

THE

Phrenological Magazine:

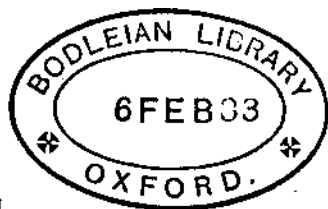
A JOURNAL OF

EDUCATION AND MENTAL SCIENCE.

EDITED BY

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"Board-School Gymnastics, etc."*



VOL. II. 1881.

LONDON : L. N. FOWLER,
IMPERIAL BUILDINGS, LUDGATE CIRCUS.

T. 16559 € :
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LONDON! PRINTED BY
GEORGE WILSON, MUSIC AND GENERAL PRINTER,
67A TURNMILL STREET, E.C.

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THE
Phrenological Magazine.

JANUARY, 1881.

TO THE READER.

THE next best pleasure to finishing one good task is the beginning of another; and in commencing the second volume of the PHRENOLOGICAL MAGAZINE one cannot but feel that the latter pleasure runs the first very close, because of the more certain assurance that the year's labours will be fully appreciated. At the beginning of 1880 there was some little doubt as to how far our venture would meet with support. Many a publication of the kind fails, not because there is no place for it, but because of the difficulty of making its existence sufficiently widely known. Could it by any means have appealed directly and certainly to everyone likely to be interested in its appearance, it would at once have been assured of a clientèle extensive enough to secure its adequate support. But such means is not yet to hand; and so every new venture of the kind is dependent for its success upon its ability to deluge the press with advertisements or its power of continuance until it has made itself thoroughly well-known.

This is not said with a view to showing its application to the case of the PHRENOLOGICAL MAGAZINE, but rather to illustrate the aphorism that there are exceptions to every rule—for the Magazine almost at once jumped into popularity and assured success; much to the surprise, may-be to the chagrin, of some, who prophesied its speedy failure, partly, perhaps, because they desired it to fail. Many assured us that phrenology was dead, and that it was only amongst the lowest and most ignorant that any faith in the thing was left. Of course we *knew* this not to be the case; but what can knowledge avail in the face of argument? It has been said that facts are stubborn things, but arguments are still more stubborn.

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B ..

To those who, great in their ignorance, still argue that phrenology is dead, that there is no truth in it, and the like, there can be no answer. They are like the man who, with his purse in a strange hand, tells you he would rather believe that the thing jumped out of his pocket of its own accord than that the culprit filched it out. It may be true, as such persons are in the habit of affirming, that phrenology is, for the most part, in the hands of ignorant men, second-rate men, and so forth; but surely that is nothing against the science, if true. It is rather to the shame of those who, pretending to love truth, let it lie like the pearls of ancient parable. We do not regard it as an evidence of the falseness of Christianity that its first disciples were ignorant men. A man, be he ever so illiterate, who has sense enough to see and accept a fact, certainly gives evidence of more wisdom than he who sniffs and passes by, saying there is nothing in it. Nor is it at all to the purpose, as a gentleman, new to the subject, recently remarked, to condemn the science because a self-styled professor of it is unable to make a sufficiently accurate analysis of character. Few things in this world are harder than to make such an analysis.

This is so because, first, and chiefly, our knowledge of phrenology is not perfect—perhaps never will be, and that for the reason that investigation is beset with difficulty. It is of no use to knock a man to pieces, and then to begin cutting away at his brain in order to discover how his mind is composed; nor is it a likely way to find out much about man by torturing a monkey. There are not wanting signs, however, that those to whom the world looks for so much, and gets so little—so little, that is, commensurate with the importance attached to them as a class—are beginning to revise their method of procedure in regard to psychology, and to set aside a little of their prejudice. Perhaps when they have got quite rid of the latter they will begin to see that the phrenological method of investigation is not so “unscientific” after all.

