailed from the Downs on the 28th of July, 1809, and made good their landing on Walcheren and North and South Beveland on the 31st of July and the 1st of August. The only military operation of consequence was the siege of Flushing, which was invested on the 1st of August, and capitulated on the 15th of the same month. In the beginning of September, the islands of North and South Beveland were evacuated, and that part of the army which occupied them returned to England, about 18,000 being left to garrison Walcheren. More than one-half of these died, or were sent to England on account of sickness in the course of the three following months; and the island was finally evacuated on the 23rd of December of that year.

Sir G. Blane, from whose Report my account of the expedition is given, and who arrived at Walcheren on the 30th of September, exactly two months after the landing, says that there were then two-thirds of the whole numeral strength of the army incapable of duty; and that it did not appear that their illness was connected with the nature of their duty, or owing to privations or neglect of any kind, for those were equally sickly who had enjoyed the utmost ease and comfort in cantonments with those who had been engaged in the siege of Flushing. This is especially worthy of observation. Statesmen and officers are too apt to think that if what are called the creature comforts of the soldier are sufficiently provided for, their duties as to his health are at an end.

Typhus also, and dysentery, had spared the troops to a remarkable degree; and "it admits of no doubt that the unfortunate state of the

army there, was solely imputable to the contamination of the air from a soil the most productive of deleterious exhalations of any perhaps in Europe, producing an endemic fever which has at all times been particularly severe upon strangers in the autumnal months."

In all cases those who slept in the upper stories were less liable to the disease, and had it in a milder form, than those on the ground floors. And the same thing was observed in San Domingo. Strangers also were very variously affected according to the districts from which they came. It was found that of the British troops, the natives of mountainous countries and dry soils were more frequently affected than the natives of flat and moist districts. It was also well ascertained that strangers, if they survive the first attack, become thereafter much less liable to the endemic intermittents.

Experience had also taught the French that troops should not be frequently changed, and that it was possible to acclimatise them to the air to a considerable extent, though, at the same time, it appears that in the case of the British sick, no perfect cure could be effected without their transportation to England.

The class of fever to which so many of our soldiers succumbed is called marsh-fever, and is one of the intermittents. And the great mortality must entirely be attributed to the fact that the army was sent there without any preparation, at the time of year when that disorder is most prevalent in Zealand. The French had observed that the oldest inhabitant did not remember a year in which this endemic had not disappeared before the end of October. And though the arrival of fresh troops about that time might somewhat disturb the observations, still Blane is of opinion that the number of seizures continued to diminish as the winter approached and advanced, conformably to what he had been told by the natives.

From the fact that the upper orders of society in Walcheren are always less affected with the endemic fever, and that the British officers suffered less than the privates in this campaign, Blane suggests that some measures might possibly have been taken with success to diminish the loss of life.

But this exemption is probably due partly to the fact that the officers would, of course, have the best and upper sleeping-rooms, an advantage which could not possibly be extended to the same proportion of common men, and partly to the influence of superior diet and cleanliness, the effect of which, however, must be considered not so much at any given period, but as diminishing a pre-disposition to low disorders and fortifying the constitution against them. It is not, therefore, likely that any sudden improvement in these respects would, under similar circumstances, have any effect in reducing the mortality.

The loss of British life on that occasion must be set down entirely to the disregard of all natural laws. And it was totally without excuse, because in the last century British troops had once before been sent to the same place, with exactly the same results; and, in fact, the statesmen of 1809 had precisely the same information that we have now.

In the spring of 1747 four battalions of English troops were sent to Zealand. Some went to South Beveland and some to Walcheren. They fell so ill that when the disorder was at its highest some regiments had only 100 men fit for duty; that is, less than the seventh part of a battalion. The *Royal*, in particular, had only four men who had never been ill.

The epidemical fevers in Zealand began that year much earlier than usual, in consequence of the great heats, and were much more severe than usual. The officers did not suffer so much as the others; and being better attended recovered sooner. The squadron which was anchored the whole time in the canal between South Beveland and the Isle of Walcheren, escaped entirely.

These particulars are taken from the well known work of Pringle, who goes on to say, "The epidemic of the hot season and the great endemic of this and other marshy countries, is a fever of an intermitting nature, commonly of a tertian shape, but of a bad kind. In Zealand, where the air is worst, it is called the gall-sickness. From the nature of their own climate, British soldiers are particularly liable to bilious fevers and fluxes in the wetter parts of the Netherlands. The commencement of these epidemics may be dated from some time in July to the beginning of August; their sensible decline about the first falling of the leaf, and end when the frosts begin."

The account of Sir John might stand for the year 1809; yet, in the face of such certain knowledge of what must happen, that unfortunate expedition was deliberately sent forth, which brought severe sickness to 26,846 Englishmen, and caused the death of 2,000 in the space of three months.

The campaign of Russia in 1812, though fatal to a much larger number of human beings is not so interesting, nor gives scope to so much observation as the Walcheren expedition. It is easy for medical men to describe the various effects of hunger, fatigue, and cold. But to the general observer, and to the statesman, and perhaps even to the soldier, it is enough to know that severe exposure to the cold, must necessarily, if carried to an extreme, involve the loss of any army, however powerful. To those who are desirous of details on the subject, the memoir of Baron Larrey will be most interesting; but I do not propose now to extract more than a few particulars from it.

In the retreat from Moscow, the first to fall were the recruits and the tall men. It had already been observed, in 1754, that in the Alps the French had more sick than the Spaniards. In Russia, the Dutch, the Prussians, the Hanoverians, and the Russians suffered most from the cold. The French of the South, the Spaniards, the Portuguese and the Italians came off best. The same was observed of the Italians and Spaniards in the time of Philip II. and III.

"I remarked," says Larrey, "that those who were of what is called sanguine and warm temperaments, resisted much better the benumbing effects than those who are called lymphatic. The Russians, themselves, according to the account which many medical officers gave me at Wilna, lost, from that cause alone, more men in proportion than the French."

It was remarked also at Madrid, in 1826 and 1827, the Spaniards supported the cold much better than the Swiss.

It is not, however, in very cold countries alone that congelation has been injurious to troops. During a march of two days in Algeria, the French lost 208 men out of 2,800 from the immediate effects of cold, and 22 more died in hospital from its effects, making a total of between 9 and 10 per cent. Of the remainder, 250 only completely escaped; the others were cured after a treatment which lasted on an average 35 days for each.

The thermometer on this occasion never fell, even during the single night passed in tents on this march, below 2 degrees below zero. But the chief cause of death was snow.

On the morning of the 3rd January, 1846, the corps was to leave the defiles of Bou-Thaleb for Setif, a distance of two days' march. But on the previous night an immense fall of snow took place. The young soldiers and those who had been recently ill rose benumbed. All that could be done for them was to administer a few drops of sulphuric ether and a little wine to drink. Fifteen were at once unable to walk, and two died almost immediately of asphyxia.

At seven o'clock the march began, but few had been able to eat any breakfast. At every ten minutes the column halted. At the descent of one defile where the snow concealed great holes, all the provisions were abandoned, and a great part of the tents and baggage. Corpses lay on both sides of the route. It was useless to lift up any soldier who once fell; and it was easy to observe the signs of coming death in many as they continued to march on.

About nine o'clock at night, the narrator, who was left alone with two others, found forty men with some of the baggage on the bank of a ravine. It was impossible to raise a tent, so frozen was the canvass. Such defence as could be made against the cold by piling up arms and knapsacks was done.

At dawn they recommenced the march. The sun was bright, but the snow was thick underfoot. In about two hours they came upon an ambulance tent where 40 men had passed the night. Of these 6 had died, 12 were placed upon carts, and the others refused to move. That night they arrived safe at Setif.

The first night, that is, before starting, the cold affected all nearly alike; but though on the march the little groups into which the men were dispersed underwent different degrees of cold, according to the position of their encampment. It was proved that the congelation and its effects depended principally upon the temperament, clothing, and circumstances in which individuals were placed.

Those who had been recently affected with agues, diarrhœa, or dysentery, were the first to succumb. But the officers, who were none of them left entirely without food or spirits, lost not a single man. Those who were unable, during the bivouacs, to prepare any fire at all, suffered much less eventually than the others; and that snow was the chief cause of destruction, and not any very severe cold, is proved by the fact, that out of 355 cases of congelation, 325 were in the feet.

It seems to me, however, that an equally efficient cause was the want of food; for it appears that during the forty-eight hours that elapsed from the evening of the 2nd to the arrival at Setif at night on the 4th, many of the privates tasted no food at all; and it may be doubted whether, if the march had been extended over three days, and time given for the preparation of food, at least before starting in the first instance, so great a mortality would have occurred.

I have not been able to collect much information on the diseases and climate of Denmark. Statistics respecting the Danish army have not been compiled in the way that has been done in many other European countries. And I regret to say that the works of Schleisner, of Hübertz, and of Panum, which would give us full accounts of the medical geography of the Danish kingdom, are not yet thought worthy of a place in the National Library. I have, therefore, been reduced to make the best use that I can of such hints as are scattered through the valuable work of M. Boudin. The maximum mortality in Denmark proper occurs during the month of April, and next to that in March and February, much the same as in England. The mean temperature of Copenhagen during the winter is $-0, 42$; whilst that of Edinburgh is $+3, 47$. The mean of the year is $+7, 6$. There does not appear, therefore to be any great reason for apprehending that any body of Englishmen would be likely to suffer much from the extremes of heat or cold on the Danish Islands. Intermittent fevers are so rare in Denmark, that they have only appeared twice in an epidemic form during a period of 30 years from 1826 to 1856. Since 1833, it has been observed that they cease as soon as ever the *grippe* appears, and return as soon as ever that disorder vanishes. The *grippe* is sometimes very fatal in Denmark, and it has been observed to proceed in a direction opposite to that of the winds. Our soldiers must, therefore, expect to be attacked either by the *grippe* or by intermittent fevers, and should the necessity unhappily occur, inquiries might be prudently made as to which at the time was the prevailing disorder. The *grippe* of the Farøe Islands, indeed, does not attack foreigners, but we must be careful in applying positively any conclusions from observations made on the diseases of that part of the kingdom to Denmark proper.

The British soldier perishes through diseases of the respiratory apparatus far more than from any other cause; and it is precisely this same cause to which the majority of deaths in Copenhagen are attributed. But it is far from being a proper conclusion that the mortality of any part of our army from this cause would necessarily be increased by an occupation of Copenhagen. For it is remarkable that a larger proportion of soldiers die of consumption and analogous diseases in England than anywhere else, and that the farther north the British soldier is sent, and the colder the climate, the deaths from those causes sensibly diminish.

It would be a most interesting subject for observation, what effect the four degrees of latitude and the three degrees of winter's cold by which London and Copenhagen differ would have upon a considerable number of Britons; and the result might obviously be of great importance in the treatment and advice given to consumptive patients.

Next to the United Kingdom, the greatest number of deaths from pulmonary disorders occur on the stations of Jamaica, the Antilles, the Bermudas, Malta, and Corfu; and it might be a question, whether, in case of necessity, the regiments at those places should not be sent to a more northern climate, rather than those from stations where such diseases have a less fatal effect.

The effects of congelation are not likely to be so great in what would probably be, under the worst circumstances, a peaceful sojourn in Copenhagen, as to make it worth endeavouring to send as few young recruits or men of tall stature as possible, with an eye to the experience derived from the Russian campaign.

But there is a class of diseases to which our soldiers are particularly subject, and which some writers do not hesitate to say are more frequent in the British army, and perhaps after all more pernicious than even consumption. During a period of seven years and a quarter, the English army in garrison in England exhibited 8,032 cases of venereal disorders in an effective of 44,611 men. This is a proportion of almost one to five, and the syphilitic disorders were much the most prevalent. This proportion, large as it is, seems to be somewhat less than what obtains amongst the ranks of the population from which the army is principally recruited. For, on the inspection of recruits for the militia, the subjects affected with venereal disorders were in the proportion of 25 per cent.

I believe that syphilis is most prevalent, and most fatal in its effects, amongst the youngest and strongest recruits who enlist. I need not point out here the immense loss in a financial point of view which this country must suffer every year, if this be the case, from a cause quite within proper control. It is gratifying to see, even in the highest quarters, a disposition to grapple with the evil in a sensible and effective manner. Still, the prejudices the authorities would have to contend with are by no means extinct. Nor, probably, would those prejudices present less obstacles among the soldiers themselves, than amongst classes who ought to know better.

Perhaps, no more efficient means could be devised of instilling the elements of sound principles on this point amongst all classes of the army, than a temporary residence in a capital where every precaution is taken that skill and humanity can suggest to diminish an evil, which bids fair to undermine the very defences of this country. I will, first of all, give some account of the laws by which prostitutes and those affected with venereal disorders are dealt with in Denmark, and then will go on more particularly to point out the regulations enforced in the Danish army in this matter.

Public houses of this kind, according to the ordinary meaning of the words, do not exist in Copenhagen. Prostitution is tolerated, but not licensed. The public women are under the control of the police; and whilst the great scandals of disorderly houses are avoided, prostitution is not elevated to the rank of a trade protected by the state.*

* The facts on this subject are taken from Parent Duchâtelet (A. T. B.), *De la Prostitution, etc.*, 3rd ed., tom. ii, pp. 744-762.

The minister of justice is, however, especially charged with the duty of preventing the propagation of syphilis; and under him the measures necessary are enforced by the police and the medical functionaries.

Those women whose names are on the public register are compelled, under certain penalties, to present themselves for inspection at the public hospital, once a week. They are cured gratuitously, and their names are never disclosed. Every endeavour is made to induce infected persons to come voluntarily to the hospitals; and in that case, they are treated with all the delicacy and consideration possible. They are also instructed in the best methods of preventing contagion, and these are either written or printed for them. The consequence is that all attempts to conceal these disorders are almost unknown at Copenhagen; so customary has it become for every woman, as soon as she finds herself infected, to seek the proper remedies.

It is not, however, with the women alone that the care of the authorities ceases. A woman is always invited to point out the person, whoever he may be, from whom she thinks she must have caught the disease. And such persons are in a private way, and according to their circumstances, requested by the police to take the necessary measures for recovering their health.

The ridiculous laws, which were made in more ignorant times, for the purpose of putting down prostitution altogether, and which have never been repealed, are now put in force, for the very different purpose of obviating its ill effects. Those who obstinately refuse or neglect to take the steps enjoined for being cured of disease are prosecuted, and sentenced to some short term of imprisonment.

Throughout Denmark, it is by law enjoined upon all the officials of the crown, and especially upon the clergy, to warn the people against the dangers of these diseases. The doctors, the landed proprietors, and even the bishops, are bound to report all cases of which they have accidentally cognisance. And the afflicted persons, of whatever rank they be, are invited, privately of course, to set about a cure.

In the army, no soldier is ever permitted to go on furlough without his health being first ascertained; or, in case of disease, to depart without a certificate of soundness from the doctor. Instructions are given them, on entering the service, upon the symptoms of the malady, and the best precautions to take. A soldier, on being taken ill, is compelled to indicate the person or place where he received the contagion; so as to prevent, if possible, its further propagation from that quarter.

The good effect of these wise and, at the same time, moderate precautions, may be imagined. In some districts of Denmark, a century ago, syphilitic disorders were epidemic, and in some sort endemic. But, with the exception of a few traces in some districts of Jutland, they may now be considered as almost extinct.

It seems impossible that such a system, if it is brought by accident under the immediate observation and experience of any number of Englishmen, should fail of exercising a salutary influence. The recruit who, instead of losing his health for life, within a few weeks of

enlistment, in London, or perhaps almost any garrison town, should find himself embarked for Copenhagen, would have time to acquire some sort of experience for his conduct; and could not fail, on his return to England, of perceiving the superior advantages of the Danish system. And if our negligence in these matters, induced by their natural consequences complaints from the Danish hospitals, such remonstrances could not but occasion some feelings of reflection in the minds of those to whom they would be addressed, as to whether any justification could be offered for giving the same licence to our soldiery in a country which is making such laudable efforts to extirpate an evil that we choose almost to ignore. I think, that should such a calamity take place as the occupation of Copenhagen, the good results that must necessarily follow from a comparison of the two systems of England and Denmark in this matter, would alone counter-balance the miseries, if it must be, of a warlike expedition.

Attention should also be directed by our doctors to the prevailing parasite in Denmark; whether the Englishman will be afflicted with the bothriocephalus instead of the *tænia*, and whether they will communicate the *tænia* to the Danes; and it may be expected that for some time after their return, the bothriocephalus would still continue to be found.

Finally, the stations to which the troops should be removed, on their return, ought to be a point for mature consideration. On the conclusion of the Peninsular war in 1815, the army which the Duke of Wellington had been so careful to preserve in good health and efficiency, was instantly broken up, and the different portions dispatched, without the slightest regard to any sanitary considerations, to all parts of the world; and many of the bravest regiments were soon decimated by fever in the West Indies.

Whatever disorders are found to be endemic in Denmark during the stay of the troops, will be likely to break out amongst them for some time after their return, at that season of the year when they are prevalent there. This is a fact observed both by Pringle and Blane, who says: "In the following year some of the officers and men who had escaped the disease, were taken ill in the autumnal months; and none, that I heard of, at any other season of the year." The stations, therefore, most favourable for the cure of such disorders should be kept in view.

Upon general principles, considering that pulmonary disorders are one of the greatest causes of mortality in the army, if it is found that a residence in Denmark has a beneficial influence in that respect, it would be very cruel at once to convey the troops to those places where this cause acts with more severity than any others: such as England generally, and especially London, and the southern coast. To Scotland there might not be so much objection.

The PRESIDENT, in proposing the thanks of the meeting to Mr. Bendyshe, observed, that it was a paper of great interest and of much importance, as it treated the general question in a practical manner. They had hardly heard sufficient in the paper of the propo-

sition of the author respecting the selection of men to be sent to different climates, nor of the kind of men that should be selected. He should be glad to hear from him if it was yet sufficiently known whether the Irish were better adapted than the English or Scotch to withstand the effects of change of climate. He did not think there were a sufficient number of facts yet collected on the subject from which any practical deductions could be drawn at the present time. As to the greater liability of tall men to be affected by climate, it was known that in other expeditions besides those mentioned by Mr. Bendyshe, they have suffered more than the short men. Another question to be considered was the temperament of the men; some men being naturally much better adapted to change of climate than others. The climate of this country and of Denmark was not very different, but there were persons much better suited to a northerly climate than to a hot one, and great attention should be paid to this subject by the military authorities. It was well known, for instance, that some men on going to India cannot stand the climate and that others can. As yet the data for satisfactory conclusions on the subject were not sufficient, and it was one of the questions that had to be worked out. As to the fact noticed by Mr. Bendyshe that change of climate and circumstances were not so fatal to the officers as to the common soldiers, he believed that such was found to be always the case, and it had been particularly observed in Ceylon. The circumstance that the officers are generally better lodged and better fed than the men might probably account for it. With respect to the remarks in the paper about syphilis, he thought they were much indebted to Mr. Bendyshe for having brought the facts before the Society. Those who were acquainted with the state of things in Chatham and had seen, as he had done, the effects of the disease on the soldiers, must be convinced of the importance of taking the subject into serious consideration. The enormous number of diseased women in the workhouse there was frightful. Government so far recognised the necessity of taking precautionary measures that they now gave money to a hospital for the treatment of the women; but as there were no regulations to prevent them from leaving the hospital or workhouse when they liked, the cases of syphilis could not be properly treated, and they went out before they were cured. The whole thing was in a state that merits to be seriously considered. It had been well said by Mr. Bendyshe that the disease was at present undermining the strength of the British nation, and it was an evil that loudly calls for redress. He thought the Society should make an effort to bring the subject before the government.