There are some men to whom the word “scientific” is a kind of shibboleth; they do not care so much for the result as the method of attaining it, being in this respect much like the philosopher who, finding the figs placed before him for breakfast had a honey flavour, straightway began to search, scientifically of course, for a reason for this unwonted occurrence, and who, upon his housekeeper explaining that the strange taste was given them by their having been put into an empty honey-jar, rated her for the discovery, saying that he could have found out a more philosophical cause for the phenomenon if she had only left him alone. So, if the vivisectionists could discover an organ for appetite by exposing

the brain of an ape and applying the electrode to it, they would be perfectly satisfied; but they can't bear to have it found out any other way. And yet the fact is the same whether the housekeeper or the philosopher finds it out.

It is worthy of remark, however, that a physician of high standing recently delivered a lecture on education, in which he advocated the method of adapting tuition to constitution, taught by phrenologists something like fifty years ago. Thus, we see, the world moves.

We do not purpose making any promises with reference to 1881—further than to say it is our intention to make this year's Magazine not only bigger but better than last year's; and this, not because we are dissatisfied with last year's volume, but because we think all things should improve with growth, especially a periodical, and because a year's experience in the conduct of a Magazine has taught us a good many things, by which we mean to profit. One thing that we have learned is that a good work is always appreciated by some, and that it never fails of its mark in time. This is the real guerdon of the true worker—a guerdon missed by the false worker, or he who, having a truth to teach, fails to teach it. Phrenology is such a truth, and is of the utmost importance, as being the only basis of a sound system of mental philosophy. Its value as a physiognomical system, though inestimable, is only secondary in comparison with this; and we trust that those of our readers who have learned to appreciate the science will aid us in making it known.

VICTOR HUGO.

The following phrenological estimate of perhaps the first of living poets is taken from a portrait issued in *L'Art* from a drawing by L. Bonnat, exhibited in the *Salon* of 1878. The likeness accompanying this sketch is after a photograph of older date, and does not present the subject in quite so good a light as the later one.

The first thing that strikes the educated observer in looking at Victor Hugo is the harmony that exists between body and brain. His physique is good, and in his prime he must have had considerable strength and physical endurance. The various functions of the body, too, appear to be in harmony one with another, so that he is well constituted for health. From this perfection of the physical functions, so to speak, would arise much sympathy with physical conditions. He

would enjoy being with persons of great health and strength, and feel much for the suffering, not merely from the benevolence of his nature, but because of a more physical sympathy. In like manner he would enjoy contact with healthy animal life, and with nature in all her various moods.



Sympathy, indeed, is one of the key-notes of Victor Hugo's character, enabling him to put himself in unison with almost every condition of life, but from the strength and generosity of his nature, it would go most naturally to the young, the humble, and the needy. Another ruling feature of his mind

is what the old phrenologists called Marvellousness, and what the new ones call Spirituality. It is the faculty which, more than any other, gives inspiration—the power to maintain a sustained flight, illumination, the inner eye that sees through the outer veil of things. The organ has its manifestation above Ideality and adjoining Veneration. In M. Bonnat's portrait the poet's left forefinger rests on it, just as in the well-known portrait of Sterne the forefinger, as he supports his head on his hand, touches the organ of Wit.

The head as a whole is very high, indicating more than ordinary moral power, while it is comparatively narrow, indicating that the selfish propensities are not specially clamorous. He will not care much for money for its own sake, and should be noted for liberality; also for perfect frankness and candour, and not overmuch caution. Daring, especially moral daring, should be a salient trait of character; arising chiefly from a very distinct sense of right, and the benevolence of disposition before mentioned, but assisted by hope and faith, for these elements also appear to be strong, together with a perennial youthfulness.

The æsthetic qualities are very marked in development, giving a keen sense of beauty, harmony and perfection. The slightest jar or discord either in nature or art causes him discomfort, if not positive pain. Sense of sound, of rhythm and cadence is very strong. Power of language is exceptionally great. Few persons possess so much of the instinct for expression. He is a natural "maker" in the sense that he easily moulds his language into an adequate representation of his thought. Such a man, with his originality, could not make a tongue the vehicle of his ideas without permanently enriching it.