Mr. REDDIE observed that it appeared to him as if the meeting had resolved itself into a Social Science committee, for the consideration of which this subject was better adapted than for the Anthropological Society. He felt inclined to invite the author of the paper to read it before the Royal United Service Institution, for there it would be criticised by persons more fitted for the practical consideration of the suggestions now made, than a meeting of this Society. The military officers, he had no doubt, would there have stated the difficulty of carrying out such a project as recommended, arising from the im-

practicability of making the required selections. A regiment could not suddenly be pulled to pieces on the eve of war, for the selection of men of a particular size. It appeared, also, that the author only contemplated sending recruits to Denmark, whereas recruits were the worst possible class of soldiers to send out of the country. They were generally young men who were ignorant of the precautions necessary to be observed to preserve health, and least capable of enduring change of climate, especially when undergoing a new kind of life. The conclusions in the paper respecting the effects of climate on tall and on short men, were not in accordance with all the observations it records. The difference of climate between the northern counties and Denmark, however, is so slight that men generally would not care about it; but experience would probably show that, though the soldiers in Scotch regiments are mostly taller than those in English regiments, they would stand the climate of Denmark better than the English. The plan of selection proposed was altogether impracticable; and, if attempted, it would upset the whole organisation of the army. Nor would it be more practicable in the navy. The whole proposal, indeed, was utterly impracticable, though, at the same time, the subject was worth attention. That portion of the paper relating to the diseases of soldiers, he felt sure would meet with due consideration at the United Service Institution; and if the author would withdraw it from the records of the Anthropological Society and read it there, it would be well received and would be attended with more practical results; for it would be discussed by medical officers of both services. The medical authorities of the navy had given much attention to the health of the seaman; and what had been done, through the influence of the British Commander-in-Chief and the Medical Director-General of the Navy, in Malta, had proved more successful than what had been done in Denmark, judging from the description given in the paper. He did not think any country could have been so bad as Denmark was represented to be in that respect. The Danes, it seemed, were worse than we are; for it appeared to have been part of the duty of the clergy and bishops to point out persons who had this loathsome disease! This statement was so extraordinary, that nothing but the reliance he placed on Mr. Bendyshe as a careful collector of facts would have induced him to credit it: he should not have believed the assertion had it appeared in any ordinary book. He concluded by repeating that the subject, as treated by the author, was one that ought rather to be discussed by the Social Science Association, or at the Royal United Service Institution, where it would be heard by men more immediately interested in the matter and competent to consider it practically.

Mr. HIGGINS observed that so far from the subject being inappropriate to be discussed by members of this Society, it was one of the special matters considered by the Anthropological Society of Paris. ●

Dr. CAPLIN thought the reason why the disease was so prevalent in England, was owing to what the English called their liberty. The means noticed in the paper as being employed in Denmark to eradicate

the disease had been practised in Paris for a long time, where the girls had not the liberty to go about as they liked; but were under a system of inspection. He had heard it said: What an impure thing it was for the French Government to sanction such proceedings, and how tyrannical it was to exercise such restraint upon the girls; but liberty in this country went too far when public welfare is concerned. The woman might say she would not be examined, and the laws of this country would not permit it without her consent; whilst in France she is prevented from communicating the disease by this restriction, and thereby the ravages of this disease greatly diminished. At one time an attempt was made to put a stop to prostitution in France, but it was attended with worse consequences. The men seduced and abused the girls living in their families. It was far better for society at large that there should be women who made a trade of prostitution than that such a state of things should exist in families. He thought it was only right and proper to protect society by allowing women to practise prostitution, and to adopt proper measures in order to prevent the extension of the evil.

Mr. PIKE asked whether there were any statistics of the state of the Danish army in Copenhagen as to syphilis, for that would have an important bearing on the question of regulation and inspection. There were some statistical tables on the subject with respect to the Belgian and the French armies, which represented them to be in a better state than our own; but he had been told that worse cases of syphilis occur in Paris than elsewhere. It had been said that there is no soldier who has not had a flirtation with a servant-girl at some time or another, and it became a question whether the liberty that prevails among other women has not the effect of producing a class of "amateurs," who spread the disease as much as regular prostitutes.

Mr. BENDYSHE said, in reply to the observations that had been made, that his object in bringing forward the paper was rather to draw attention to the subject than to exhaust it. As to the objection of Mr. Reddie that it would pull regiments to pieces to put the plan of selection in practice, he observed that some regiments were formed altogether of tall men, and those might, therefore, be kept at home. The same objection would not apply to officers, who might be selected, and more care should be taken of the tall men than of the short. As to recruits, he thought the principal cause of their suffering more by change of climate was that they are generally young. Scotch soldiers do not stand the cold so well as those who come from a warmer climate; that was a fact which had been universally experienced. Thus the French soldiers withstood the climate of Russia better than the Russians themselves, and the Italians withstood it better than the French. As to the state of things among the soldiers in Copenhagen, the facts he had stated were derived from the report of the Minister of Police. With respect to Mr. Reddie's remark—that his representation of the prevalence of syphilis in Denmark made it appear worse than in England because the clergymen were employed to point out persons who were afflicted with the disease—all that he (Mr. Bendyshe) would reply was, that he should be glad to see the clergymen make them-

selves so useful in this country. He did not agree with Mr. Reddie in thinking that the paper was more fitted to have been read at the Royal United Service Institution. He thought it was better that the consideration of such questions should be diffused among other scientific bodies rather than be concentrated on one particular spot or confined to one class only. With reference to the observation of the President respecting the relative degrees of endurance of change of climate by English, Scotch, and Irish, he said he should have been glad to have entered into the question as regarded different effects of climate on different races, but the regiments were so mixed up with English, Irish, and Scotch, that there were no means of judging. Our army doctors were not accustomed to consider such things, for their experience was too limited to enable them to take general views. In the absence of more complete knowledge on the subject, no positive conclusions could be drawn, but some useful information might be gathered from such records as exist. Statistics were very much wanted in the Danish army. There could be no doubt of the fact alluded to by Mr. Pike that the amateur prostitutes propagated disease, and that over those there was no control; but it was the duty of the government to do what they could to prevent its extension. In Paris, in 1815, when it was occupied by foreign soldiers, the cases of syphilis increased very much; so much so, indeed, that the measures adopted to prevent it, were, for the time, abandoned; but when the foreigners departed, the usual precautions were resumed and the cases of disease decreased. Mr. Bendyshe said, in conclusion, that there was quite scope enough for another paper on the subject, if any one would take it up.

Mr. BOUVERIE-PUSEY observed that the Danish army consists of 60,000 men, who only serve for a few months.

The meeting then adjourned to the 17th inst.

TUESDAY, MAY 17th, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

The minutes of the preceding meeting were read and confirmed.

The names of the twenty-eight Fellows elected since the last meeting were read as under—J. G. Musgrave, Esq.; W. C. Lucy, Esq.; the Right Hon. Lord Stanley; T. Lucas, Esq.; Hon. Roden Noel; W. H. Levy, Esq.; C. P. Modelian, Esq.; J. Moore, Esq.; W. Newmarch, Esq.; Dr. Piesse; J. Radcliffe, Esq.; S. Solly, Esq.; J. A. Youl, Esq.; J. Middleton, Esq.; Rev. W. C. Lukis; the Earl of Southesk; J. Smyth, Esq.; F. W. Monk, Esq.; C. H. Luxmoore, Esq.; P. Spencer, Esq.; H. K. Spark, Esq.; J. S. Noldwitt, Esq.; Professor Leitner; T. Cannon, Esq.; Rev. Dr. Spooner; J. Mill, Esq.; C. Harcourt, Esq.; J. B. Perrin, Esq. Dr. Brice Smith was elected Local Secretary for Belfast.

The PRESIDENT said he had to make several important announce-

ments. At a late meeting of the Council a resolution had been agreed to for taking apartments in the upper part of the house in which they were assembled, from the Royal Society of Literature, in which to deposit the museum and library of the Anthropological Society, at the rent of £130 per annum. The Council had that afternoon agreed also to the following resolutions :

1. That a paid office be created in the Society, to be entitled the Curator, Librarian, and Assistant-Secretary.

2. That this office be held at an income of £100 per annum from Midsummer next, to be increased to £150 per annum on the Society attaining 500 paying Fellows, commencing the quarter next ensuing.

3. That the duties of this office shall consist in the general management of the Society's Museum and Library, editing the *Journal* of the Society, making indices to the Society's publications, and the conduct of the general affairs of the Society under the direction of the officers and Council.

4. That this officer be in attendance daily at the Society's rooms from 10 A.M. to 5 P.M., and that he be entitled to six weeks' vacation annually.

5. That applications for this office be sent to the Council before the 31st inst., addressed to the President.

6. That the foregoing resolutions be announced to the ordinary meeting of the Society.

The PRESIDENT then said that the Council had that day received the resignation of Mr. Carter Blake as honorary secretary of the Society, an office which he had discharged with remarkable ability. He was sure the meeting, as well as the Council, would very much regret the loss of his valuable services, and that they must all join in a high appreciation of the efforts he had made to promote the interests of the Society. The President, at the same time, hoped he might be permitted to say, that he believed the cause of Mr. Blake's resignation was, that he intended to become a candidate for the office of curator, librarian, and assistant secretary, which the Council had determined to establish, as announced in the resolutions which had just been read. The following resolution relating to the subject had been passed :

"That the Council receives with unfeigned regret, the announcement of Mr. C. Carter Blake's resignation of the office of Honorary Secretary of this Society; and in accepting his resignation, the Council desires to record its high appreciation of the value of Mr. C. Carter Blake's able, zealous, and successful efforts in promoting all the best interests of the Society."

Mr. A. HIGGINS directed attention to eight skulls and the cast of a skull which were on the table, and which had been presented to the Society by Professor Hyrtl. They were the skulls of natives of different parts of the Austrian empire.

The PRESIDENT stated, in reply to a question by one of the members, that the Society then consisted of 377 Fellows.

The following papers were then read :

On the Kirkhead Cave, near Ulverstone. By JOHN BOLTON, Esq.;
with an Introduction by GEORGE E. ROBERTS, F.A.S.L.

INTRODUCTION.

MR. BOLTON'S notes upon this bone-yielding cave, which I have arranged to form this communication, appear to be of some interest and value. Although we cannot claim this inhabited cavern as a dwelling-spot of any remote antiquity, yet the record of its contents cannot fail to be of anthropological as well as of archæological value.

The geological history of the cavern is simple. Caverns in limestone rocks belonging to the carboniferous series are numerous, wherever that formation is developed, whether in England or Ireland; in most cases they have communications with the surface above, either by a fissure or cleft in the strata, or in connection with the stratigraphy of the rock. It appears most probable that in the case of the Kirkhead cave the earth, which nearly filled it, dropped in from above, through an opening which stalactitic productions afterwards closed. Mr. Bolton has worked very industriously in the cave-earth, in company with Mr. Morris, whose interesting notes upon it are appended to his remarks, and Mr. J. O. Middleton, to whose care and kindness we have before been indebted.

G. E. R.

The cave which I am about to describe is situated on the western flank of Kirkhead Hill, on the west shore of Morecambe Bay, at a point about six miles from Ulverstone. The hill rises abruptly from the sea-shore, within a quarter of a mile of high-water mark, to the height of two hundred and sixty-four feet, and is composed of mountain limestone. The entrance to the cavern is eighty-five feet above high-water mark, the inclination of the hill from the cavern's mouth downwards being 65 degrees. I have been acquainted with it for about ten years; my first visit being in 1853. On that occasion I was accompanied by my friends Mr. J. O. Middleton, and Mr. Salmon, F.G.S. We found the height of the cave at its mouth to be three feet; consequently admittance could only be gained by crawling in on hands and knees. Beyond the mouth, the height of the roof varied from eighteen feet, at the part nearest the entrance, to twelve feet; the length of the cave we found to be forty feet, and its width twenty feet; the area consisting of one irregularly oviform chamber.

No communication between the roof and the surface of the rock above was apparent; though the thickness of the brushwood which clothed the hill rendered any investigations difficult. From the shape of the cave, it appeared to have been a natural reservoir for waters permeating through the rock, both from the surface and from springs; such communications having been extinct long before its occupancy by man and the smaller carnivorous mammalia.

The floor of the cavern, when thus first visited, was composed of a

brownish-red indurated clay. The two labourers who accompanied me made excavations in this to the depth of seven feet, over an area of about fifty square feet. The clay contained many *angular* fragments of mountain limestone, probably fallen from the roof of the cavern, and a few pebbles of Upper Ireleth slate, or of Coniston flags, varying in size from a walnut to an orange, and derived, probably, from rocks which are situated northward. These were all water-rolled. We also found in the clay a considerable number of mammalian and bird bones. At the depth of four feet, a portion of the right parietal bone of a human skull was thrown out. Continuing the excavation to a depth of seven feet, we obtained another human bone, which proved to be the second lumbar vertebra, and the radius and ulna of a young human subject. Below the cave-earth, we came to a floor of stalagmite.

On my return to Ulverstone after this exploration, I submitted the bones to Mr. Beardsley, F.G.S., F.A.S.L. I believe no visit to the cave has been paid since until very recently, when I have again visited it, and made further diggings into the cave-earth. Amongst the bones obtained at various depths on this occasion, are several jaws of badgers, and other bones of that animal, together with bones of fox, wild cat, goat, kid, pig, and boar; and, at a depth of three feet, a large and strong humerus of man. My friend Mr. Morris, who accompanied me, found three human teeth, and fragments of human bones, together with a tusk of wild boar, and a portion of large deer horn, about a foot in length, and ten inches in circumference at its extremity for articulation with the skull.

Scattered through the clay were many fragments of stick, burnt at one end, as if from the remains of fires; these, though interspersed through the whole mass, were more abundant towards the bottom of the deposit. In the stalagmite beneath the earth, which I then broke into, were several pieces of wood-charcoal.

The upper part of the cave earth yielded to Mr. Morris and myself some interesting evidences of the later human occupancy of the cave which Mr. Morris has described in a lecture lately delivered before the Ulverston Mechanics' Institute. There was also found a rude bone implement resembling a knife, a piece of carpal bone of goat (?) two inches long, having a round hole through it, as though it had been suspended as an amulet; together with several fragments of pottery rudely burnt, similar in composition to ancient British cinerary urns. The plans which I send you of the cavern are to scale.

The following extracts from Mr. Morris's lecture, add somewhat further to our knowledge.—

Upon digging into the floor it was found to be a heterogeneous compound of bones, earth, charcoal, angular fragments of limestone, with water-worn pebbles of blue slate. After disentombing a quantity of bones—amongst which were several human ones, consisting of the right and left parietal bones, femur, radius, ulna, and many others—the first object of interest discovered was a fragment of ancient pottery. It was of the rudest type, and bore no traces of the potter's wheel, nor of kiln drying. Progressing farther into the cave and

skimming as it were the surface, he found a Roman coin of the Emperor Domitian, covered only by a few inches of the soil. Here was a proof that for the last 1800 years the cavern had been undisturbed. A few inches deeper a portion of an axe was found; it had no doubt (on account of its weight) gravitated the few inches. A hammer and a knife blade were also found under similar circumstances. From the discovery of these articles, he inferred that they had conclusive evidence of the occupancy of the cave during the Roman period; if not by the Romans themselves, at least by some tribe of the wild Brigantes having intercourse with them. Starting, then, with the assumption that the physical aspects of the cave existed in the time of the Romans, under much the same conditions as they do at present, it follows, as a matter of course, that the deeper they went, if any traces of human occupancy were found, they would be of an older race. At the depth of about four feet he found a portion of an ox rib, formed into a knife, or similar instrument. Professor Busk, who had kindly determined all the bones submitted to him, has marked it as being 'cut or sawn with flint.' He next exhibited another portion of a small rib, from the same level as the preceding one; it bore unmistakable evidence of human manufacture, probably being an arrow-head. A singular bone relic accompanied it, of which Professor Busk said, 'This is a metatarsal bone of the pig, young, made as I think into a whistle. The reason I think so is because the whole of the interior is cleared out, which would not be the case were it merely to be hung on a string as an amulet. Though not made exactly in the same way, yet many similar bones converted into whistles have been found in the south of France belonging to the reindeer period.' Other fragments of bone with human handiwork upon them were found, but in so fragmentary a state that the sculptured design could hardly be made out. At the distance of a few feet from the entrance, there occurs a large block of stalagmite formed by the droppings from the roof; upon breaking into it there was found at a considerable depth, a layer of charcoal closely embedded, and a few bones, but so comminuted that only one portion of the under jaw of the pig could be determined. Under a thin bed of stalagmite, a little to the left side of this bank, was a boar's tusk, and a little to the right, under the same conditions was found a portion of the large red deer's horn. Near the same place there occurred the frontal bone of a human cranium, with a portion of the nasal promontory intact, and in close proximity the right and left parietals joined by the suture. About the centre of the cave, and at a depth of from six to seven feet, were found two unmistakable stone implements, they are of the rude, unground type, and similar to those found in the oldest bone caves."

The thanks of the meeting having been voted to the authors of the Paper,

Mr. G. E. ROBERTS said he had not been able to bring the flint implements found in the cave for the inspection of the meeting, neither had he been able to obtain part of the bones mentioned as having been submitted to Prof. Busk. All the other specimens of bones that had

been collected were on the table. The chief interest which these relics from the bone cave possessed, consisted in their showing many successive periods of occupation by human beings. It was conjectured that the Roman coin and the implements of iron had fallen through the roof of the cave at a subsequent period to its occupancy. They were found near the surface of the cave earth, and bones were discovered at successive depths till the stalagmite flooring was arrived at; and even in that formation some bones were found. It was probably a cavern of rapid accumulation and not of very great age; but it was important to state the results of the exploration of any cave containing the bones of man or animals that had occupied it in early periods of human history. Among the bones were a number referable to the badger, which were found at the very bottom of the deposit. They were stronger and longer than those of any typical badger of the present day. Mr. Roberts further stated, in reply to questions put to him, that he did not know at what depth in the cave-earth the pottery was found. The flint implements were of the ordinary type, of the rudest manufacture, rough and unpolished.

Mr. CARTER BLAKE said the human remains found in this cave differ in several important respects from those generally discovered in caverns in the north of England, and still less did they resemble those in the Heathery Burn case in Durham, where the human bones found indicated that they were those of men of a lower type. These differed from them, however, in the development of the frontal sinus, which in most of the skulls was entirely suppressed. These remains were apparently those of a distinct type of man to those from Heathery Burn; but judging from the large quantity of animal matter that was present in the bones, he considered that they could not be of very great antiquity.