His intellect is one that would be likely to theorise and take delight in abstract principles rather than to be satisfied with facts; not that he does not appreciate facts, but that, having perceived them and seen the hinder-lying principle, he clings to the latter and lets the fact go. He is a keen observer of men and things, but especially of men; and in his mental operations, that is, in the accumulation of knowledge, he should be characterised for great accuracy. Facts to him are of little worth unless well arranged and concatenated. His memory is remarkably good, especially of history, with the exception, perhaps, of the dates.

His sense of incongruity is a marked feature, but most marked in regard to moral things. This makes him a keen critic, enabling him to see discrepancies and inconsistencies very quickly, and to expose them mercilessly; for although

Hugo is a kind and tender-hearted man, he has no mercy for shams or falsities. He may, indeed, be said to possess the poet's "hate of hates," as another living bard styles it. He is not wanting in severity of mind, and even something of a vindictive spirit, although it is tempered by his sense of justice and good-will.

Causality, giving power of abstract thought, originality, and the ability to perceive and appreciate the principles of things, is one of his largest intellectual organs. Allied to this is the faculty of induction, the power to compare and draw inferences, and, in its higher relation, to perceive things intuitively. The latter quality is one that is prominent in all playwrights and in the most successful novelists. It was supremely large in Shakespeare, and very large in Walter Scott. Those possessing it in a high degree are remarkable for their intuitive perception of character, and if they have imitation combined with it, as Victor Hugo has, they are very successful in delineating character.

Delight in music is a natural gift; but the love of art-music is probably more an acquired taste, and not to be compared for depth with his inherent fondness, amounting almost to a passion, for the musical in nature. This is one of his enthusiasms. Another is his love of the beautiful, the perfect, and the sublime in nature, and a third his sympathy with humanity. Few men are so all-sided as he is—few the chords of whose natures resound so thoroughly to every—even the slightest—touch. He has the masculine strength of one parent and the delicacy and susceptibility of the other—the energy, courage, and steadiness of the man, with the tenderness, refinement, and domesticity of the woman.

One with so much comprehensiveness of mind and vigour of intellect, together with so much earnestness of purpose, is bound to go to some extremes from the very fact of his being thrown among lower natures, and brought into constant and everyday contact with imperfect institutions and inconsistent social arrangements, which are a source of continual jarrings to his finer perceptions and more delicate susceptibilities.

L. N. F.

THE body is *domicilium animæ*, her house, abode, and stay; and as a torch gives a better light, a sweeter smell, according to the matter it is made of, so doth our soul perform all her actions better or worse as her organs are disposed; or as wine savours of the cask wherein it is kept, the soul receives a tincture from the body through which it works.—*Burton*.

THE OLD PHRENOLOGY AND THE NEW.

In the January number, 1879, of the *Gentleman's Magazine*, there is an article called "The Old Phrenology and the New," by Dr. Andrew Wilson. It is evidently the Doctor's *prima facie* view of the matter, without any knowledge of the old Phrenology—not so much even as the most elementary work would give him; and considering the number of first-class physiologists of talent and reputation quite equal, if not superior, to his own, who have declared themselves phrenologists, the presumption—as it generally is—is quite equal to the ignorance. Phrenologists affirm,

- 1st, That the Brain is the organ of Mind;
- 2nd, That it is not a single organ, but a congeries or bundle of organs, manifesting a plurality of functions; and
- 3rdly, That the vigour of function is proportionate to the size of the organ.

The 1st is generally admitted; the 2nd also is now very generally admitted, although the leading physiologists of the present day say that those separate faculties have not yet been discovered. Even Dr. Wilson admits that some of these, lying in the base of the brain, have been made known by the new method of vivisection. It is therefore on the 3rd proposition with which phrenologists are at issue with their opponents. To ascertain that vigour of function is in proportion to the size of the organ, phrenologists must compare function with development, and the question is, how have they done this? When Dr. Gall was possessed with this idea of the connection between brain and mind, he sought out people who were distinguished by peculiar mental characteristics, noted either by their excess or deficiency. He examined their heads, got casts where he could, and observed in what such heads all agreed in shape. By long and continued observation by himself and his followers, on this method some 38 organs of primitive faculties have been discovered and marked on the cast as nervous centres, not as always indicating the shape of the organ. The skull formed no impediment to such observations, as the difference between the internal and external tables was never more than from one tenth to one eighth of an inch, when the difference between a large and small organ is from one inch to an inch and a half. Spurzheim was one of the best anatomists of the brain that has yet been known, and a few minutes' examination of the plates to his "Anatomy of the Brain," would evidently have been of great service to Dr.