Mr. JOHN MIDDLETON explained the discovery of the cave by two labouring men in the first instance, and the difficulty which was experienced in gaining access to it.

On Human Remains from Peterborough. By C. CARTER BLAKE, F.G.S., F.A.S.L., and GEORGE E. ROBERTS, F.A.S.L.

Mention is made in the Register of Peterborough of the importation of the plague from London in 1665-6. The burials of persons who died took place in a field near the town, still called the "Pest-house Close." In making a new road, a great number of these bodies have been dug up; they appear to have been interred without coffins, and with no regularity. The two skulls which we have obtained possess slight cranial variations from ordinary types, sufficient to render one, at least, of interest.

No. 1. This is a skull, long and dolichocephalic in form, without marked elevation of the parietal tubers. The curve of the frontal bone is equable in its direction, and is evenly continuous along the sagittal suture until about its middle, where it becomes depressed, in the mode which M. Pruner-Bey alleges to be common in Celtic skulls;

a flattened, and even concave space extending on either side of the posterior third of the sagittal suture, this depression apparently not being due to parietal occipital flattening. The supraoccipital bone has its upper contour, at the lambdoid suture, elevated high above this depression: the lambdoid at the same time not exhibiting either peculiar complexity, or any tendency towards wormian ossifications. Slight traces of suture extend below the upper half of the supraoccipital bone on the left side; beneath which the occiput shelves gently away to the lower semicircular ridge; and beneath is flattened in its course to the foramen magnum. The upper line of the squamosal forms an equable curve, its anterior bones being at its connection with the alisphenoid, raised to a higher level than the greatest part of the above-named bone, especially on the left side. The zygomæ are slender; but the mastoid processes and digastric fossæ are well marked. There is no supramastoid, nor are there paroccipital eminences. The palate is smooth and flat, the incisive alveoli not strikingly prognathic; the nasal bones are slightly flattened. The orbits are quadrate; the upper inner angle of each being well elevated. No teeth are in place.

The lower jaw indicates age; the coronoid process is rather high, extending far above the condyle. The attachments for the masseter are well marked; but the depression for its reception is not strikingly deep. The molar series is entirely absent on the left side; traces are shewn of one shattered tooth (*m* 1) on the right side: alveolar absorption has removed the rest of the series. All the other teeth are in place. Their erosion is not great, nor is there any trace of caries. According with the proportion of the skull, the lower jaw is slender in form.

No. 2. This skull, evidently that of a male, differs from No. 1 in the large proportions of its muscular attachments, especially of the mastoid, upper semicircular, and supramastoid ridges. The temporal ridges are also well marked, and the zygomæ large. Both these skulls are, however, aphænozygous. Large supraciliary ridges, and a strong glabellar eminence overhang moderately deep supranasal excavations. The same postlambdoid elevation we noticed in skull No. 1, also occurs in the present skull. The maxillaries and large portions of the facial bones are broken away.

The lower jaw is large and powerful. The coronoid process less elevated than in No. 1. The molar teeth in place exhibit the forms characteristic in European teeth.

Mr. ROBERTS stated that he brought the skulls and the bones on the table from Peterborough, and that they were collected from a number of others which had been thrown out. Among the human remains there was a specimen of a jaw-bone, in an exceedingly fine condition, discovered in digging in a stable at Wribbenhall, but how it came there he had no idea.

The PRESIDENT observed that the whole of the collection of bones and implements had been presented to the Society through the influence of their very zealous member Mr. Roberts.

On the Alleged Introduction of Syphilis from the New World. Also some notes on the Local and Imported Diseases into America. By WM. BOLLAERT, F.A.S.L., Cor. Mem. Univ. Chile; of the Amer. Ethno. Soc.; of the Ethno. Soc., London, &c.

IN 1825, when at Buenos Ayres, and observing that both gonorrhœa or blennorrhagia, and syphilis* were very common among the white and mixed portion of the population, I made inquiries as to whether these diseases were met with among the Indians of that country. I was informed, as far as was known on this point, the Indians were free from them.

In the autumn of the same year I was weather-bound in Nassau Bay, just behind Cape Horn. The Indians there were nearly naked, a few only having a little piece of seal-skin over the shoulders; and although there were signs that foreign shipping (as sealers and whalers) had been thereabouts, I saw no indication of either disease.

The latter end of the year I arrived at the port of Valparaiso, where there are certain localities called "Tops," the residence of the prostitute population, frequented by sailors of all nations, and there could be no doubt that syphilis and gonorrhœa were rife. I then travelled about the central portion of Chile, but did not learn that the Peons, or labouring population (Mestizos) were afflicted with either disease. For some years I resided in Peru, and visited Bolivia, but heard of no cases amongst those Indians, who lived distant from the whites, mestizos, or mulattos. However, among the whites and mixed breeds the diseases were very common.

In coming from Peru to Chile by land, along the shores of the desert of Atacama in 1829-30, I met some Indian families known as Changos; I did not notice the disease amongst them. I went then among the Araucano Indians, and neither saw nor heard that they were so afflicted.

In 1831, I was for some weeks in the Straits of Magellan, and had good opportunities of examining both sexes, when I observed what appeared to me to be syphilitic sores (chancres) among some of the women, and gonorrhœa among some of the men. I had no doubt that they had contracted these diseases from the crews of sealers and whalers who visited this portion of the continent; and it was a well known fact that Indian women had often been stolen away by said

* A medical friend gives me the following. "The true etymology of many of the words used in describing some of the forms of venereal disease is somewhat obscure, e. g. the origin of the word *syphilis* is uncertain; but I venture to suggest, under correction, that it might be derived from the Greek word *σφρα*—a slough, or cast-off skin, also the wrinkled skin of an old man (or from *σιφλος*, unclean). If this be so, it points to the constitutional nature of the malady. *Chancre* is from the French, which in turn is from the Greek *καρκος*, or cancer, alluding to the primary and external disease. Blennorrhagia is from *βλεμμα*, mucus, and *ρην*, to flow. Gonorrhœa is from *γονη*, semen, and *ρην*, to flow, and I should suspect has, in its pure sense, a reference to gleet, in the chronic form of the poison."

whalers and sealers, kept on board for a time, when doubtless the diseases had been communicated to them by Europeans.

In 1840-2, when in Texas, I visited many tribes of Indians of that country, as well as remnants of tribes which had fled from the United States, but observed neither disease among them. In 1854-5 I was again in South America, and neither saw nor heard of the disease among the pure Indians. Whilst amongst the white people and mixed breeds, particularly in the cities and larger towns, syphilis and gonorrhœa were very common.

So far my own experience as regards South and a portion of North America.

I will now briefly allude to some historical accounts on this subject, particularly as regards the Old World. In the Aphorisms of Hippocrates, 400 B.C., and in the Sentences of Celsus, 400 years after Hippocrates, as found in Sprengell's translations, in 1708. When Sprengell alludes to his own added Aphorisms "On the French disease," he says, it was just known to former more temperate ages, and, in a note, how far it was known in former ages, he refers to *Ecclesiasticus*, c. 19, v. 2, 3. Hippocrates, III.; *Epidemics*, iii., 41, 74, 59, and i. *De Morbus Mulierum*, 127. Galen, lib. iv.; *Meth.* c. 5, and lib. i. *De Gener.*, c. 23; lib. iii. *Epidemics*, sec. 3, com. 25. Pliny *His. Nat.*, lib. 26, c. i. *Avicen*, lib. 2. Valesius; Rhodius; Vigonius, *Lib. de Morb. Gall.*, c. &c. And that it does not, according to the vulgar opinion, derive its origin from Naples, France, East or West Indies. Josephus, c. xi., p. 108, says, when on the subject of purification, that Moses ordered those who had gonorrhœa should not come into the city.

We hear of syphilis, or that it began to be very prevalent or made public in Europe in the latter years of the fifteenth century. The idea has been thrown out in our own time that it might have been long previously known in a milder form. It is said there was ground for believing that syphilis was brought into western Europe on the return of the crusaders. There were seven crusades to the Holy Land from 1099 to the reign of Edward I, about 1272.

In Dr. Simpson's valuable *Memoir* regarding the appearance of syphilis in Scotland, in the fifteenth and sixteenth centuries (see *Trans. Epidemiological Soc. London*, 1862) he alludes to Peter Pinctor's assertion that syphilis was well known in 1483. Now, if this were so, added to what we know about a contagious disease known in very early times as the *Morbus Mulierum*, then the bringing of the disease from America on the return of Columbus in his first voyage, which was in March, 1493, just ten years after the period mentioned by Peter Pinctor, must I think be given up by those who have merely supposed that syphilis was originally brought from the New World by the Spanish discoverers.

Fulgosi, in his *Grüner's Aphrodisiacus*, p. 115, gives 1492 as the date of its general appearance in Europe, which is a year before the discovery of the New World. It was, about 1493, generally thought that the diseases had sprung up spontaneously and endemically in Italy, France, and Spain. If, however, in 1494-5, it was distinctly

recognised in Italy during the invasion of that country by Charles VIII of France, which was scarcely two years after Columbus returned from his first voyage from the West Indies. Charles VIII returned to France in May, 1495, and syphilis, it is mentioned, was generally disseminated on the march home by his troops, composed of his own people, Swiss, German, and Flemish auxiliaries.

I will now refer to Irving's *Life of Columbus*, composed from the very best materials. At vol. 1, p. 103, when describing the Indians of Hispanola in his first voyage, Columbus says, "they are contented with such simple diet, whereby health is preserved and disease avoided." Columbus brought six Indians with him to Europe, where he arrived in March, 1493, but nothing is mentioned as to their being in any way diseased. He left Spain on his second voyage in September, 1493, arriving at the fort of Navidad, where he had left a small party of Spaniards with orders to be kind to the Indians and ingratiate themselves with them. The reverse took place; many of the Spaniards were of the lowest sort and of most sensual character. They stole away Indian women, forcing them to live with them in the fort; this so irritated the Indians that the fort was besieged and attacked, and all the Spaniards were most probably got rid of.*

Columbus abandoned this locality and proceeded to found the city of Isabella, when his followers suffered much from the climate and fevers; this was in March, 1494, for which period Irving observes that many Spaniards suffered also under the torments of a disease hitherto unknown to them, the scourge *as was supposed* of their licentious intercourse with the Indian females; but the origin of which, whether American or European, has been a subject of great dispute." Here we have but a *supposition*, and my firm impression is, that had either of the diseases been known to the Indians, the Spaniards, who were very good chroniclers, would have given some details. We now come to the latter part of 1494, when Pedro Margarite and others ran away from Isabella to Spain. "Some ascribed his abrupt departure to the fear of a severe military investigation of his conduct;

* I will here advert to a singular story, told me lately by Herr —, consul for a foreign power to Mexico, as connected with a friend of his, who died at Orizaba. His friend had exposed himself to contagion with a Quarterona. A few hours afterwards the member began to swell, causing excruciating pain; at the extremity there was a crown or ruff of various colours. Herr — went for a doctor, who, on examining the patient, said that he must have been with the said Quarterona, who had communicated the same to three or four others, and they had died; that it was his opinion that his present patient would share the same fate—the individual did die in a few days. The Quarterona was arrested and sent to a house of incurables; as to her fate there is no information. Herr — informed me that this class of venereal is called the *crystalina*, or crystallised syphilis; that a few similar cases had occurred in the city of Mexico; and that something of the sort had formerly been known in Cadiz. He also gave me the following as the supposed origin of this *crystalina*. In 1493, Columbus, ere he left the West Indies to bring to Europe the news of his discovery of the New World, erected the fort of Navidad in Hispanola, leaving some of his followers there. On his return from Spain, he found that the whole of them had been killed or had died. It is said that some of them were affected with syphilis brought from Spain, and gave the disease to the Indian women with whom they had lived, and from these sprung the *crystalina*, which I think to be very doubtful.

others to his having, in the course of his licentious amours, contracted a malady at that time new and unknown (?), and which he attributed to the climate, and hoped to cure it by medical assistance in Spain."

Let us suppose that Margarite was afflicted with syphilis, there is no evidence that he had contracted it from the Indian female as a disease natural to the country. If he took the disease from an Indian woman, she had, in all probability, been inoculated by a diseased Spaniard; but it is far more probable, if he had syphilis, that he had contracted it in Europe, or from some of his own countrywomen in the colony.

We come now to 1497, when an edict was issued about syphilis at Aberdeen as a disease that came out of France and other strange parts. It was also called the sickness of Naples, the gor, gore, and grangore, a contagious plague afflicting male and female. The terms gore and grangore are of French origin, as—*verole*, small pox, *grande verole*, large pox or syphilis.*

In 1500 we find syphilis called in Scotland pokes and Spynie pokis; but it was generally denominated the French disease. Italians, Germans, and English spoke of it as the disease of Naples. The Dutch, Flemings, Portuguese, and Moors as the Spanish malady; and the Spaniards to this day call it Galico or French disease; but we never hear it quoted as the American disease.

Gonorrhœa was in full vigour in London in 1480, and known as clap or brenning, and its existence spoken of a century earlier. in the time of Richard II.

There can be no doubt that syphilis existed extensively at Naples, and was brought into Western Europe with the return of Charles VIII from that country in May 1495. I may here observe that when Columbus returned to Europe from the New World in May 1493, there is no allusion at that date that syphilis was brought from America. When Sir. R. Alcock was asked by a friend of mine as to the existence of syphilis in Japan, he said it was known as the Portuguese disease, and was common there.

However, as regards the New World, history gives no evidence as to the disease having been brought from there, and the non-existence of both of the diseases amongst those Indians at the present time removed from proximity to the whites and mixed breeds is, to me, a still more convincing proof that syphilis, as it has been well known before and since the end of the 15th century, is not of New World origin.

Benzoni, who was very early in the West Indies and in Peru with Pizarro, speaks of the *Morbus Gallicus*, or French disease. Solazano, *Monarquia Indiana*, lib. i, c. 4, p. 24, says it is most doubtful and uncertain that the venereal disease was introduced from the Old

* See *Des Divinités Génératrices ou du culte du Phallus*, par J. A. D., Paris, 1805, p. 291. "On nommait au 15ème siècle, les courtisanes élégantes, gores (gore, a sow), gaures ou gaurières, et les robes décoltees (low-bodied dresses), robes à la grante gore; c'est pourquoi un prédicateur célèbre par ses buffoneries, frère Maillard, s'écrie souvent contre les bourgeoises qui portent des robes à la grant gore."

World into the New. He calls syphilis "the French or Bubatic." Frezier in 1719-14, in alluding to the hospitals in Lima, mentions San Lazaro for the cure of lepers and such as have venereal distemper.

About 1742, the Ulloas, who were very close observers, being at Lima, thus allude to syphilis: "The venereal disease is equally common in Peru, as in those countries we have already mentioned" (they had just come from New Granada and Quito); "it is, indeed, general in all that part of America; and but little attention is given to it until arrived to a great height, the general custom in all those parts." As to the Indians, he says, i, p. 420: "Though the venereal disease is so common in the country (amongst the Spaniards and mixed breeds), it is seldom known among them (the Indians), and, when observed, has been communicated by the whites or Mestizoes."

Describing Quito, the Ulloas say: "The venereal disease is here so common, that few persons are free from it; and many are afflicted with it without any of its external symptoms. Even little children, incapable by their age of having contracted it actively, have been known to have been attacked in the same manner by it as persons who have acquired it by their debauchery. Accordingly, there is no reason for caution in concealing this distemper, its commonness effacing the disgrace that in other countries attends it. The principal cause of its prevalence is negligence in the cure. Few are salivated for it, or will undergo the trouble of a radical cure."

When first in South America, I was astonished to hear females say (sometimes rather in confidence) of any of their male acquaintances who complained of being unwell, there being no visible sign of illness—"pues es galiquente, y quizas de sus padres", he has been syphilitised, perhaps, from his parents.

Velasco, in his excellent *Historia de Quito*, i, 185, says, when speaking of the Indians of that country, "Amongst other diseases, they are free from venereal, which is falsely attributed to them, but brought to the country by the Europeans."

Speaking of the Creeks and Cherokees in the United States, Bartram, who wrote in 1790 (*Amer. Ethno. Soc. Trans.*, 43, 1853), observes that they have the venereal in some of its stages. In some places it is scarcely known, and in none rises to that virulence which we call small-pox, unless sometimes amongst the white traders, who themselves say, as well as the Indians, that it might be eradicated if the white traders did not carry it with them to the natives when they return with their merchandize; these contract the disorder before they set off, and it generally becomes virulent by the time they arrive, when they apply to the Indian doctors to get themselves cured. "I am inclined," says Bartram, "to believe that this disease originated in America (?) from the variety of remedies found among the Indians, all of which are vegetable. I have imagined that the disease is more prevalent as well as more malignant among the northern tribes, because of their closer proximity to the whites. The vegetables are, various species of iris, croton, or stylingra or the yaw-weed, smilax, bignonia, and lobelia syphilitica."

In Wilcocke's *Buenos Ayres*, p. 412: "The syphilitic disease,

though very common amongst the inhabitants of the Spanish race, is seldom known among the Indians, and then only when communicated by the foreigner."

Stevenson, in his *Travels in South America*, i, 405, remarks: "With what certainty the origin of syphilis has been traced to America, I know not; but the wild tribes of Arauco (Chile), Archidona and the Napo (Peru), those of Darien (New Granada), and several others, as well as those who live in small settlements among the Spaniards, are totally unacquainted with it; and, although I have been particularly inquisitive on this head, I never could hear of a solitary instance of the disease, except in large towns and cities, and then it was limited to a certain class (prostitutes), where it was likely to be most prevalent."

I now come to a recent writer on subjects connected with the New World, who has again brought the subject of the existence of syphilis in America to our notice, and that it existed there at an ancient date.

In vol. i, p. 181, *Hist. des Nations Civilisées du Mexique*, par l'Abbé B. de Bourbourg, in detailing the legend of the deification of Nanahuatl, he says: "He is there with the others, but he is sick, he suffers from a terrible and incurable disease; there is nothing now to attach him to life, the joys of which he has drained . . . he throws himself into the flames, and is instantly burnt to ashes." In a note it is stated, "that the disease above mentioned was the *American syphilis*, which is somewhat different from that of Europe. Original and numerous documents, in the languages of those countries, have proved to us convincingly the existence of this disease in America before its discovery by Columbus."

Upon so important a subject, I should have thought that reference would have been made to these "original and numerous documents"; for without them, that the sickness of Nanahuatl was the "American syphilis", may be very much questioned.