Wilson. He seems ignorant of that work, and of the still greater ten-guinea work of Dr. Vimont of Paris, on "Comparative Anatomy." The filling up of the phrenological chart has been the purely inductive work of nearly one hundred years; and Mr. Geo. Combe tells us that most of the organs marked there have been *established*, and I believe him, because he was a talented, careful, cautious Scotchman, as seen by his life, lately published, and because I have myself by forty-four years' experience, been able to verify most of the observations upon which such establishment is affirmed. With this prelude let us return to what Dr. A. Wilson has to tell the public on the subject. He says, the science "dispenses destructiveness by the inch, and maps out the bounds of our amativeness by the rule-of-three." Certainly the difference between a large and small sized destructiveness varies from an inch to an inch and a half, as indicated by a caliper measurement from ear to ear; and as to amativeness, no one, I think, who has read "The Functions of the Cerebellum," by Dr. Gall, Vimont, and Broussais, published by Geo. Combe, in 1838, can doubt that amativeness is the function of this organ, by the rule, not of three, but of careful observation and experiment. Phrenologists I know differ as to the function of this organ, but my own observations most *positively* confirm the views of Gall.

A successful phrenologist, Dr. Wilson tells us, is in truth only a shrewd physiognomist. Fancy the functions of thirty-eight organs all marked in the face! Leading characteristics may often be seen in the face, but it is more frequently, like the head, without any expression at all. I have lately read Lavater, and as compared with phrenology, it literally tells us nothing reliable. Character may with tolerable success, we are told, be determined by hand-writing. I mention these things not that they require any answer, but to show that Dr. Wilson really knows *nothing* about the subject upon which he presumes to instruct the public.

Dr. Wilson ridicules the idea that "a successful practice of phrenology can be carried on independently of any knowledge of the brain, *i.e.* by craniological observation alone;" still this may be, and is often, the case. The physiology of the brain has been discovered by comparing function with development, and this development may be very correctly indicated by the shape of the skull. Drs. Gall and Spurzheim however, were physicians, and having made the brain their special study, were no doubt better acquainted with it than Dr. Wilson. I have cut open many skulls, but the brain itself is only known to me theoretically, from the best works and

plates upon the subject. Anatomy may confirm but not originate discovery of function.

Dr. Wilson tells us that "Self-esteem is situated above and in front of the ear," a sufficient indication that he has no practical knowledge of the subject whatever. He tells phrenologists that their observations of development are all wrong, but like most of the leading physiologists of the present day, he does not know where to look for a single organ. How does he know, then, that they are wrong, as he has never looked? He, and they, have never followed Gall's method, and they are consequently unable to give a reliable opinion as to its results. The phrenologist, he says, can tell "when swayed by emotions of one kind or other which part of the brain was being affected." True, but because the molecular action of some special part of the brain attends each thought and feeling, mind is no less a mystery.

Dr. Wilson says, "it is in the grey matter that thought is chiefly evolved, and from this layer that purposive actions spring. The white matter, on the other hand, merely conveys nerve force and nervous impressions." This may be true, but the phrenologist takes into consideration both the length and breadth of an organ; the first is measured by its distance from the medulla oblongata, sufficiently indicated by its distance from the external opening of the ear, the latter by its peripheral surface. The amount of grey matter, and therefore the depth of the convolutions, is correctly indicated in the "temperament" of the individual. Intelligence and feeling are in proportion to the amount of grey matter, and are therefore less in smooth brained animals, rising in proportion as the convolutions increase in number and depth. A large brain is indicative of force of character in proportion to the size; but there are many large brains of very sluggish temperaments, and that take a great deal to set them in motion, and then the action is in proportion to the relative development of the parts. We may have a powerful animal, a good man, or a philosopher; the intellect is by no means proportionate to the general size, but to the small part of the brain only with which the intellect is connected. We have often very clever men with small brains, active temperaments, and predominating anterior lobes connected with the intellect. These men are often of great eminence in their own small specialité. Dr. Wilson appears to be quite ignorant of these very elementary truths in phrenology, consequently his judgment of the subject can be of no value whatever. He actually expects that the intellect should be in proportion to the general size of the brain, and because it is not he tells the public that there can

be no truth in phrenology. The Doctor gives "high brain-weights without corresponding intellectual endowments," and he says, "With respect to the brain-weights of the fair sex, anatomical authority asserts that in women with brains weighing 55.25 ounces, and 50 ounces, no marked intellectual features were noted;" and he says, "anatomical researches also prove that a large brain and high intellectual powers are not necessarily or invariably associated together." No phrenologist ever said they were, and this fundamental error is quite sufficient to show that Dr. Wilson knows nothing of the subject. The intellectual faculties are connected with only a small part of the brain lying upon the supra-orbital plate, and which may be very correctly measured by competent observers. The frontal sinuses do not present the difficulty that the Doctor would have us suppose. They do not exist in young people at all, and not in more than one in ten of grown-up people, neither do they extend over the number of organs he mentions. And as to the organs in the base of the brain, I beg to assure him not only that they are known, but that their size, from external indication, may be correctly estimated by a competent observer. The Doctor also tells us that the organ of "Calculation" is a solid bony process, and that "Form" and "Language" are the result of bony processes. Fancy Gall, Spurzheim, Geo. Combe, and Andrew Combe, the physiologists, who have made the physiology of the brain a life study, mistaking bony processes for brain! Every phrenologist knows this is not true. Dr. Wilson tells us "that the size of the organ of 'Language' really depends upon the special development of a bony process on which the organ of sight rests, and which in any case has nothing whatever to do with the brain." On the contrary, the phrenologist says (see "G. Combe's System," 5th Edition) a large development of it is indicated by the prominence and depression of the eyes; this appearance being produced by convolutions of the brain, lying on the posterior and transverse part of the upper orbital plate, pressing the latter, and with it the eyes, more or less forward, downward, or outward, according to the size of the convolutions. When the knowing organs are very large, and the eyebrows project, the eyes may *appear* less prominent than they really are. The projection of the eyes over the cheekbone, and their depression downwards, are the proper signs of the organ being large. (Vol. 2, p. 124). The fact is that Dr. Andrew Wilson has no practical knowledge of the subject whatever, and has only raked up the old prejudices and misrepresentations that have been answered 100 times before. In proof of this he even brings forward a Mr. Stone who "in 1829," he

says, "read a paper in which the results of a most laborious and conscientious series of observations on the crania of well-known persons were detailed." In this paper I believe it was shown that people with very large Destructiveness had never committed murder, whereas people with large Benevolence had, &c. The fact is, that Mr. Stone was proved, by the *Phrenological Journal* of that date, to know no more about the subject than Dr. Wilson now does. A critic in the *London Medical and Surgical Journal* says of this Mr. Stone and his "evidences:" "His representation of the phrenological doctrines, and of the facts whereon they are founded, is, in many instances, so grossly unfair as to deserve the exposure and reprehension due to moral delinquencies; while his sophistry and mis-statements have no parallel, except in the indecent and vulgar impudence with which they are promulgated."

I have dwelt longer upon this article of Dr. Wilson's than it deserves, because he is a person of some note in his special department; because it represents, not the knowledge, but the ignorance which so generally prevails on the subject at the present time, and because its assumption of knowledge is very likely to deceive a number of young country editors who are glad of even so flimsy an excuse for their own want of knowledge, and who take this opportunity to inform their readers that the pseudo-science of phrenology has been exploded and the delusion set at rest for ever. Thus a leading country paper, after supporting phrenology for twenty-eight years in January last, under new management, informs the public that Dr. Wilson "condenses the arguments that scatter to the winds a delusion which once had a marvellous vitality but which is now discredited by all scientific authority."