At p. 182 of the same work, the abbé says: "Strange aberration of the human mind! That which was most revolting concerning this deity, the most revolting of matter, to be clothed so mysteriously; the symbols of grandeur and majesty, and the words which express the most infectious corruption of the human body, has even to this day, among a multitude of Indian nations, an analogous state, as that of the most elevated power." This is a most extraordinary paragraph. Had it had to do with phallic worship, we might have understood the affair. However, in a note, a far more extraordinary position of things appears; it is as follows: "In all the Spanish translations of the history of Nanahuatl, he is continually called by the name of 'Buboso', which the abbé translates "syphilitic". This struck me as rather strange, and I have investigated what I believe to be the true meaning of the word buboso in this case; namely, that it merely comes from the Spanish word buba, a pustule, and that buboso has been applied to the syphilitic swellings in the glands known as buboes, but that this bubo of the aboriginal Mexican Indian was an ordinary pustule or tumour, and not syphilis. The abbé proceeds, having once persuaded himself that this buboso means syphilitic, "The word *puz*,

which signifies the foul and corrupted matter of this disease, in the tzendal and in the otzile, becomes a verb to signify the sacrifice, and especially that of human victims; it means, also, to enchant, to perform miracles, or prodigies. *Puz-nawcal*, means enchanter, the great and marvellous man, etc. *Galel-ahpop* is a princely title, and *galel-ya* is a syphilitic. *Xogahuah* means princess, and *tantel yoghuah* literally means, she made herself a princess, as well as 'exit ex ea syphilis'. *Tepeu* means great syphilis, or he who has a great deal of it; *gawal tepegal*, divine, or the greatest majesty." After this rather hyper-philological dissertation—to me of very little value—the abbé proceeds: "Or is it, that the Spanish ecclesiastics in their catechism, being ignorant of the origin of these words, employed them to express the most sacred things of our religion, in the Quiché and Cakchiquél?" It would take a volume to write all on such matters, so multiplied and varied are they. We have to apologise to our readers for this strange note; but the circumstances have appeared so curious to us, that we have thought it our duty to lay it before the eyes of the learned.*

In a paper by Professor Owen to the British Association, on the Andamans or Mincopies, long isolated from any other people, Dr. Jebb said: "I never met with any one of them affected with gonorrhœa, syphilis, intermittent fever, itch, piles, small-pox, goltre, or other disease."

In 1831, I became acquainted with Mr. Beale, a surgeon, who subsequently wrote the *History of the Sperm Whale*. At p. 375 of that work, he says, speaking of Tahiti: "But if Mars had afflicted them so sorely, Venus herself had been less kind than her consort; their intercourse with foreigners had left their diseases, that were depopulating the islands; men, women, and even little children in arms, were suffering from this worst of Pandora's gifts, for the cure or alleviation of which they possessed neither knowledge nor means." At the period I speak of, I had long communications with him on the subject of the depopulation of many of the islands in the South Seas;

* I have lately had the subject of phallic worship in the New World brought to my notice. My impression had been that it was unknown to the Red Man. However, in a work entitled "Des Divinités Génératrices ou du culte du Phallus", already alluded to, it is mentioned as existing, "dans quelques parties de l'Amérique. Lorsque les Espagnoles firent la découverte de cette partie du monde, ils trouvèrent ce culte établi chez les Mexicaines." I find that this information is obtained from a work written by a gentleman who was with Cortes, who says: "In certain countries, particularly at Panuco, on the northern coast of Mexico, the Phallus is worshipped (il membro che portano fra la gambe), and they keep in their temples."

The Abbé B. de Bourbourg supposes the Phallic worship to have existed among the Allighewas, Algonquins, and Iroquois; and there is good reason to believe that something connected with this worship has lately been observed among the Mandans. As far as I have at present examined this matter as regards South America, I have not as yet made out the existence of this worship there. Some of the older Spanish writers on the New World speak occasionally of the reported commission of unnatural crimes by the Indians, but about which the evidence is not at all clear. I have seen a few examples of indecent execution in pottery from South America, but of a natural character only.

when he gave me a copy of his pamphlet on the matter, in which he positively states that the diseases had been communicated to the islanders by the whalers and sealers; and he proposed to the philanthropists of his day to send to the said islands a number of young medical men to do their best to cure or arrest these dreadful scourges; that these were the proper sort of men to improve the natives; that they (the surgeons) would explore the islands, make collections of natural history, to be sent home to our museums, and in this way repay in some measure the expense incurred. Mr. Beale's appeal was in vain. Missionaries only have been sent from England and the United States to the "heathen", but no medical men to cure the loathsome diseases contracted from the white man.

As a medical curiosity in connection with this subject, I translate from the *Mercurio Peruano*, No. 323, 6th February, 1794, published in Lima. It is headed, "Publication of a Receipt by Royal Order, with a Note by the Señor Oidor." "In publishing this receipt, we should give our most cordial and reverent gratitude to the King of Spain our Lord, who is not unmindful, amongst his heavy troubles, of having a care for the health of his happy and so tenderly beloved vassals. The receipt sent will be dear to us, seeing that the various experiments made are most satisfactory, so that the Sovereign has ordered it to be published in his remote dominions.—ROYAL ORDER.

"Excellent Señor,—I remit to Y. E., by order of the King, the accompanying receipt, used by the Honorary Commissary of War, Don Rafael Ramos, Comptroller of the Military Hospital of New Orleans; its advantages are well known for the cure of rheumatism, *venereal*, and scorbutics, so that the faculty of surgeons under Y. E.'s care may pay every attention to its use. God protect Y. E.—Palace, 22 July, 1793. Alange—to the Lord Viceroy of Peru.

"Instruction how to make the tincture:—Take 11 pints of good white wine, and macerate for three days; zarzaparrilla 3 oz.; holy wood 3 oz.; zarzafra 3 oz.; senna 4 oz.; harmodatil 3 oz.; tartar emetic 4 gr.; hearts of pino 1 oz."

"In the commencement, the tincture was only used in venereal cases, but it is now extended to scorbutic rheumatisms, humoral fluxion of the eyes, linfaticos oserosos in any portion of the body, to clean the kidneys, urethra, and bladder, or the impurities therein, taking away sand and even small calculi, useful in gout. Then venereal ulcers or gonorrhœa, exostosis (probably nodes), and other symptoms in the texture of the solid portions that have suffered, or have suffered alteration or disunion, the cure is not so rapid."

When I went to South America in 1825, a French quack medicine called *pantamagogo* was the rage; it was taken for every mortal disease, *venereal* included. I examined it, and it appeared to be a highly drastic tincture. With the arrival of European medical men, *pantamagogo* and some other quack rubbish were abandoned; still, many American and French patent medicines are patronised.

ON LOCAL AND IMPORTED DISEASES IN AMERICA.—*Mexico*.—Torquemada says in lib. vii., c. 29, to one of the deities were attributed diseases, as "small pox, swellings, abscesses, itch, and bad

eyes." As to small pox, there may possibly have been an indigenous variety; but that which has much assisted to thin off the red men, say from a hundred millions to ten or twelve millions, was the European. Las Casas calculated that, in the first forty years after the discovery of America, twelve to fifteen millions of the natives had been destroyed by the Spaniards, *i. e.*, by war and its results, and disease. As to the introduction of small-pox into the New World, it is on record that as early as 1520 Narvaez, who joined Cortez with his fleet, had with him a negro who had the disease. It spread rapidly in that part of Mexico, when numberless Indians fell victims. Maxi-ixa, the chief of Tlascala, took it and died, as did also Cuiclahua, the successor of Montezuma. Prescott observes that the small-pox at that time "was sweeping over the land like fire over the prairies—the natives perished in heaps, and that the small-pox was *not* known before the arrival of the Spaniards." As early as 1515 this disease had begun to thin off the natives of the West Indies.

Pests, or epidemics, are spoken of by various authors as depopulating the country before and after the conquest. We know nothing of the symptoms of the visitations before the conquest. However, to this day, independent of the indigenous intermittent fevers in the some localities, there are bad bilious fevers on the Pacific coast, and yellow fevers running into black vomit on the Atlantic, particularly about Vera Cruz.

These intermittent, bilious, and yellow fevers are traced in a northerly direction along the coast of Texas into the Southern States of North America. I took the yellow fever at New Orleans, for which large doses of calomel were given. In Texas for intermittent fever, I took quinine in pretty large quantities and was bled; but to get rid of this last fever I had to seek a change of climate.

Texas.—In 1840-2 I explored a great portion of this country. On the coast, in the Autumn, the bilious would rapidly change into yellow fever, carrying off its victims. A hundred miles or more in the interior I have personally experienced bad intermittent fevers, but farther westward, and where the land is more elevated, the country is healthy. Indians of the interior going to the coast easily catch the fever.

B. de Bourbourg (ii. vol. of his *His. du Mexique*, 596) says, "about 1464, Mayapan, in Yucatan, was destroyed by civil wars. After a period of great abundance came a famine, when multitudes of animals died and putrified; this was succeeded by a peste or epidemic, which commenced the depopulation of the peninsula of Yucatan. And in vol. iii, p, 497, he speaks of Tlalocan, a sort of terrestrial paradise for those who had died by lightning, or drowned, the lepers, the syphilitics, the itchy, gouty, etc. The warriors who had died on the field of battle were taken up amongst the stars." As to the list of diseases, they are, I conceive, of Spanish origin, and not Indian.

New Granada.—What Ulloa wrote years since, applies in a great measure to the present time. The climate, particularly of the coast, is very hot with much rain. The complexion of the people is livid, and the young are mostly affected by disease.

The first disease is called Chapetonada (in allusion to the name of Chapeton given to the old Spaniards) and fatal to very many Europeans; the attack lasts three or four days, when the patient rallies or dies; this is the local yellow fever, and when in its most malignant state is the black vomit.

The residents are subject to leprosy, which is by some attributed to eating large quantities of pork. Lepers are allowed to marry, and in this way the disease is perpetuated. They are confined within certain limits, but allowed to go out begging.

The itch and tetter (a cutaneous disease) are common; an earth called maqumaqi is used as a remedy. There is a singular disease called *cobrilla*, or little snake, it is a tumour of a bad sort. Spasms and convulsions are common, and oftentimes fatal.

At Porto Bello in particular, foreigners fall victims to the climate. It was a common opinion that parturition at Porto Bello was so dangerous among the European women that they generally died in child-bed; so that when three or four months in pregnancy they were sent to Panamá. European animals were so much affected by the climate that they scarcely bred. This Porto Bello has been and is still the hot bed of epidemics and mortal distempers with black vomit of a bad sort, and which made great havoc on one occasion, in 1726, to a British fleet.

Quito.—Malignant spotted fevers and pleurisies are common in this country, and when they present themselves, say in the capital, generally sweep away large numbers, indeed they are pestilential contagions. The mal de vicho was considered by Jussieu as gangrene of the rectum and not uncommon; those who laboured under flux were most liable to the malady. There is no canine madness in the city of Quito.

The people of this country are subject to a distemper unknown in Europe, and may be compared to the small-pox (?) which few or none escape; it is called *peste*, its symptoms are convulsions, a continual endeavour to bite, delirium, vomiting of blood and is oftentimes fatal. This peste is not peculiar to Quito, but has been observed in other parts of South America. At Guayaquil, the principal port, during the winter months, there is much intermittent fever, yellow fever occasionally. The natives are subject to diseases of the eye and cataract. The Indians very much dread the visitation of the European small-pox, which comes about every seven or eight years, when it makes very great havoc. They have also mal del bicho, or, as called by them, sickness of the valleys. Tabardillo, or spotted fever, they have also, and cure in a very rough manner. Of late, whooping-cough or Tos de perro, dog's-cough, and measles of a bad sort, imported I conceive, have afflicted the Indians in this region, as well as in the north of Peru.

Indians of the mountains in going to the coast catch tercianas, or intermittent fevers; those of the coast who go to the high lands, suffer from cold and get inflammation of the lungs.

Velasco, in his *Historia de Quito* (iii, 66), alludes to the epidemics or *pestes*. There was one that visited nearly the whole of South

America about the end of 1589. It commenced at Carthagena, travelling south to Quito; in the capital 30,000 died out of 80,000. It is of this that Helps (*Spanish Cong. in America*, iv, p. 84) adverts to and quotes Lozano, *His. of Paraguay*. The epidemic was first noticed in Carthagena in 1588, and it passed over all South America to the Straits of Magellan. It was much more fatal to the natives than the Spaniards. The Indian children were so struck down by the epidemic that not one out of a hundred escaped with life. The Indians offered no mental resistance to the ravages of this disease, which seems to have resembled the diphtheria of modern times. In Lozano's words: "Cerrabanseles las fauces de manera, que ni daban passo de lo interior al aliento, feneciendo la miserable vida entre las congojas del ahogo." Their throats became closed up, and in such a manner that no sustenance could pass, thus ending their miserable lives in the horrors of choking.

In 1625 Quito was visited by another peste called alformbrilla (St. Anthony's fire?) and garotilla (quinsey): 11,000 died of it in the city of Quito. Again, in 1759, there was another; of this Velasco, the historian, suffered. It was a sudden and violent fever, and severe head-ache, with the paleness of death, and great prostration; about one in a thousand of the Spaniards died of those who could obtain medical assistance, but 10,000 of the Indians who lived in the city perished. There was a fourth in 1785, a complication of diseases, including small-pox; in five months from 20 to 25,000 died of it in the city of Quito and its vicinity.

In 1560 Potosi was visited by a peste, many dying after only twenty-four hours illness. It appeared again the following year. In 1684 there were great droughts and a deadly plague in Peru. Ulloa ii, p. 91 94, *Voyages to South America*, has some curious observations on the "distempers" of Lima, which cannot in any way be congenial to health or the maintenance of a vigorous population even of the whites, to say nothing of some of the mixed breeds. The distempers most common to Lima are malignant, intermittent, and catarrhus fevers, pleurisies and constipations; and these rage continually in the city. The visitation of the small-pox in Quito as well as here is not annual, though when it prevails great numbers are swept off. Convulsions are common (unknown in Quito, but known in Carthagena) of the partial, malignant and arched, of which he gives a fearful account. Cancer in the womb is most common, most painful, very contagious, and almost incurable. Slow or hectic fevers are common in this country and likewise contagious.

Chile.—This is probably one of the best climates in America. However, the capital, situated at 1540 feet above the level of the sea, and under the great Andes, would be called by us rather severe, for in summer it is very hot during the day, and cold at night. It is subject to a malady known there as chavalongo, which is a putrid typhus fever, being very often fatal. It appears after the first autumnal rains and is caused by miasma. Tisis, or calentura, is not uncommon; when attacking the young it is called consumption, and older people, decline.

Brazil.—When I first visited the coast of this country in 1831 I

found it very hot, not unhealthy, but with occasional bilious fevers. However, some years afterwards yellow fever made its appearance, supposed to have come from the West Indies, and has continued at intervals. Cholera also visited Brazil.

The Guayanas and Venezuela have their share of intermittent, bilious, and occasionally a little yellow fever.

Climate.—The reason why great groups of humanity, as the whites, blacks, orientals, and red men of the New World enjoy general good health in their own country, is that each group has its own climate, and that their organisation is peculiarly fitted for the satisfactory assimilation of the air they breathe, the food they eat, and other personal arrangements. However, when the white man goes to the country of the black or oriental, he soon discovers they are not congenial to him, to say nothing of the local diseases new and oftentimes fatal to him. Take the negro from his tropical lands to high northern or southern latitudes, he declines and dies before his time. Take the red man away from America, he soon pines, particularly in the climate of Europe; he is prone to European diseases, as small-pox, measles, hooping-cough, etc.; he might do better in Polynesia and India on the score of climate, but he must have no laborious occupation. Then what is the conclusion we are to arrive at? Namely, that each great section of mankind thrives only in their own particular climate; take them to another and the result is unsatisfactory.

IDIOCY AMONG INDIANS.—I do not recollect having ever seen or heard of idiocy or insanity among the Indians, either in North or South America. There is, on the other hand, idiocy among the white descendants of the conquerors, and in some cities more than others, insanity is observed.

Mr. Reddie stated in his paper to this Society on *Anthropological Desiderata*, read in February last, that idiocy was unknown among the negroes of Africa.

The **PRESIDENT**, in proposing the thanks of the meeting to Mr. Bollaert, observed that the subject of the paper was one of great importance. It was Mr. Bollaert's opinion that there was no trustworthy evidence to prove that syphilis had been introduced into Europe from the New World. For his own part, he was not satisfied with the evidence brought forward, and he thought that further evidence ought to be sought for and adduced, not only with regard to the introduction of syphilis but to some other contagious diseases. The question was not to be settled by the authorities of ancient writers, but he conceived that much light might be thrown on it by archæological discoveries. In no ancient skull that he was aware of had there been found any trace of syphilis, but it was easily discoverable in many modern skulls, the bone of the skull or the teeth being more or less affected by the disease. The question appeared to be in a very unsatisfactory state. They could form no judgment respecting it from the statements of old authors that had been brought forward, and he thought they must leave the matter to be elucidated by further discovery. They might, perhaps, arrive at some satisfactory result by the examination of an-

cient skulls, for if marks of the disease could be found on skulls of persons who died before the discovery of America, such evidence would be conclusive. In the examination of most modern skulls of soldiers it had been ascertained that there was scarcely one skull of men who died in the army that was not affected by syphilis, and some were in a frightful state. Even some of the beautifully white prepared skulls on the table, which had been presented to the Society by Professor Hyrtl, showed marks of the disease. The President inquired whether any member then present knew of any ancient skull that had indications of syphilis.

Mr. CARTER BLAKE stated that about two years ago a skull was submitted to him, which was absurdly alleged to be the skull of Richard III, but it proved to be the skull of a female, and exhibited symptoms of having been affected with syphilis. The skull was said to have been associated with bones of the extinct *Bos primigenius*, but that sort of evidence was of a very doubtful kind. That was the only skull of reputed antiquity in which he had observed traces of syphilis.

Mr. St. CLAIR observed, in reference to the contradictory statements of the origin of the disease—Europeans and Americans reciprocally asserting that it was derived from the other—that it might probably have sprung from the mixture of people very dissimilar to each other. If that were so, the contradictory evidence mentioned in the paper might be reconciled; otherwise it seemed impossible to understand how those contradictory reports could have arisen.

Mr. PIKE said there was one hypothesis of the origin of the disease which had not been suggested. It was well known that the alchemists of the middle ages introduced mercurial remedies in medical practice as cures for many diseases. Basil Valentine was one of those who had introduced such remedies. It seemed very possible, therefore, that the severe symptoms of syphilis which became known about the period of the discovery of the New World might have resulted from the application of those strong remedies. Persons afflicted with the disease aggravated by that mode of treatment, might attribute it to importation from America; the disease being in fact generated by uncleanly habits and by the use of mercury combined. Typhus was said to have been generated in a similar manner, and to have been afterwards communicated; and he thought that syphilis might have originated and been communicated in the same way.

Dr. TURLE thought that few medical men would adopt the idea that the application of mercury could have been the cause of syphilis. There could be no doubt, indeed, that mercury greatly aggravated the symptoms, but it could not have produced them. There was unquestionably a greater preponderance of the disease in modern times than in former periods, which would to some degree countenance the opinion that it had been introduced from America; but he thought it could scarcely be doubted that it existed in Europe before the discovery of the New World.