As to the new phrenology, supposed to be inaugurated by Dr. Ferrier, it was determined fifty years ago by those who had made the functions of the brain their special study that vivisection could throw no light upon the subject,—that normal function could not be estimated under such abnormal conditions; and there is nothing in Dr. Ferrier's experiments that tends even to qualify this decision. Phrenologists have given to the world the best and most practical system of mental science that has yet been known, and there is not a single fact that Dr. Ferrier professes to have discovered, by the torture of animals, that has added anything to this, or tended to make it more complete. Dr. Wilson tells us that by employing electricity as the only agent and means of stimulation to which the non-sensitive brain will respond, Dr. Ferrier has succeeded in mapping out in

the brains of higher animals the centres which govern many of the common movements of life, and which from reasonable analogy may be presumed to be represented in the human brain as well. As these acts are the practical outcome of ideas, the parts of the brain concerned in the production of definite ideas may thus be regarded as being in one sense mapped out and recognised; although it is hardly necessary to remark that the regions of Dr. Ferrier in no wise correspond to those of the old phrenology, while in many cases, indeed, they are utterly opposed to it." This is quite true, and the old phrenologists utterly repudiate any connection with Dr. Ferrier's new phrenology. Dr. Wilson, however, tells us that "thus the work of localising movements and important centres of the senses has so far proceeded with success." Nothing can be more vague than this, but even so far, has it been a success? The German physiologists have been pursuing the same method of inquiry as Dr. Ferrier, viz. vivisection, and the Editor of *Mind* tells us that "more expressly contradictory results could not be obtained on this or any other point." This is exactly what phrenologists would have expected and which made them declare long since that vivisection could throw little or no light upon the functions of the brain. Gall's method may be more laborious, and therefore not pursued by our physiologists, who have so much else to do, but it is the only one. Dr. Wilson, however, tells us of this new method that "the subject is no less instructive in the sense in which it shows the displacement of erroneous ideas by new and higher thoughts founded on accurate observation of the facts of life." Perhaps no one will be so astonished as Dr. Wilson himself at the comparison he has drawn between the two methods and their results, should he ever find time and inclination to qualify himself to form an opinion on the subject.

C. B.

It is a calumny on men to say they are moved to heroic action by ease, hope of pleasure, recompense—sugar-plums of any kind in this world or the next! In the meanest mortal there is something noble. The poor swearing soldier, hired to be shot, has his "honour of the soldier," different from drill regulations and the shilling a day. It is not to taste sweet things, but to do noble and true things, and vindicate himself under God's heaven as a God-made man, that the poorest son of Adam dimly longs. Show him the way of doing that, and the dullest day-drudge kindles into a hero.—*Carlyle*.

THE FACE AS INDICATIVE OF CHARACTER.

A CHAPTER UPON NOSES.

The nose, being the most prominent feature on the face, ought to have some character in it, and it is generally conceded that it has. Lavater, than whom no one has a higher reputation as a physiognomist, attaches a great deal of importance to that organ. A nose physiognomically good, he says, is of unspeakable weight in the balance of physiognomy, and can be outweighed by nothing whatever. It is the sum of the forehead, and the root of the under part of the countenance. Without gentle archings, slight indentations, or conspicuous undulations, there are no noses which are physiognomically good, or intellectually great. Without some slight sinking in or excavation, in the transition from the forehead to the nose, though the nose should be considerably arched, it is impossible to conceive any noses to be physiognomically great.

Lavater goes on to say that noses that are much turned downwards are never truly great. They indicate thoughts and inclinations always tending to earth ; a close, cold, heartless, incommunicative disposition ; often combined with malicious sarcasm, ill-humour, and an hypochondriac or melancholic temperament. When arched in the upper part, they are fearful and voluptuous. Noses somewhat turned up at the point, and conspicuously sunken at the root (or top), under a slightly perpendicular rather than retreating forehead, indicate a nature inclined to pleasure, ease, jealousy, pertinacity ; though the person may at the same time possess refined sense, eloquence, benevolence, and considerable talent.