Sir CHARLES NICHOLSON noticed the supposed traditions among the Indians which it was conceived indicated the existence of the disease among them. As regarded the Mexicans, it might be observed

that as they possessed no written language, no importance could be attached to any such statement respecting them. It was asserted that they practised phallic worship, and that that worship was connected with the disease of syphilis. He was not aware, however, that there was any evidence to prove the existence of phallic worship among the Indians of South America. One argument in support of the opinion that the disease first assumed a specific character at the end of the 15th century was, that no indication of it was to be found in the literature of the East, which it might be assumed would have been the case had the disease been known. The phallic worship among the Hindoos was not of the sensual character commonly supposed. It was connected with profound philosophy, and really meant nothing sensual, but was symbolic of the great generative powers of Nature. He thought that if syphilis had existed among the Hindoos it would have been symbolised in their works, which gave minute particulars of every subject. So far as he was aware, there was no description in their writings before the period of the discovery of America, to indicate clearly any knowledge of the disease. With respect to Australia, he said, it had made frightful havoc in that country, and the rapid disappearance of the native inhabitants had been attributed partly to that cause. With regard, however, to the extinction of aboriginal races, he observed that there was another cause in operation which tended more effectually to produce that effect. The women were generally less numerous than the men; that was particularly the case among all the islands of the South Pacific, and in all parts of the world so circumstanced the original races were dying out and would soon become extinct. The real cause of it is, that where there is a great disparity of the sexes, and the women are much less numerous than the men, virtual prostitution exists, and the consequences are infertility and extinction of race.

Mr. WITT said he could not perceive much connection between phallic worship and syphilis; but the existence of that worship in South America and in Central America he thought was proved by Count de Walder, who gave details of its practice there and representations of phallic images.

M. BOLLAERT mentioned that there is a disease peculiar to Quito, and that idiocy is not known among the aboriginal races of North or of South America.

Mr. REDDIE inquired what evidence there was of the non-existence of idiocy among the Indians of America. If that were proved to be the case, he thought it possible that the absence of idiots might be accounted for by supposing that the infants were destroyed when idiotic. That was the practice among the Greeks, or at least, was recommended by them. The facts on the subject were very meagre.

Mr. BOLLAERT stated, in reply, that he was not aware that the Indians destroyed any of their children.

Dr. TURLE asked whether any true case of plague had been known in South America.

Mr. BOLLAERT said he thought not.

The PRESIDENT then announced the papers to be read on the 31st inst., and the meeting adjourned.

MAY 31st, 1864.

GEORGE WITT, Esq., F.R.S., IN THE CHAIR.

THE CHAIRMAN regretted to state that the serious illness of their President, Dr. Hunt, prevented him from being present, and that they would not, consequently, have his paper read as had been announced, and on which considerable discussion had been expected.

The minutes of the preceding meeting were read and confirmed.

The following presents were acknowledged: Bulletins de la Société d'Anthropologie de Paris, from the Society; casts of three Basque skulls, from the cemetery of Z— (Guipuscoa), and casts of three skulls, from the cavern of Orrouy (Oise), Bronze Age, presented by the Paris Society of Anthropology.

The names of the following gentlemen, elected Fellows since the previous meeting, were then announced:—

The Rev. W. Selwyn; T. H. Wickes, Esq.; H. V. Crassweller, Esq.; T. J. Smith, Esq.; C. H. Gardner, Esq.; C. A. Du Val, Esq.; R. Austin, Esq.; H. B. Sheridan, Esq., M.P.; T. J. Dobson, Esq.; V. Ruskin, Esq.; J. Martin, Esq.; F. W. Aley, Esq.; W. J. Sharpe, Esq.; J. Thompson, Esq.; J. Parnell, Esq.; Sir Andrew Smith, C.B.; H. B. Riddell, Esq.; F. B. Montgomerie, Esq.; G. H. Ogston, Esq.; Alderman D. H. Stone; F. Thompson, Esq.; W. L. Scott, Esq.; A. Sanders, Esq.; The Right Rev. the Lord Bishop of St. David's; T. R. P. Shute, Esq.; J. Drummond, Esq.; P. Sharp, Esq.; C. Jellicoe, Esq.; J. Morris, Esq.; and W. T. Pritchard, Esq.

The CHAIRMAN stated that the Council had appointed Mr. Geo. E. Roberts as honorary secretary of the Society, in the place of Mr. Carter Blake, resigned, and that the Council considered themselves very fortunate in obtaining his valuable services for that office.

Extreme Hypertrophy of the Skull.

Dr. G. D. GIBB, M.A., LL.D., exhibited two calvaria from skulls enormously hypertrophied, from the museum of the Westminster Hospital. They were very remarkable skulls, and exhibited the effects of disease in a striking manner, producing extreme deformity from their great size and peculiar shape, of which he believed that the Neanderthal skull might probably be an example. Their general size, massive character, and weight were such as are rarely witnessed. They would astonish those persons not accustomed to witness the effects of disease on the cranium, and if they had been accidentally discovered imbedded in the earth, the impression might have been conveyed that they belonged to some new and distinct race of human beings. The experienced pathologist, however, would at once draw the line of distinction between them and healthy specimens. In one specimen, the brain must have been of the natural dimensions,

although the parietes of the skull had become greatly thickened, and the general weight nearly doubled; whilst in the other the bone was lighter, the walls equally thickened, and the cavity of the cranium encroached upon by the disease, and the brain evidently compressed in some parts. Dr. Gibb then read the following description of the heaviest calvarium, taken from the catalogue of the hospital museum: "Section of a skull, just above the crista galli. The thinnest part, near the anterior inferior angle of the parietal bone, is half an inch in thickness, the thickest, near the posterior inferior angle, is nine-tenths of an inch thick. There is no obvious distinction between the diploe and the inner and outer tables. The bone is of a uniform coarse texture, and possesses considerable hardness. The parietal fossæ are increased in depth; the frontal are diminished. The meningeal arterial grooves are very deep, and are here and there converted into canals by the joining of their edges. The openings of numerous veins are visible on the inner surface. No traces of any of the sutures remain either on the internal or external surface. The weight is not so great as its size and thickness would indicate, being only one pound eleven ounces and a half, whilst that of an ordinary skull sawn off at the same point is less by one pound." Dr. Gibb remarked that the foregoing account hardly did justice to the specimen; its extreme width was seven inches and a quarter; its antero-posterior length, eight inches; and its circumference, twenty-four inches and three-quarters; and, when the skull was uninjured, its great size, peculiar form, and singular aspect, must have invested it with considerable interest; he regretted much that the entire skull had not been preserved. Dr. Gibb further said, that his chief object in bringing these skulls before the notice of the Society, was to have it placed on record that there were such remarkable instances of hypertrophied skulls in existence; for if similar specimens were discovered hereafter, and it was not known that such an abnormal state was owing to disease, it might occasion some perplexity. He produced another specimen, which was the entire skull of a female greatly diseased with syphilis. The outer surface, and the interior also, were much corroded, producing perforations, and here and there the bone was almost transparent. The sutures had become blended together. Dr. Gibb observed, that it was of importance, when paying attention to the natural history of man, that the anthropologist should not be unaware of the effects of disease in producing peculiarities, of which the skulls he had exhibited were examples.

Mr. HOLTHOUSE said, in reference to one of the skulls from the museum of Westminster Hospital, that there was no history connected with it. All that was known was, that it belonged to Mr. Lynn, who was accustomed to use it as an illustrative specimen in his lectures. Microscopical examination had detected that the original skull was inside the bony mass, and that the thickness of the skull was caused by osseous deposit on both sides, the original bone occupying the centre. It had evidently been formed by a morbid process, and not by healthy accretion. He had reason to believe that this skull was once the property of John Hunter.

Mr. MACKENZIE inquired whether Dr. Gibb had known the case of the female, whose skull he had exhibited, in life, and was then aware that the bony structure was destroyed? It would be interesting to have an absolute specimen of the effects on the skull produced by a known disease. He thought it would be desirable that a microscopical examination should be made of the skull, to see the character of the disintegration that had taken place.

Dr. GIBB replied that he had seen the case during life, and that the female was in a most fearful state of disease. There were ulcers over the skull, and the bone had become exposed. Some of the ulcers, he had no doubt, penetrated the skull, and openings can now be seen penetrating it. She had lost the bones of her nose; and the case was so remarkable, that he had adopted means to obtain the skeleton after death for examination. He stated further, in reply to Mr. Mackenzie, that the woman had been dead about eighteen years. He said he intended to submit the other skulls to a careful inspection, and would endeavour to complete a model of the larger and most peculiar one, and, if his efforts were successful, he should have casts made of it, and would present one to the Society, to be placed in their museum.

The following papers were then read:—

On a Jaw from Buildwas Abbey, Co. Salop. By GEO. E. ROBERTS, Esq., Hon. Sec. A.S.L., and C. CARTER BLAKE, F.G.S., F.A.S.L.

The line of the Severn Valley railway cut through the burial ground of the monks who tenanted Buildwas Abbey, near Broseley. The jaw exhibited was obtained by Mr. Roberts on the spot, during the cutting. No remains of coffins were found, although the number of human bones thrown out was not inconsiderable.

This jaw is that of a powerful young man. The condyle is large; and the coronoid process has the same abnormal forward curve of its anterior border, as is noticed by Professor Owen in his paper on the Andaman islander's skeleton* (*British Association Reports*, 1861), which is not unusual in English lower jaws. Only the first and second molars are in place. The number of cusps accord with those in typical European jaws.

Mr. ROBERTS said he was in Shropshire at the time the railway cutting was being made, and then found the jaw bone which was on the table. It appeared to possess some characters that were not very common, and he brought it away to place it in the Society's museum.

Mr. C. CARTER BLAKE observed, that the specimen which Mr. Roberts had presented to the Society was a very curious jaw; and it repeated the peculiarity in its formation, on which Professor Owen laid stress, in the paper he read at the meeting of the British Association in 1861. The same abnormal form of the coronoid process

* "The lower jaw shows a variety in the shape of the coronoid process which is occasionally seen in Europeans; it is broader and lower than usual; the front border is more convex at its upper half, and forms with the concave lower part a deeper and more decided sigmoid curve." (Owen, *loc. cit.*)

was repeated, and it tended to confirm the theory—he might almost call it the law—that these so-called abnormalities become more common the further our examinations are extended, and that, in reality, there are very few abnormal formations, strictly considered. This specimen was another instance, that what appears to be abnormal on a limited examination, is found to be common when the investigations are extended.

Mr. MACKENZIE drew attention to the fact, that the enamel of the teeth was perfectly preserved after an interment of about 600 years; and he desired to know the nature of the soil in which the bodies had been buried.

Mr. ROBERTS stated that the date of the jaw was about the year 1280, and that the bodies had been buried in gravel. He saw about six or seven different skeletons; but they were so much decomposed, that he could not get more than the jaw, which he now produced, and a few bones.

Mr. MACKENZIE further observed, that in the skeletons of some of the men killed in Cromwell's battles, though of a much more recent date, the teeth were all decayed.

Mr. C. CARTER BLAKE said, that the state of preservation in which skeletons were found depended on the nature of the substance in which the bodies had been deposited. In the human remains found in peat, the enamel was always well preserved.

The thanks of the meeting having been given to Mr. Roberts and to Mr. C. Carter Blake, the following paper was read:—

On Human Remains from Kent's Hole, near Torquay. By C. CARTER BLAKE, F.G.S., F.A.S.L., Foreign Associate of the Anthropological Society of Paris.

SOME time ago, Mr. William Davies, of the British Museum, to whom I am indebted for many suggestions relating to the specimens in that collection, called my attention to a few remains from the classically celebrated cave of Kent's Hole, which had been obtained by purchase from a dealer named Heggerty, and which had been passed over by many observers on the subject. I shall, with the Society's permission, give a list of these objects, with a few descriptive notes.

1. Left humerus, covered on one side with thin layer of stalagmite, charged with carbonate of iron.

2. Left ulna, exhibiting traces, but in less degree, of stalagmitic deposit; the bone is worn very thin in middle, where it has been gnawed by mice, or other small rodents.

3. Axis and six fragments of cervical vertebræ.

4. Right ramus of the inferior mandible of an aged individual; no teeth are in place. Sockets, however, exist, indicating the spots where δ 1, δ 2 on right side, δ 1 on left side, canine on right side, and p 1 and p 2 right side have been. Alveolar absorption operating for a long period of time before death, has removed all traces of the true molar series. The body of the jaw is consequently very thin immediately below this part, a flattened depression, as is usual in aged individuals, scooping backwards a cavity, which obliterating

nearly every trace of alveolus, has ascended the inner side of the coronoid process. The tip and a great part of this process has been broken away, but sufficient remains to show that it was during adult life strong and powerful, extending well forward in front of an imaginary vertical line drawn from the posterior edge of the third molar tooth. Concomitant with the alveolar absorption, and the other traces of age, bony deposit has extended across the sigmoid notch, rendering that depression even more shallow than it would appear from the evident slenderness of the condyle, which also has been broken away. The depressions for the attachment of muscles are well marked, especially that for the *masseter*, which is so well developed, that the external angular process, for the attachment of that muscle, is prominently developed outwards and upwards into a tuberculous elevation of bony matter.

Turning to the inner side of the jaw, we find that the same conditions prevail. The inferior dental foramen is deep; its attendant mylohyoid groove well marked. The asperity for the attachment of the entopterygoid muscle is well marked, without however producing anything approaching to that inflexion of the inner margin, which forms so striking a feature in the jaw from Moulin-Quignon. In fact, all the curvature of the jaw in this part brings the most salient portion of the inferior margin outwards, not inwards, in such manner as to make the convex surface be inwards, the concave outwards, this conformation being produced by the great depression for the masseter muscle, and elevation of the angle. The obliquity of the ramus, which would otherwise have been very great, is thus by the minor development of the pterygoid process, compared with the same part in the Moulin-Quignon jaw, reduced to a great extent. I append a few measurements of the jaw.

	Ins.
Length of mandible, from tuber maxillare, to angle.....	3.6
Height of ascending ramus (tips of condyle and coronoid being broken away)	2.45
Length of dental series from mesial incisive line to posterior edge of second premolar	1.25
Distance from mental foramen to mesial incisive line	1.12
Height of jaw between front incisors	1.5
Ditto at presumed spot of second molar.....	0.8

5. Four fragments of cranial bones. The conditions under which the above bones seem to have been deposited are, according to my interpretation, that they have lain loosely on the floor of the cave, where they have become coated with small portions of stalagmite, without being imbedded in that substance. On comparison of their mineral conditions with those of the remains of *Felis spelæa*, *Ursus spelæus*, *Hyæna spelæa*, and the other animals so commonly found under the stalagmite in the same locality, I have been struck with the entire dissimilarity which prevails. Although very little animal substance remains in the human remains, yet on comparing them with those of *Hyæna* from the same cave, the characteristically red infiltration is present on both.

The conclusion I wish to draw is, that no high antiquity can be

assigned to the remains I have just described; I nevertheless have felt bound to investigate them, as the occurrence of human remains, with the frequently described works of art from the same locality, would be of the highest interest, should any such hereafter be discovered.

Mr. ROBERTS said, that about four years ago the sum of £450 was granted by the Royal Society for the complete examination and clearing out of Kent's Hole, and a committee was appointed for the purpose; but owing to the gentlemen who composed it residing so far from the spot, and to other circumstances, they did not do much towards the accomplishment of the desired object. The chief thing they did was to discover about twenty flint implements in the mud of the cave, the whole of which were in his possession. He was afraid that nothing else was done by that committee; but he thought it very desirable that the cave which contained so many interesting objects should be cleared out, and that all the bones and flint implements, and other objects associated with them, should be collected and properly arranged.

On Human Remains from a Bone Cave in Brazil. By C. CARTER BLAKE, F.G.S., F.A.S.L., Foreign Associate of the Anthropological Society of Paris.

IN the British Museum there exist some human remains purchased with the Claussen collection, and forming part of the series of specimens which were discovered by Lund and Claussen in their investigations in Eastern Brazil.

Mr. W. Davies having kindly drawn my attention to them, I will give a short list of the specimens, without wishing to draw any further conclusion than that they probably belong to a period of great historical antiquity, although probably not coeval with the fossil fauna which Lund has described in the *Transactions* of various northern academies.

1. Skull of young child. This skull is brachycephalic and asymmetrical, the right side being shorter than the left. There are evident traces of "parietooccipital" flattening, which has extended above the lambdoid and for a well defined space on either side of the sagittal suture. None of the sutures are complex. Flattening on the left side of the frontal bone is manifest, indicating the direction in which the compressing force has been exercised throughout life. No other abnormal development is visible. The molar and premolar teeth in place show little signs of erosion. The basioccipito-sphenoid suture having been present, the basioccipital bone has been broken away, as well as the right border of the foramen magnum and the right squamosal bone. The maxilla is slightly prognathic. The skull presents the most similarity to the skulls from Cañete, in Peru, described by Castelnau, and to some which I have seen from the uplands of the Argentine provinces, near Rosario.

2. Broken maxillary (adult?) left side. The first premolar, as well as the broken fragment of the second premolar, are the only teeth which remain. Slight erosion is visible on the crown of the first tooth.

3. Lower mandible, left ramus. Thickly incrustated with limonite and sand, which has filled up the alveoli. Only the first and second molars are in place, the second being turned out of its proper insertion, as well as the first being much worn. Both the molar teeth in place are much worn on the outer side of the teeth. All the other teeth, with the exception of the first premolar, are absent. No marked outward or inward inflection of the angle is present.

4. Lower mandible, left ramus. This specimen exhibits the same general characters as No. 3, with the exception that the incrustation of limonite is not present. On the inner sides of *m.* 3 and *m.* 2, the upper angles of the cusps have been broken away, the whole surface of the teeth being much worn. *M.* 1 is much worn, and a small fracture of the alveolar process outside it has permitted that the two outer fangs to be elevated and dislocated from their own proper insertions, and to form by this dislocation a grinding surface. The first and second premolars, as well as the canine and first incisor, are also much worn. The mental process of the jaw is high; the genial tubercles distinct; and the mental foramen, not as in No. 3, filled up with limonite. The coronoid process is high; and, although the angle is broken away, enough remains to lead us to conjecture that it was strong and powerful.

5. Portions of parietal bones of average thickness, incrustated with ochreous mud.

6. Upper part of supraoccipital bone, and lower and posterior portions of two parietals, exhibiting the confluence of the sagittal and lambdoid sutures. The supraoccipital bone is slightly elevated above the level of the lambdoid suture, which, as well as the sagittal, is very complex. There are no traces of wormian ossifications; and on the inner side of the bone the sutures are perfectly closed.

7. Broken glabella and fragments of nasals, as well as a piece of the supraciliary arch of a young individual; frontal sinuses small.

8. Distal portion and shaft of humerus, gnawn by mice and by some larger rodent; thickly permeated by limonite.

9. Distal portion and shaft of humerus; young or small individual; no marks of teeth.

10. Proximal end of tibia, very young individual, wanting epiphyses; slightly gnawn by rodents.

11. Shaft of femur; much gnawn by rodents.

12. Proximal end of femur, including head and neck, and part of shaft, of young individual; gnawn by mice (*Hesperomys*).