Noses, he says further, which have on both sides many incisions or lines, that become more visible on the slightest motion, and never entirely disappear even in a state of complete rest, betoken a heavy, oppressive, sometimes hypochondriac, and frequently a maliciously knavish character. Noses which easily and continually turn up in wrinkles, are seldom to be found in truly good men, as those which will scarcely wrinkle, even with an effort, are in men consummately wicked. When noses, which not only easily wrinkle, but have the traces of those wrinkles in them, are found in good men, these good, well-disposed men are half fools.

Turned up noses, in rude, choleric men, under high, in the lower part arched, intelligent foreheads, with a projecting under-lip, indicate a usually insupportably harsh and despotic character. A hundred flat, snub-noses may be met with in men of great prudence, discretion, and abilities of various kinds. But when the nose is very small, and has an inappro-

prate upper lip, or when it exceeds a certain degree of flatness, no other feature or lineament of the countenance can rectify it.

These "notes on noses" of Lavater, though somewhat general, are in the main very true; but we want something more definite in order to make the study of the face very profitable. There are one or two good rules for judging of the nose, which should be borne in mind. The short or up-turned nose is apt to receive rapid impressions, and of course to lead to correspondingly rapid emotions; and it therefore indicates the rapidity with which they are sought. The long and drooping, or over-hanging nose is apt to receive impressions slowly, and of course is correspondingly tardy in causing emotions. Width of the nose indicates the permanence of its function; its height, their intensity.

A large nostril, by the way, is indicative of good lung-power. Some people forget that "God breathed into his *nostrils* the breath of life;" they seem to think He breathed into the *mouth*, as they always breath through the latter organ instead of through the nose. Probably more consumption is traceable to this one habit than to almost any other cause, barring, perhaps, this—that our Christianity requires us to have so many poor always with us, and not unfrequently with bad shoes. The Indians, Catlin tells us, early train their children to use the nose for breathing; compelling them to do so from infancy by pressing their lips to whenever they fall apart in breathing, and he adds the significant fact that consumption is almost unknown among the race. It will be observed that consumptives have generally pinched-up noses.

It was observed in a previous article that the proper proportion of the length of the nose to the face is one-third. In the Caucasian this is the average length; in the Mongolian the average is about one-fourth, while in the Ethiopian it is somewhat less (See figs. 18 and 19); and in just about the same relative proportions are those races developed. The Ethiopian race is, as it were, still in infancy, and the Ethiopian nose is that of childhood; the Mongolian race has



Fig. 18. Caucasian.

come up into youth ; only the Caucasian has attained manhood.

The nose may be classified as follows :—

1. The Roman Nose,
2. The Greek Nose,
3. The Jewish Nose,
4. The Snub Nose, and
5. The Celestial Nose.

This classification is based on the profile alone, and there may be almost endless modifications of these five types.

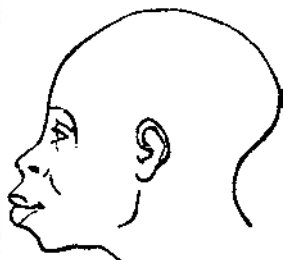


Fig. 19. Ethiopian.

The Roman is the executive, aggressive nose—the nose of the conqueror (Fig. 20). The portrait of Wellington presents a good example of it, and, indeed, it is not uncommon to hear it designated the Wellington nose. The likenesses of all great military leaders, from Hannibal downwards, present strong types of this form of nose. A living example may be found in one who is at the head of a large but peaceful army—namely, the Salvation Army, whose chief and originator, General Booth, possesses a strongly marked Roman nose. It is, as we shall see by-and-by, the nose of attack, and it is Mr. Booth's mission to attack sin.



Fig. 20.

The Greek nose (Fig. 21) indicates refinement artistic taste, and love of the beautiful. It is the nose, as the name implies, that formed the national Greek type, in which race the instinct for the beautiful in art and nature reached its highest development. "The owner of the Greek nose," says the author of "Notes on Noses," "is not without some energy in the pursuit of that which is agreeable to his tastes ; but, unlike the owner of the Roman nose, he cannot exert himself in opposition to his tastes."