13. Distal end of femur, exhibiting frequent marks of the teeth of some rodent, probably one of the small mice (*Hesperomys*) of the caves, slightly infiltrated with ochreous mud, and with much of the animal matter absent.

14. Tibia, long fragment of shaft; few traces of rodent action.

The following three specimens are in the same condition as the fragments of the lower jaw, No. 3, above alluded to.

15. Long bone (small humerus?) imbedded in limonite, which contains many fragments of fossil shells, exceedingly difficult of identification. A specimen of *Planorbis* (of which fresh-water type four

existing species in Brazil are recorded by Mr. S. P. Woodward in his *Manual of Mollusca*) is recognisable, as well as the broken fragments of an elongated land-snail, probably *Bulimus*.

16. Sections of three long bones, covered with sandy deposit containing large quantities of oxide of iron (limonite); the medullary cavity of the bones being filled with crystals of carbonate of lime.

17. Distal end of femur, thickly encrusted with limonite, the animal matter being absent

18. Head of humerus, covered with limonite.

Mr. ROBERTS stated, that he had received a letter from a friend who had been inspecting the works now going on in the isle of Portland for the purpose of national defence, who stated that several ancient cists had been discovered there. In one of them was a skeleton buried in a sitting posture; and in the same cist were the bones of a dog, some bones of a deer, twenty-three flint flakes, and a quantity of charcoal. His friend said he hoped to obtain them, and send them to the Society. This was, he believed, the best known instance of the discovery of the skeleton of one of the ancient hunters of this country buried with his dog, his implements of chase, and with some meal for his support, in the manner now practised by the North-American Indians.

Mr. C. CARTER BLAKE regretted that the specimens were thrown together in such a manner, that there was no positive evidence of the association of the human remains with those of the ancient fossil rodents, etc., described by Messrs. Lund and Claussen as having been found in other bone caves in Brazil. These remains were, no doubt, very ancient, but there was no positive evidence that they were of the same age as the fossil fauna; and in absence of further evidence, it would be rash to hazard a conjecture respecting them. In reference to the evidence of great antiquity afforded by the human remains found in bone caves, there was a great principle involved in the question whether those remains were found below or above the stalagmite of the caves. It was owing to the suggestion and assistance of Mr. Davies, that he had been enabled to lay the facts before the meeting. In the cave at Brixham, there were discovered flint implements mingled with the bones of extinct animals; but in Kent's Hole human remains were discovered; and it was most important to ascertain whether they belonged to the same period as the extinct animals. Unfortunately, no distinct evidence could be obtained respecting the exact positions in which the bones were found, as they had been purchased from dealers. It was the first instance of human remains having been discovered in Kent's Hole, and they were encrusted with stalagmite, which might have proved their great antiquity. He hoped the members present would not be silent when such important evidence was laid before them.

The CHAIRMAN (Mr. G. Witt) observed, that the papers which had been read, though very interesting, were not, perhaps, calculated to produce much discussion. They would be very valuable when recorded in the Journal of the Society.

The meeting then adjourned to the 14th inst.

TUESDAY, JUNE 14TH, 1864.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

THE minutes of the previous meeting were read and confirmed.

The names of the Fellows elected since the last meeting were read as under—Sir John Benn Walsh, Bart., M.P.; John Ashbury, Esq.; William Smith, Esq.; Charles Tuckett, jun., Esq.; H. Driver, Esq.; F. Fearon, Esq.; S. Smith Travers, Esq.; O. F. Waterfield, Esq.; John Mortimer, Esq.; The Rev. S. Beal, Chaplain Royal Maine Artillery; Edward Peacock, Esq., F.S.A.; A. Norman Tate, Esq., F.C.S.; J. B. Mirrlees, Esq.

Local Secretaries—Richard Lee, Esq., F.A.S.L., Bradford; George T. Hine, Esq., Brisbane, Queensland; Charles Linder, Esq., Labrador; Commander Bedford Pim, R.N., Nicaragua.

Mr. HIGGINS also announced the deaths of Professor Waitz, and of Professor Rudolph Wagner, who were Hon. Fellows of the Society.

The PRESIDENT stated that the Council had that day unanimously elected Mr. Charles Carter Blake, F.G.S., as Curator, Librarian, and Assistant-Secretary of the Society.

Mr. HIGGINS then read the following communication from Dr. Paul Broca, who had contributed to the Society's museum six casts of the skulls referred to in his paper.

To the President of the Anthropological Society of London.

Paris, May 20th, 1864.

Mr. PRESIDENT,—I beg you will be so good as to offer in my name to the Society over which you preside six plaster casts, representing, 1. Three Basque crania obtained from the cemetery of Z—(Guipuscoa). 2. Three crania from the grave in the cavern of Orrouy (Bronze age). I hope that the Anthropological Society of London will be good enough to accept this present as some evidence of my gratitude for the favours which it has heaped upon me. I feel called upon to add some information respecting these crania. Their history will be found in the *Bulletins* of the Paris Anthropological Society; viz., that of the Basque crania, vol. iii, p. 503 to 579, and vol. iv, p. 33 to 72; and that of the crania from Orrouy, vol. iv, p. 510, 512, and vol. v, p. 56.

The three specimens which I have chosen from the sixty Basque crania which I have deposited in our museum, represent the two cranial types of the Basques of the village of Z—. No. 24 is the most brachycephalic of the series; this form is entirely exceptional; of the sixty crania, the cephalic index of which is between 80 and 81 per cent., five of which the index is between 81 and 82 per cent., one between 82 and 83 per cent., and lastly one the index

of which amounts to 83; it is the latter which bears the number 24, and of which I send you a cast. In order to comprehend the bearing of this fact, it will suffice to remember that amongst the three hundred and eighty-four Parisian skulls in our museum, there are eighty-two of which the index is comprised between 80 and 83, and seventy-four between 83 and 92. If we make use of the division which I established three years ago (*Bulletins*, vol. ii, p. 507), we perceive that there is not one truly brachycephalous skull amongst the sixty derived from Z—, the truly brachycephali being those of which the index exceeds 85. The twelve skulls of which the index is comprised between 80 and 83 are merely sub-brachycephali, if we employ the division which I originated and published more than a year before we possessed Basque skulls. Amongst the sixty skulls from Z—, there are only two which sufficiently approach to the brachycephalous form to be considered as brachycephali.

The two other Basque skulls which I send you are Nos. 21 and 39, representing the dolichocephalous type, which considerably predominates in the population of Z—. These are not the most dolichocephalic of the series; their index is about 74, and there are some of which the index is so low as 71. But I have chosen these two skulls, because they represented the most common type. Amongst our sixty crania, there are at least thirty which resemble them considerably.

If I may be allowed to express a wish, I should ask you to indicate on the labels of these Basque skulls that No. 24 presents a brachycephalic form entirely exceptional amongst the inhabitants of Z—. Those who visit your museum should on no account be led to believe that the population of Z— comprises one brachycephale in every three individuals, whereas in reality the proportion is that of one to thirty.

I have not been able to select as I could have wished the specimens of skulls from the sepulchral cave of Orrouy (Bronze age). Many of these skulls, which I should have chosen in preference, are sufficiently complete to be measured, but not sufficiently so to be cast from. Those which could be more or less measured number sixteen, and there are five others which are too incomplete to be exactly measured. Amongst these twenty-six skulls, there are three true dolichocephali, of which the index is confined between 71 and 75; two subdolichocephali, between 75 and 77·7; four mesaticephali, between 77·7 and 80; five subbrachycephali, between 80 and 85; and finally, two true brachycephali, of which the index is 85 or beyond.

No. 4, which I send you, is mesaticephalic, 79·7; No. 8 is sub-brachycephalic, 81·5; finally, No. 11 is brachycephalic, 85·3 per cent.

The dolichocephalic crania have not been cast, and the same is the case with the most brachycephalic skull of the series, of which the index is so much as 87.

I shall call your attention to No. 8, which presents the most common form in the Orrouy sepulchre. This skull, unfortunately deprived of the facial bones, is remarkable for the smallness of the forehead, for the enormous development of the parietal regions, and above all for

the considerable flattening which exists on each side on the level of the temporo-parietal suture. When this singular form is examined, the first idea which arises in the mind is, that it was due to pathological causes; but it is reproduced in eight of the Orrouy skulls; there is even one skull in which it is more distinguishable than it is in No. 8. This lateral flattening does not appear to me to be due to artificial deformation, as it coincides with a number of characters, and especially with the narrowness of the forehead, which evidently appears not to have been caused by a pressure exercised on the posterior portions of the head. I do not venture, however, to allege that it is a race character, but if it is not a race character, it is certainly one peculiar to a family, and transmitted hereditarily during some generations. What leads me to incline towards this hypothesis, is that, in the Orrouy grave, there were to be found a large number of humeri pierced through at the fossa of the olecranon. Unfortunately, the complete humeri alone have been preserved; they number thirty-two, and eight of these are naturally pierced with a large foramen. This perforation is very rare in the existing or past races of Europe. I have only found it five times amongst more than a thousand humeri, which I have extracted, with the assistance of M. de Roucy, from the large Merovingian sepulture of Chelles (Oise). Mr. Barnard Davis writes to me that he has not observed it in any humerus from the stone or bronze periods which he has examined at my request in one of the richest collections in England. It only exists in two of the humeri of the stone age, which I have extracted from the long barrow of Chamant (Oise), and which number about fifty; I, however, entertain doubts as to one of these humeri, in which the hole is not perfectly regular. The proportion of eight perforated humeri amongst the thirty-two from Orrouy is consequently most extraordinary; but, up to the present time, nothing sanctions the supposition that this is a character of one of the ancient races of Gaul; it is exceedingly probable that it was a character or perhaps an abnormality which had become hereditary in a family, or in a small tribe, similar to the premature bifurcation of the humeral artery in a little German village, referred to by Tiedemann. And if this is the case, the supposition is not unwarrantable that this singular form, which is so frequent amongst the Orrouy skulls, is also a family character.

I have written with a pen on each of the six skulls their internal capacity, expressed in cubic centimetres. The other measures can be taken on the plaster moulds; and I shall here offer to you a general remark on this subject.

The plaster casts swell in volume as they harden, and this is the reason why moulders are accustomed to bind round their matrix with many twists of firm rope. It is probable that if they wait some days before they withdraw the mould from the matrix dilatation will not be produced. But, to gain time, they remove the mould before it is sufficiently solid to resist, and dilatation consequently takes place, as it is not obviated by the application of external pressure. It results that, in all the casts which I was able to compare with the originals, the principal diameters are augmented about two millimetres; the

horizontal circumference is augmented to six, or even to eight or ten millimètres, and the others in proportion. That which is most inconvenient is the fact that the amplitude of this dilatation is not uniform. It varies according to the more or less fineness of the plaster, according to its degree of purity, according as to whether it is soaked to a greater or less extent in water; secondly, according to whether the mould is hollow or empty, and whether the bed of plaster is more or less thick. This cause of error, which is already very considerable, is further aggravated when we recast from the first mould in such a manner, that if we take many successive castings, as are made when exchanges take place from one museum to another, the volume and even the form of the skulls can be considerably modified; I say the form, because it is improbable that dilatation could be absolutely regular in every sense.

I have thought it right to add to the casts which I send you a table of the principal measures taken on the actual skull. I propose to take this step every time I shall have to send casts either to you or to other museums. And I shall take the liberty of calling the attention of craniologists to this point. It appears to me that in future it will be right to adopt as a rule the practice of sending tables of measurements with casts. It will not be necessary to give in these tables all the measures. It will be sufficient to take the principal diameters and the longest curves. They will enable those who examine the casts to obtain afterwards proportional reductions of the exact value of the other measures.

There are seven measures on the table. 1. *The maximum antero-posterior diameter*, from the glabellar eminence to the most receding part of the *squama occipitis*. 2. *The maximum transverse diameter*, taken from the point which gives the greatest divarication between the compass-points. This point may be on the parietal, on the temporal, or on the lower or posterior angle of the parietal. 3. *The minimum frontal diameter*, taken at the lower part of the frontal bone, above the external orbital processes. 4. *The basilo-bregmatic diameter*, measured by placing one of the compass-points on the centre of the anterior border of the occipital foramen, and the other extremity on the bregma, *i. e.*, on the median point of the coronal suture. 5. *The great median occipito-frontal curve*, measured from the root of the nose (naso-frontal suture) to the posterior border of the foramen magnum, passing by the bregma, the sagittal suture, and the external occipital protuberance. 6. *The maximum horizontal circumference*, representing the greatest capacity of the hat. 7. *The bi-auricular transverse circumference*, measured with the aid of a tape, which passes transversely under the *basis cranii* which passes next on each side opposite the *meatus auditorius externus*, and which then passes over the bregma.

I have thought it right, M. le Président, to submit to you these various explanations to assure you of the exactitude of the cranio-metrical observation which can be made on the casts I send to the Anthropological Society of London. The details into which I have entered have perhaps the fault of being too long and too minute.

Perhaps you will excuse this when you remember that the questions which I have suggested do not merely concern the present skulls, and will arise every time that exchanges of casts take place between our two societies or between any two museums.

Receive, M. le Président, the expression of my devoted and respectful sentiments.
 (Signed) P. BROCA.

Dimensions of six cranial casts sent by M. Broca to the Anthropological Society of London compared with the dimensions of the original skulls.

The measurements are expressed in millimeters.	BASQUE CRANIA FROM Z—						CRANIA FROM ORBOUY.					
	No. 21.		No. 21.		No. 39.		No. 4.		No. 8.		No. 11.	
	Skull.	Cast.	Skull.	Cast.	Skull.	Cast.	Skull.	Cast.	Skull.	Cast.	Skull.	Cast.
Maximum antero-posterior diameter	183	186	191	193	187	189	168	170	184	186	170	173
Maximum transverse diameter - - -	153	155	142	144	137	138	134	136	150	151	145	146
Maximum frontal diameter - - -	101	103	95	96	94	96	90	91	88	89	98	99
Basilo-bregmatic diameter - - -	124	126	127	129	123	125	123	125	138	140	134	135
Great median occipito-frontal curve	369	374	376	382	370	375	346	350	380	384	358	362
Maximum horizontal circumference	539	545	527	535	527	533	487	491	533	539	500	507
Transverse bi-auricular circumference - - -	450	458	432	439	422	428	410	415	457	462	445	448
<i>Cephalic Index</i> : the antero-posterior diameter being 100, the transverse diameter = -	83.60		74.14		73.90		79.76		81.52		85.29	

The PRESIDENT said he had heard the communication from Dr. Broca with much satisfaction. That gentleman was the heart and soul of the Anthropological Society of Paris; and he hailed the paper with great pleasure, coming from such a source. The Basque skulls of which he had sent casts to the Society, were collected by Dr. Broca with great difficulty, and at the risk of the life of his friends; and these were reasons why he did not wish the place from which they had been obtained to be known. He had also incurred considerable expense in forwarding the casts to the Society, and they would form a valuable addition to their museum. The President hoped the meeting would return their hearty thanks to Dr. Broca for his contributions, and he trusted they would not be the last they should receive from him.

The thanks of the meeting were then unanimously given to Dr. Broca.

Mr. C. CARTER BLAKE remarked on the casts contributed by Dr. Broca that they were of two kinds, indicating different characteristics. The Basque skulls shewed that that people, instead of having, as had been sometimes described, beetling brows, and being otherwise allied to the skulls of the stone period in Denmark, and with affinity to the Laps and Fins, comprised individuals who were not different in any important respects from the skulls of the ancient, and, indeed, of the existing Celts. It was important to observe that, while the Basques, as a people, differ greatly in language and other characters from other nations, their skulls do not differ from those of many other persons of France and Spain, and the skulls of which the casts were on the table might, indeed, have been derived from an English grave-yard. But the skulls from the bone cave of Orrouy were very different. They belonged to an analogous series of skulls to that which had been derived from the peat beds and river beds in various parts of England. Similar skulls had been found under fifteen feet of gravel at Eastham, near the river Lea; they had been found at Battersea, in the bed of the Thames, in Cornwall, and in other places. They all agreed in many well defined characters. The crania of these river-beds differ in some respects. Further investigations were yet required into the characteristics of these river-bed skulls, and the time had not yet come when their characters could be definitely laid before the Society. No satisfactory generalisation could yet be arrived at to determine whether they belonged to the stone, the bronze, or to the iron period.

Mr. HIGGINS asked Mr. Carter Blake whether he agreed in opinion that the skulls derived from this bone cave represent a family character, and whether the olecranial perforation had been ever observed in river-bed skeletons?

Mr. C. CARTER BLAKE, in reply, observed, that he feared there was a poor story to be told about the skeletons from the river-beds. In these instances there was nothing like the perforation of the olecranial fossa. He agreed that the same character was probably common to the people or family who had inhabited the cave and buried their relatives there. With respect to the perforation alluded to, he did not think it so rare as Dr. Broca appeared to do. In a publication by M. Hollard, about five years ago, many similar instances were noted, and many similar ones had been found by Mr. Blake himself. It had been thought that the perforation repeated a character that existed in the lower animals, but there was no tendency to perforation of the humerus in the animals most closely allied to man.

The following paper was then read:—

The Negro in relation to Civilised Society. By S. E. B. BOUVERIE
PUSEY, Esq., F.A.S.L., F.E.S.

THE paper I purpose to read is intended to establish the proposition, that the negro (in whatever other respect he may, or may not, differ from the white man) does at any rate resemble him in this, that the only state in which he can attain his full development is one of freedom, as opposed to slavery; and by slavery, I do not mean only that condition called chattel slavery, in which the bondsman has no rights. This (as has been well observed before in this room) exists in a pure form only in Africa.

All the slave codes in existence amongst nations having any claim to civilisation, attempt to confer rights on the slave, though the extent of these rights, and the means by which they are to be enforced, are in most cases miserably inadequate. However, I am not here to discuss the merits of particular slave codes, but to compare slavery at its best with freedom in a civilised country, as applied to the negro.

By slavery, I mean any condition in which an adult is placed (without reference to his own will), at the disposal of another. The abolitionists of slavery feel that they are espousing the generous side of the question; they feel that it is æsthetically to be desired that beings so like ourselves as the negroes are, should also, like ourselves, be best in freedom. But the question is not to be decided on any such grounds.

I have no intention of entering here, unless incidentally, on the problem how far the intelligence of the negro may extend, further than that it is such as to qualify him for personal freedom. I shall not discuss, *e. g.*, whether the negro race is likely to produce men of genius, or is capable of founding by itself a society possessing European civilisation, or, as was suggested in a paper read before this Society, of evolving a peculiar civilisation of its own. I intend to lay before the Society this evening the grounds on which I have been led to believe that the negro possesses sufficient intelligence and industry to qualify him for the place of a freeman in a civilised community.

I shall consider :

1. The condition of the negroes in the British West Indies.
2. Their condition in slave countries (the West Indies prior to emancipation included).
3. The condition they have attained in parts of Africa.

It may be said that no man ought to be a slave who is not incapable of providing for himself and his family by voluntary industry. Let us examine by this standard the capabilities of the negro, beginning with the West Indies, because that is the quarter where the question has been most perplexed by contradictory assertions. The authorities on which I shall principally rely in relation to this matter are: *The Ordeal of Free Labour in the British West Indies*, by Wm. S. Sewell; and *The West Indies, their Social and Religious Condition*, by Edward Bean Underhill. The former writer is a Canadian, resident in New York; who travelled in the West Indies towards the end of 1859 and in the beginning of 1860, and published his work

originally in a series of letters to the *New York Times*. The book contains internal evidence of care, impartiality, and desire to get evidence from all sides. It derives additional authentication from the fact of having been reviewed, on the whole favourably, in the *Edinburgh Review* (January 1862), by a writer obviously an old resident in the West Indies, and by no means unfavourable to the planting interest.

Underhill was a Baptist missionary, who travelled in the West Indies at the request of the treasurer and committee of the Baptist Missionary Society, with the object chiefly of investigating the religious condition of the numerous Baptist churches in the West Indies, especially as that condition has been affected by the Act of Emancipation. I am perfectly aware how strong a presumption there is that a man with these objects would not write an accurate, much less an impartial, work. But I am confident that anyone who attentively, and with an unbiassed mind, reads the book, will be convinced that the work is not only accurate and impartial in the ordinary sense, but written with rare judicial care and fairness. Neither of these writers can be classed with what are called "Negrophilists" and "The Black Party," and neither shows the least tendency to introduce any kind of maudlin sentimentality into his treatment of the subject.

I will try to condense the results I have arrived at from these authorities, as to the condition of the negro in each of the British West Indian Islands, beginning with Barbadoes.

It is admitted even by Trollope, who may be regarded as the great authority of the anti-Negro party, that Barbadoes has not suffered since emancipation. In fact, we find (Sewell, page 62) that the average of sugar exportation from 1720 to 1800 was 23,000 hogsheads per annum; from 1800 to 1830, 20,000 hogsheads; showing a decline under slavery of 3,000 hogsheads: a decline attributed by some to the embarrassments of the planters, and by others to the cessation of the African slave trade. "Let us now look," says Sewell, "at the Barbadoes sugar exportations of the present day, premising with the observation, that from 1826 to 1830, the average weight of a hogshead of sugar was 12 cwt.; from 1830 to 1850, 14 cwt.; and is now from 15 to 16, or even 17 cwt. With this difference of weight *against* her, Barbadoes exported in 1852, 48,610 hogsheads; in 1853, 38,316; in 1854, 44,492; in 1855, 39,692; in 1856, 43,552; in 1857, 38,858; in 1858, 50,778, or nearly double what she exported during the most favourable year of slavery."* Sewell then passes in review the whole of the exports and imports of Barbadoes with similar results.

It may be asked whether any light can be thrown on the causes of this extraordinary prosperity of the sugar planters of Barbadoes, as compared with those of the other West Indian Islands. We must remember that in Barbadoes the land is as densely peopled as in the old countries of Europe (800 persons to the square mile), and that, therefore, the employer has the command of the labour market. This fact seems to offer a clue to the West Indian enigma, by suggesting

* This was written in 1859, and the export of 1858 was therefore the last to which the author could refer.

that the phenomena of the West Indian labour market depend, not so much on the characteristics of race, as on the most obvious laws of political economy. We all know that in a new country it is one of the greatest difficulties to obtain steady and continuous labour; for as soon as the labourer amasses a little money, he establishes himself as a small proprietor. Now in the United States, and in our own colonies, the vacuum thus created is perpetually being filled up by a fresh stream of immigration from Europe; but in the West Indies (as the white man either cannot live and work there, or thinks that he cannot, and therefore does not come), and the black cannot now be brought, this vacuum remains unfilled, except partially by Coolie immigration from India and China. This cause would alone be amply sufficient (even if there were no other) for what is commonly called the ruin of the West Indies, *i. e.*, the ruin of their principal planters, and the enormous diminution of their sugar and coffee exports. But we shall find there are many additional reasons which would contribute to that result, equally independent of ethnological considerations. These I shall consider by and bye.

In the small island of St. Lucia also, we find that the sugar exportation amounted, in 1867, to 6,261,875 lbs. against an average yearly export of from three to four millions prior to emancipation. And the exportation of cocoa during 1867 was 251,347 lbs. against 91,280 lbs. in former times. In this island the metairie system prevails, under which the landlord and tenants are partners both in the expenses and in the profits of cultivation. (Sewell, p. 93.) This instance of St. Lucia would seem to show that liberality and flexibility on the part of the owners of the estates may produce the same beneficial results to them as density of population.

Having spoken now of the only two islands on which the planters have not suffered, let us examine if there are any causes, unconnected with negro character, which would account for their misfortunes in the other islands. We shall find, on investigation, that the West Indian planters (as a body) were generous indeed, and hospitable, but violent, wrong-headed, unbusiness-like, and devoid of any flexibility in adapting themselves to circumstances, to a degree which has seldom been equalled.

1. They were nearly all non-resident, frequently understood little of the West Indies, and their cultivation; and were, therefore, in the hands of agents who had to be paid large salaries, and lay obviously under great temptations.

2. The business of sugar cultivation is one of a highly speculative character.

3. They were commonly extravagant.

4. As the natural result of these causes combined, they were mostly in debt.

5. Having begun with a system of slavery (unparalleled in its destructiveness to human life, except in Cuba) they strenuously resisted, and considered as intolerable oppression any attempt to extend the protection of the law to their slaves.

6. On the verge of emancipation, with the black population ex-

ceeding them in number as five to one, ready to break into insurrection at any moment, they had the insanity to meet the measures of the home government with words and acts bordering on high treason.

7. After emancipation they showed themselves totally ignorant of the nature of a contract. They said, and published to the world, that it was a great crime in the negroes not to work for a "fair" rate of remuneration, as if any man had not a right to stick out for as much wages as he could get.

8. All the results of these their faults were aggravated by the injustice done them in assigning them a compensation amounting only to about two-thirds of the real value of their slaves; we may conclude then, that the ruin of most of the planters is satisfactorily accounted for, without taking into account any differences there may be between the negro and the white man. In fact, if the negro had been as industrious as the Anglo-Saxon, they would certainly have been ruined a great deal faster, for he would more speedily and universally have passed from the condition of a labourer to that of a peasant proprietor or farmer.

As it is certain that in all the islands, except the two I have mentioned, the negro does not readily work for the planter, it becomes a question what does he do? Does he spend his time in idleness, or does he work for himself? This question can be sufficiently answered, chiefly from the authorities I have already mentioned. 1. A considerable number of them work steadily on the roads and in the mines. Sewell states (p. 284), "I sought information from the Chief Commissioner of Roads, who has 3,000 men under constant employment, and he assured me that they worked diligently for five days in the week, going to market after their custom on the sixth, or devoting it to the cultivation of their own grounds. He had no complaints to make of idleness, and instead of there being a deficiency of hands, he could obtain an additional thousand at any time he chose. The men, he said, preferred breaking stones on the road to estate labour, though the former was much the severer work of the two. I inquired further of the superintendent of the Rio Grande copper mines in the parish of Portland, an intelligent, practical, energetic Englishman, who, for eight years, has had a large body of men under his command. He told me that at first the planters ridiculed his idea of getting labour; nevertheless, in all his experience, he has not known what it was to want labour. If he stood in need of five men, fifteen or twenty would apply. These men worked eight hours a day, and for six days in the week; and though some of them had been in the superintendent's employ five or six years, he never had occasion to complain of their idleness."

The overseers on the roads explained to Sewell (page 194) that, in their opinion, the reason why the negroes would not work for the planters and would work for them, was that they paid their wages regularly every week, whilst the planters were generally in arrear, and frequently altogether defaulting.

The prosperity of the negro peasant proprietor in the parish of St. Ann, Jamaica, is shewn in the following passage of Sewell (p. 195):

1. "The district through which I have been travelling is composed entirely of pasture land. All the settlers own a horse and stock of some kind. Their cottages are very neat and tidy, and are shrouded with cocoas and plaintains."

2. It appears by the latest returns (?) that, out of 187,000 negroes engaged in agriculture, there are 50,000 proprietors, of whom all, except a few, have become such by their own unaided efforts.

3. These proprietors seem to own from one or two to five acres. Their labour as proprietors, and not slaves, has materially altered the nature of the industry of the country. I think you will perceive, from the following figures, that the fact is not that the industry of Jamaica has ceased or has been materially diminished, but has been diverted into other channels, which contribute to the prosperity of the negro proprietor, and not to that of the planter.

For instance, in the year 1841, there were exported of coffee 6,433,370 lbs.; and in 1858, 5,237,689 lbs., nearly a million less. But of pimenta, in 1841, there were exported 3,595,380 lbs.; and in 1858, 9,465,261 lbs., *i. e.*, more than six millions more. There is besides, now, a considerable yearly exportation of arrow-root, bees'-wax, honey, cocoa-nuts, and other things, of which there was no exportation whatever so lately as 1841. And what is not less instructive, the importation of all the principal necessaries of life, of flour, bread, meal, corn, and pork, has most materially diminished.

What I have said of Jamaica applies equally to the other British West Indian islands. The change that has taken place in them is admirably expressed in the outset of a petition by the planters of Antigua to the home government for coolie emigration. They say (Sewell, 152), "We regard the withdrawal of a large number of the labouring population from the estates, either to engage in the cultivation of land purchased by themselves or to embark successfully in other avocations of life, as the natural consequence of an improved material condition, of the free and equal administration of the law, and of the facilities largely enjoyed for civil and religious instruction. But, while we acknowledge and sympathise with this abstraction, it is clear that a deficiency has been thus created in the supply of manual labour to an extent which is not to be compensated, either by increased skill, by implemental husbandry, or by the application of extended capital."

All these facts will be found fully confirmed in the more detailed account of Underhill; and the whole state of the case cannot be better given than in the words of the lieutenant-governor of Granada to the home government (Colonial Report for 1857, presented 9th August, 1859), page 81: "The growing independence of the native labourer, and his consequent secession from work on the estates, will soon create a void in the labour market which will render a stream of immigration necessary to keep up the cultivation of the staple product of the island. It is generally admitted that the African makes the most efficient labourer; but if he is not to be obtained, the Indian appears to be well qualified to take the place of the creole. It is a remarkable fact, alluded to by Mr. Cockburn, that, so far from the immigrant being regarded by the native labourer with jealousy, he is rather

viewed as one of the means destined to emancipate the latter from the necessity of offering his services for hire, and to enable him to become a cultivator of the soil for his own especial benefit. A proprietary body of considerable magnitude and importance has already risen from the labouring class, and several of its members are possessed of sufficient means to carry on beneficially agricultural pursuits."

The next point I shall endeavour to shew is that the negro, when a slave, works better in proportion as he is treated like a freeman; and that, in those slave countries in which he is not borne down by an overwhelming load of prejudice, he is able to hold a position alongside of his fellow men with credit to himself.

First I shall quote the important testimony of Frederic Law Olmsted, with respect to the slaves of North Carolina (*Journeys and Explorations in the Cotton Kingdom*. London, 1861, pages 146 and 151, vol. i.)

In the great dismal swamp, where Negro slaves are employed without driving, and under the stimulus of wages, Olmsted says, "They are more sprightly and straightforward in their manners and conversation than any field hand plantation negroes that I saw at the south. Two or three of their employers with whom I conversed spoke well of them as compared with other slaves, and made no complaints of rascality or laziness."

In the sounds and inlets of the North Carolina coast, where large shad and herring fisheries are carried on, many stumps of trees, standing where they grew, but now, on account of subsidence of the coast, submerged some way below the water, have to be removed from the fishing ground, on account of the injury they would do to the nets. All the more firmly fixed of these stumps have to be blasted, and negro divers are employed to charge with gunpowder cavities made in them, by driving a sort of long spear from a boat moored over the spot. Olmsted's informant employed several divers, all of them negroes. He thought he had removed over one thousand stumps, and used seventy kegs of powder. All the divers were skilful. Unusual skill or hardihood is rewarded with whiskey or (as while diving they are generally given as much whiskey as they want) with money. Each of them would, in this way, earn from a quarter of a dollar to half a dollar a day above the wages. "On this account," said Olmsted's informant, "the harder you put them to work the better they like it. They frequently had intermittent fever, but would rarely let it keep them out of their boats." Olmsted remarks how surprising this picture of slaves must appear, and accounts for it when he says "they are treated as freemen."

That this also held in the British West Indies under slavery is shewn by the evidence before a select committee of the House of Commons on Extinction of Slavery, held in the year 1832 (Report of Parliamentary Blue Book, 1832, p. 301, No. 4428, *et seq.*).

Captain Charles Handen Williams was examined before this commission: He had formed an opinion from visiting the West Indies, that the condition of slavery was a happier condition than that of peasants elsewhere living in freedom. He thought slavery so much

better than the condition of English peasants, that there could be no comparison between them. Clearly, therefore, Captain Williams had no anti-slavery views in any opinion he expressed on the character of blacks. The slaves of Jamaica, he says, supply all the markets in the West Indies. They get six dollars a dozen for chickens, and supply also pigs and vegetables. They furnish large quantities to Kingston market. Some of them will have thirty dollars' worth of poultry and provisions at Kingston market in a morning. They rear them mostly on estates eight or ten miles from the town, either on their own little grounds, or on ground hired from their master, if they want to raise more than their own little grounds will produce. All is raised by their own voluntary labour. They sometimes buy their freedom in this way. An industrious slave, living within six or eight miles of Kingston, will buy his freedom in ten years. Some have luxuries in their houses, bought by the sale of their poultry and pigs.

Robert Scott was examined before the same commission. He had been a proprietor in the island of Jamaica, resident there from 1802 to 1806, and afterwards a few months in 1828 and 1829. He states that the drivers on the estates are selected, not for physical strength, but for good character, and for being men in whom confidence can be placed. The drivers are looked up to by the negroes. They are nearly all blacks and old infirm men (Mr. Scott continues); he has known drivers, and the best drivers. The slaves, he says, are better off than English people think. They get considerable sums by the sale of their poultry and hogs. Many of the field negroes do this. All have pigs and poultry, and, in some instances, cattle. Their industry is increased by the acquisition of property. "A slave with a good deal of property is the best and most easily managed."

James Beckford Wildman was examined. He was proprietor in Jamaica of an estate, with six hundred and forty negroes. He had been resident from the year 1826, two years and a half, and also in 1825. He considered the slaves "by no means inferior to the labouring classes of this country in natural intellect." They were astute in driving bargains, knew well the market price of commodities. He thought that under emancipation the negro would be unwilling to work, and gave three reasons for his belief—the climate, the natural indolence of the negro, and the fertility of the country. He had known the negroes, when employed for their own benefit, exhibit great intelligence and diligence. He had known them under these circumstances carry burdens greater than their masters would have attempted to impose on them, or they have submitted to. Mr. Wildman's attorney, Mr. Phillips, had, while overseer of the Camanas estate, set his people task work, and they then got through their day's work by two o'clock, and went to Kingston to spend the rest of the day in excess. The negro slaves do exert themselves, Mr. Wildman continues, to obtain comfort and advantage beyond necessities of subsistence.

In Brazil we find the same phenomena exhibited, as may be gathered from Wilkes (*United States Exploring Expedition*. Philadelphia, 1845), pp. 52 *et seq.* The negro slaves of Brazil he considers divisible into two classes, those from Northern, and those from Southern

Guinea; that the former are intelligent and industrious, can frequently write Arabic, and are formidable by their power of combination; and that the latter, though not stupid, are idle. But of those which he classes as belonging to Southern Guinea, one half, he says, are Benguelans, whom he characterises as steady, industrious, and intelligent, nearly equal to the Minas, or inhabitants of Northern Guinea.

He states of the freed negroes (it is chiefly the Minas who obtain their freedom), that "those who receive their freedom in reward for faithful services, or purchase it, conduct themselves well. Their descendants are much superior in point of intelligence. Many of them own slaves. There are some blacks who are priests, and others officers in the army."

The Minas come down to the river Congo, and the Benguelans resemble the Minas in character; therefore, we must infer that the remarks made by Wilkes on the negroes of what he calls Southern Guinea apply only to the Congo negro, not the stock from which the majority of slaves is derived.

And Wallace mentions (*Amazons and Rio Negro-Land*, 1853), page 113, the fact of a Congo negro (freed by his master) having saved enough to purchase two slaves and a little land, in terms which would seem to shew that such an incident is, amongst the negroes, not very unusual, and favourably contra-distinguishes them from the Indians.

To this testimony may be added the more explicit statements of Bates. He informs us that in the great insurrection of 1835 and 1836, which threatened Brazil with Mexican anarchy, "the rebels of Para and the Lower Amazons did not succeed in raising the natives of the Solimoens against the whites. A party of forty of them ascended the river for that purpose, but on arriving at Ega, instead of meeting with sympathisers, as in other places, they were surrounded by a small body of armed residents, and shot down without mercy. The military commandant of the time, who was the prime mover in this orderly resistance to anarchy, was a courageous and loyal negro, named José Patricio, an officer known throughout the Upper Amazons for his unflinching honesty and love of order, whose acquaintance I had the pleasure of making at S. Paulo in 1858."

Bates further speaks of a negro servant of his own in these terms. "I was quite surprised to find in Isidoro little or no trace of that baseness of character which I had read of as being the rule amongst negroes in a slave country . . . The first traits I observed in him were a certain degree of self-respect and a spirit of independence. These I found afterwards to be by no means rare qualities among the free negroes . . . There was nothing ridiculous about Isidoro. There was a gravity of demeanour and sense of propriety about him which would have been considered becoming in a serving-man in any country. . . . I had afterwards to number free negroes amongst my most esteemed friends; men of temperate quiet habits, desirous of mental and moral improvement, observant of the minor courtesies of life, and quite as trustworthy in more important matters as the whites and half-castes of the province."

"There was another visitor besides ourselves, a negro whom João

Trinidad introduced to me as his oldest and dearest friend, who had saved his life during the revolt of 1835; he was a free man, and had a "sitio" (farm) of his own situated about a day's journey from this. There was the same manly bearing about him which I had noticed with pleasure in many other free negroes; but his quiet earnest manner, and the thoughtful and benevolent expression of his countenance shewed him to be a superior man of his class. He told me he had been intimate with our host for thirty years, and that a wry word had never passed between them. . . . It was pleasing to notice the cordiality of feeling and respect for each other shewn by these two old men."

On page 397. In S. Paulo Bates found a companion and friend in the negro tailor of the village, named Mestre Chico, whom he had known in Para previously. He was a free negro by birth, but had had the advantage of kind treatment in his younger days. . . . He neither drank, smoked, nor gambled, and was thoroughly disgusted at the depravity of all classes in this wretched little settlement, which he intended to quit as soon as possible. . . . His manners were courteous, and his talk well worth listening to for the shrewdness and good sense of his remarks. I first met Mestre Chico at the house of an old negress of Para, who used to take charge of my goods when I was absent on a voyage. The old woman was born a slave, but, like many others in the large towns of Brazil, she had been allowed to trade on her own account as market woman, paying a fixed sum daily to her owner, and keeping for herself all her surplus gains. In a few years, she had saved sufficient money to purchase her freedom, and that of her grown-up son. This done, the old lady continued to strive until she had earned enough to buy the house in which she lived, a considerable property, situated in one of the principal streets. When I returned from the interior, after seven years absence from Para, I found she was still advancing in prosperity, entirely through her own exertions, being a widow, and those of her son, who continued with the most regular industry his trade of blacksmith, and was now building a number of small houses on a piece of unoccupied land attached to her property. I found these and many other free negroes most trustworthy people, and admired the constancy of their friendships and the gentleness and cheerfulness of their manners towards each other."

That this extends to other parts of South America appears from the opinion of Humboldt, grounded on what he had observed, not only amongst mulattoes, but also amongst free blacks, that "the continent of Spanish America can produce sugar, cotton, and indigo by free hands, and the unhappy slaves are capable of becoming peasants, farmers, and landowners."

Here I shall quote other evidence, given before the same House of Commons commission, to which I have already alluded on Extinction of Slavery, 1832. We have there evidence as to the effects of emancipation and the working of free blacks in the Caraccas. Vice-admiral Fleming was examined. He had been in the Spanish naval service. He had twice been in the Caraccas, on one occasion for four months; had been far into the interior; was, on account of his rank in the

Spanish navy and long connection with Spaniards, as much at home, he says, as he could have been in any country in the world. He knew everybody of any condition. He took great interest in seeing a people newly emancipated, both from a European government (the revolutionary leader Bolivar had upset the Spanish Government and established a republic about 1821) and from slavery.

The free blacks continued to work in the sugar plantations, even in conjunction with slaves. They could have got land of their own and lived by tilling it, but only in the cold parts of the country. They prefer the warm parts, where land is not to be got. They are rapidly progressing towards civilisation. Schools are established; many of the blacks are learning trades; they desire knowledge; they maintain themselves perfectly well without assistance from their former masters or government. The country was progressing, though, at the time of his first visit, suffering from recent war. At his second visit there were large fields of wheat that had not been raised before and after that importation from America ceased.

Admiral Fleming knew several pure blacks in high position. One of them, General Peyanga, he speaks of as a well educated man, well read in Spanish literature, an extraordinary man. Many English officers served under him. There were many other black officers of considerable acquirements.

I come now to my last head, the degree of civilisation, commonly, I think, underrated, to which the negro has attained in Africa. First, Barth (*Travels and Discoveries in North and Central Africa*, London, 1857) everywhere speaks of the inhabitants of the interior of Africa as having attained to something at least resembling the oriental stage of civilisation. Perhaps the most forcible passage is the following (Barth I, vol. iv. pp. 414 *et seq.*):—

“A native negro sovereign of Timbuctoo, named Mohammed Askia, not only extended his conquests far and wide, from the centre of Houssa almost to the borders of the Atlantic, and from the pagan countries of Mosi 12° northern latitude as far as Tawat to the south of Morocco, but also governed the subjected tribes with justice and equity, causing well-being and comfort to spring up everywhere, and introducing such of the institutions of Mohammedan civilisation as he considered might be useful to his subjects. This king was held in the highest esteem and veneration by the most learned and rigid Mohammedans, whilst his immediate predecessor, a Berber sovereign, had rendered himself odious.

“In this kingdom of Timbuctoo there was a royal treasury and state prison. There were at least two large towns besides the capital, considerable cultivation of literature; one historian of the state, Achmet Bábá, had a library of 1,600 volumes; there was considerable commerce with Barbary, export of gold and salt, and in return import of almost all the luxuries of the Arabs. The king spent much of his revenue in introducing horses from Barbary to improve the native breed. Coats of mail are mentioned and brass helmets.”

This is the picture of a negro kingdom early in the sixteenth century.

Not far from here, Barth found (when he was there) a negro population industriously employed in agriculture and weaving. They would not receive in barter the cotton (tarrowel) he had brought with him to buy food, because it was not so good as their own manufacture. But if it be said that these are a higher type of negroes than those commonly slaves, yet Abeokuta belongs to the very centre of the old slave region. It is thus described by Burton. The Egbas of Abeokuta all of them work, either at agriculture or at some handicraft, and though they do not work well (Burton says, an Englishman would knock up a dozen Egbas), he adds, "How can it be otherwise in these malarious, fever-stricken, enervating, effeminising lands. Idleness is a condition imposed by a thermometer generally above 70°."

These people have ideas of division of labour and of trade. They have the five trades of blacksmith, carpenter, weaver, dyer, and potter. The blacksmith is also goldsmith, silversmith, copper-worker, and tinman. He can make rude keys, chains and staples, swords and knives, sickles and hoes. No American Indian or uncivilised Polynesian could do these things. They weave cotton cloth, and dye it with indigo; they have horses, cattle, sheep and goats.

The town is supposed now to have 150,000 inhabitants, and its original settlement (by refugees) does not date further back than 1825. It is rudely fortified. The government is republican. A body of negro refugees who can do this in six and thirty years are not savages, neither are they children who need to be under tutelage; they are civilised men.

After having surveyed the condition of the negro, both slave and free, both in the same country with Europeans and by himself, we may consider it, then, to be proved that he finds his only proper sphere is a position which, though possibly humble, is yet one of freedom.

Dr. CAPLIN said it appeared to him that the question which had been raised had not been met in the paper; for it was not a commercial question respecting the quantity of produce exported when the negroes were in a state of slavery, and when they were emancipated, but whether the negro is naturally susceptible of attaining a state of civilisation. As to their condition in a state of slavery, he believed they are more happy in that state than the white slaves in England and in France. Considering the brain of slaves, the question was, could it not be improved if they were placed in another condition? If the phrenological condition of the brain be considered, it must be admitted that they could be improved, for it was known that the capacity of the brain was increased and its form changed by education. He adduced as an example the change which was known to have been produced in the shape of a gentleman's head in Paris, several years ago. The gentleman had originally a peculiarly formed head, and he could wear his hat only in one direction. His intellectual faculties, however, having become developed by mechanical pursuits, his cranium was altered, and he was observed wearing his hat the wrong way. When he was informed that the buckle of his

hat was behind, he could not believe it possible that he could be wearing his hat the wrong way, because the shape of his head had been so peculiar; but he then ascertained that it had become altered, and was nearly as wide in front as it was at the back. If such a change could be effected by intellectual exercise in a white man, why should not the head of a negro become changed in the same manner? But under the circumstances in which they were placed, the negroes could not appreciate and enjoy freedom. Instead of being emancipated at once, or allowed to purchase their freedom, they should have been sent to school, and when able to act as civilised men, and taught to comprehend what liberty is, and to become useful members of society, freedom should have been granted to them as the prize for having acquired that knowledge. White men rise to the positions they attain by education and perseverance, and if they were placed in the same position as the negroes, without any opportunity of improvement, they would be as ignorant and stupid as they are. He thought that the negro, having a brain, he could be educated as well, and with the same results, as those who, by the exercise of their brain, are now in a superior position.

The PRESIDENT observed that he considered the question of the capacity of the negro for civilisation had been determined by the paper communicated to the Society at a previous meeting by Mr. Guppy. In that paper it was stated, on the evidence of practical experience, that the negro is incapable of appreciating and participating in European civilisation, and that when removed from restraints imposed on him he goes back into barbarism. The paper they had heard that evening shewed what facts could be collected to support the opposite opinion. But the authorities Mr. Pusey had quoted were principally old authors, and it is only in modern times that we can obtain satisfactory information on the subject. In former times people were blinded to the real state of the case, by considering it as a political question. That consideration no longer prejudiced the question, and we can now look at and consider the facts impartially. Mr. Pusey had collected statements which he (Mr. Pusey) considered satisfactory evidence of the capability of the negro for civilisation. With some of the facts stated he (the President) agreed, but with others he could not agree. Mr. Pusey had said that negroes can act as freemen in civilised society; that they work better when treated like freemen. Where they were treated as freemen they were comparatively useless, but when taken from Africa and sent to some place where they are partly free they become greatly improved. Mr. Pusey had to go to the West Indies, and to Brazil, and to the works of ancient authors to support his conclusions, that the negro in a free state is capable of civilisation. Modern information, with the exception of Mr. Wallace and Mr. Bates, differs materially from those accounts which had been quoted. Their evidence went to show that, in Brazil, there were free negroes who neither smoke, drink, nor gamble. Cases were also mentioned of industry among the slaves in the upper region of the river Amazons, who worked not only to buy their own freedom, but that they might purchase slaves of their own. Such descriptions

were very different from other accounts. Though he should not like to deny their correctness, so far as he could judge, the facts were generally otherwise. It was said further that the free negroes worked five days of the week, and only ceased from working on Saturdays and Sundays. Other authors stated that the free negro wishes to have every day of the week a Sunday. The fact was that, with the conflicting evidence on the subject, no satisfactory conclusion could be arrived at. Capt. Burton asserted that idleness prevails among people of all races where the temperature exceeds 70° of Fahrenheit. He (the President) did not concur in that opinion, for he considered that idleness was more a question of race than of climate. Dr. Caplin had said that the free negro could become a useful member of civilised society, but it must be borne in mind that he became so in connection with Europeans; and it was hopeless, in the absence of known facts, to speculate that he would become so without that association. That the negro is an inferior race at the present time is certain, and it remains to be proved whether he could, by any possible combination of favourable circumstances, work up to a high state of civilisation if left to himself. The only way by which such proof could be obtained would be to place a number of negroes on islands by themselves, excluded from all communication with other parts of the world, and to ascertain the advances they made towards civilisation in that position. But the Society have not got any islands whereon to carry out such an experiment. For his own part, he could not see the practical bearing of the paper. As to the question who were negroes, and whether all the natives of Africa ought to be so called, the question of the classification of mankind was at present in a very unsatisfactory state. He was glad that the paper had been brought forward, as he hoped it would shew those bigots who conceived that the negro had been unfairly treated by this Society, that our object was not to support slavery, or any pet doctrine, but that it was simply to arrive at the truth.

Mr. BENDYSHE observed that it was extremely difficult to come to any conclusion about the negroes, in consequence of their varieties, and he should be glad if the word negro were expunged from the dictionary. The moment the black men got from Africa to America they became, in point of fact, a different race; and the same argument could not fairly be applied to them as to the black men in Africa. It was the same with other people. The English in America, for example, were different from the English in England; and it was probable that the negroes altered very much by change of circumstances. It was very possible that when they got to the West Indies they might be improved by intercourse with Europeans but at the same time it could not be said that it was impossible they could be civilised in Africa. In different parts of that large continent the negroes differed in character and in circumstances, and they should not all be considered as the same class. Even in London, the inhabitants of St. Giles's were very different from those at the West-end, and the former would not be taken as a representative of the latter. Similar differences might exist among the negroes. It was

well known that those on the coast were of the very worst kind, and if they died out under such circumstances it might be regarded as a proof of their capability for civilisation, for we should do the same. It was quite impossible, in our present state of knowledge, to arrive at any conclusion on the subject. If the term negro were applied only to those black men sent from the west coast of Africa to America, there might be some chance of solving the question; but those residing in other parts of Africa ought to have different names as they have different characters. They occupy an immense tract of country, and as they were capable of mixing among one another and with the whites, that was again a proof of their possessing the capability of improvement. In the West Indies he believed most of the negroes were of mixed blood.

Mr. BOUVERIE PUSEY observed that very few of the negroes in the West Indies were of mixed blood.

Mr. BENDYSHE could scarcely conceive how it was possible that it could be otherwise. In America the negroes were probably mixed with Indian blood, and it became questionable whether the influence of the Indian blood might not preponderate, in consequence of its being indigenous to the climate. A classification of the negroes was wanted before any conclusions could be drawn respecting them.

Mr. G. WITT said he had been informed by a gentleman who had had great opportunities of observation, that there was a curious characteristic of the negro by which he might be distinguished. On feeling at the nose, a negro might be known by the absence of a groove in the fleshy part of the end of the nose, which all other people possess but those who have negro blood and a certain race in India. His friend told him that this peculiarity is used as a test to discover negro blood when the colour of the skin has changed; and that at a ball at New Orleans a man was stationed at the top of the stairs, who grasped at the nose of all suspected persons, and if the groove was absent they were kicked down.

Mr. C. CARTER BLAKE said the fact mentioned by Mr. Witt was far from unlikely, and if at any future time the comparative myology of the negro should be adequately examined, the alleged distinction might prove as correct as many others which pass current in the present state of imperfect knowledge. As to the assumed difference between the negro of Africa and of America, he was at a loss to know in what it consisted. They have been placed in different circumstances, but there are no physical differences between them. It had been said that if the negro were educated, his skull would become altered and resemble that of an European. But, in opposition to that opinion, he adduced the fact that the skull of a Wesleyan deacon in Bermuda was among the lowest of the low negro types. The physical differences between the negro and European had on previous occasions been pointed out, and in the form of the teeth also there was supposed to be a difference, and there was strong anatomical evidence to confirm that distinction. In the second volume of *Waitz's Anthropologie der Naturvölker* there was some curious informa-

tion respecting the characteristics and geographical distribution of the true negro of the west and of the east coast of Africa.

Mr. DU VAL observed that there is a peculiarity in the physiognomy of the negro sufficient to distinguish him, in his projecting lips, his flat nose, and the placing of his head, independently of the colour of his skin. The length of his heel was also characteristic. So that at neither extremity of his body did the negro resemble ourselves; and he doubted very much whether he could be considered a "brother," or even a relative. It was well known that the negroes had never attained a position among civilised men. Every attempt to civilise them had failed, for they had always gone back to their original state.

Mr. REDDIE thought they should never come to a satisfactory conclusion respecting the capability of negroes for civilisation until they had some definition of what was meant by civilisation. No one would deny that the negro might be improved, and taught to do certain things, as some domesticated animals may be, but could that be called civilisation? The Southern States of America had been alluded to as having improved the negroes, and the degree of improvement they had attained had been appealed to by both parties as supporting their opposite opinions. It was a great pity that there should be so much party spirit as existed in America on this question. But in a society like this, they might get rid of the question whether freedom should be immediately granted to the negroes or not. He supposed no one there would object to the negro becoming free, so soon as he is fitted for freedom; at the same time he thought the true philanthropists were those who would keep the slaves in slavery so long as it was for their benefit, but, of course, under humane laws, and with proper regulations for their ultimate manumission. The questions of capability of civilisation and of fitness for freedom, though separate, had been mixed up in the paper, and had thus added to the difficulty of considering the subject. He thought, however, that some conclusions might be arrived at from the facts already known, without the necessity of having experimental islands, as had been suggested by the President. He expected that the author of the paper would have taken a bolder line; but as the question had been treated, he did not know whether Mr. Pusey wished to regard the negro as having always been in a savage condition, or whether he thought that, having once been in a higher position, he had since sunk down to a savage state. If he meant that the African in the central parts of Africa had ever attained a state of civilisation, then the negroes on the coast were unquestionably a degraded race, and it could not be expected that, if they remained under the same influences, they would be improved. The only chance of their improvement was to place them among a higher race. To suppose that without such influence they could rise from a lower state was absurd, because against our actual experience. Even with the influence of civilisation it was a very hard task to raise the negro to a state approaching the European. Before, however, they could determine the question of the negro's capacity for civilisation, they must first have a definition of what was meant by the term. The better kind of negroes in

America are, no doubt, superior to many Europeans in this country, for we have many degraded people among us; but individual instances could not settle the question. Those who assumed the natural equality of the negro race to us, were met with this difficulty: if the negro were capable of rising to a state of civilisation equal to the European; and if he could even achieve it without the influence of a higher race, how could they account for his now being, throughout the world, in a degraded condition? If the negroes possess the power to elevate themselves, why do they not rise? Why have they not already risen?

Mr. BOUVERIE PUSEY then replied severally to the objections which had been made to his paper. With respect to Dr. Caplin's objection, that he had treated the subject too commercially, he said he had only treated it as to shew that the conduct of the emancipated negroes was different according to the different modes in which they had been treated. He agreed that the condition of slavery tends to cramp the energy of the slaves, who, having no difficulties to encounter in procuring food and clothing, never acquired the habit of forethought and provision; and what they had done for themselves under those circumstances he considered very remarkable. The President had objected that the authorities quoted in the paper were very old, but to many of them that objection would not apply; for instance, he had quoted in support of his views Sewell, Underhill, Burton, Bates, and Wallace, all of whom were modern authors. But why should not old authorities be trustworthy? It had been said that they were partial and biased by political prejudices, but all those he had quoted, with one exception, were against the abolitionists. The President thought that the evidence of Mr. Wallace and Mr. Bates was exceptional to that of other modern travellers; but his investigations led him to entertain a different opinion, the general evidence appearing to him to be favourable to the negro. Mr. Witt and Mr. Blake had adverted to physical differences between the negro and European. That, however, was a large subject, and not exactly now under discussion. Whatever might be the result of anatomical investigation, it would not affect his argument; for his own part, indeed, he, while as a transmutationist not attaching to the distinction the same importance as many a transmutationist, believed the negro to be a different species from the European. Mr. Bendyshe had laid stress on the difference between the negro in Africa and out of it, and that when out of Africa the negro was altered by mixed blood. If that were so, it would be in favour of his (Mr. Pusey's) argument; but he did not think much confusion could arise between the true negroes and those of mixed blood. He agreed that it was important to distinguish between the different tribes of negroes in Africa, though most persons believe that they all belong to the same stock. Mr. Reddie had drawn distinctions between the capacity for civilisation and such improvements as take place in the negro when in a state of slavery. It was true that a negro might be made a slave and taught certain things in the same manner as brutes are taught, but that was only domestication. In his opinion, nothing could be termed civilisation that does not imply

freedom, and the possession of sufficient qualities of intelligence and perseverance to fulfil the duties of civilised life. It had been asked by Mr. Reddie, why does not the negro, if capable of civilisation, civilise himself? He (Mr. Pusey) might ask, in reply, why have not the New Zealanders and other barbarous races raised themselves to a state of civilisation equal to the Europeans? It had been objected that many of the cases he adduced were only individual instances, and that they proved nothing, but for his part he considered that individual instances prove a great deal in connection with other things.

The PRESIDENT stated that another paper had been announced to be read, respecting human remains discovered in a kist in the Isle of Portland, but it had been ascertained that the flint flakes found with them were spurious, and the paper had consequently been withdrawn. The President then said it was his present duty to announce that the meetings of the society for the season had been brought to a close, and that the next meeting would be held on the 1st November. At the approaching meeting of the British Association at Bath, anthropology would be represented in Section E, and he trusted the Fellows of the Anthropological Society would meet there and support the claims of anthropology to be recognised as a distinct science in the proceedings of the association. During the six months that had elapsed since the anniversary meeting, two hundred new Fellows had been added to their list, and he hoped that under the influence of their assistant secretary, Mr. Blake, and that of the Council, when they met again, he should have to announce a considerable increase of members and the further success of the Society.

The meeting then adjourned to the 1st November next.

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