Fig. 21.

It is not uncommon to find this form of nose both in women and men ; it is especially beautiful in women. The noses of poets and artists often have the form, or manifest a tendency towards it.

Fig. 22 presents the common form of the Jewish nose, although it is by no means peculiar to the Jews, who possess this form of profile in common with the Syrians. It is a marked characteristic of the Bedouin Arabs, as it was also of the Ancient Phœnecians, of whom we have portraits on Egyptian monuments. This type of nose indicates a keen,

apprehensive, wary, suspicious character. It is, above all others, the cogitative or deliberating nose, and betokens a disposition to make schemes and study men.

The Snub nose indicates more or less a state of undevelopment (Fig. 23). We do not find it on the faces of conquerors, nor often on the faces of artists. It has been said that it cannot be an historical nose; but this is a mistake. The Snub has made its mark on history as well as the Roman and the Greek.



Fig. 22.



Fig. 23.

The nose of Socrates was a confirmed Snub, combined, perhaps, with a little of the Celestial type, and few historical figures stand out so prominently as he. According to some portraits, Rabelais also possessed this form of nose: surely a sufficiently historic figure. The Snub nose is not incompatible with a good deal of insight and humour.

If a trifle be added to the Snub, and it be given a turn upwards in addition, we have the Celestial nose (Fig. 24). It is the exact opposite of the Jewish nose, being concave where the latter is convex. The nose pre-eminently of childhood, it is very common in women, and is not without its beauty. It indicates an inquiring, inquisitive mind, in character with the receptive nature of the child-mind, and is a kind of note of interrogation on the face. The *nez retroussé*, as it is sometimes called, must not be confounded with noses of other classes, which simply turn up a little at the end. The true Celestial presents a continuous incurvation from the root to the tip.



Fig. 24.

Such are some of the more marked outlines of noses. What then is the general significance of the nose as a factor in physiognomy? To put it into a couple of words, we may say that the nose indicates the *initial bent* of the mind. It does not necessarily tell anything about the quality of the mind, or about its inherent power or strength, but simply the primal direction in which it acts. Why it is so we cannot tell, although that there is a why cannot be doubted. Perhaps some day we may be able to tell the reason why physiologically. Sir Charles Bell did something towards a solution of this question, and Mr. Darwin had also added his observations on the subject; but there is yet a wide field to explore. In lack, however, of being able to give the physiological reason for this or that form of nose, we must be content to accept what observation has succeeded in discovering. This we shall endeavour to do in our next article.

HYPNOTISM.

The phenomena of animal magnetism, mesmerism, or electro-biology, have been so often and so obstinately disputed by medical men, that it is satisfactory to find that at length a physiologist has taken the trouble to investigate the subject, and also had the courage to publish his views, for it required no little courage to go counter to the prejudices of a class like the medical world, which never seems to take hold of a new truth until it is forced upon them from without. The experiments of Dr. Charcot in Paris, and Dr. Heidenhain in Breslau, have had the effect of awakening quite an interest in hypnotism (from the Greek *hupnos*, sleep), and it is not improbable that medical men may now take the subject up. Dr. Heidenhain, who is professor of physiology in the University of Breslau, recently published his researches in the form of a lecture, with a second part, giving additional results, and the work has been translated into English, and published by Messrs. Kegan Paul & Co., with a preface by Mr. G. J. Romanes. The work will probably form a new era in the study of the subject of hypnotism, chiefly from the fact that Dr. Heidenhain has conducted his investigations in the true scientific spirit. A few of the eminent professor's facts are not a little striking from a phrenological point of view ; but we will take his results *seriatim*.

He says that one of the most striking symptoms of the hypnotic state is a more or less marked diminution of consciousness. In the slighter forms of hypnotism, the media are well able to remember what has occurred during their apparent sleep, but in this case some of the phenomena are always wanting. In the more fully developed forms the person, on awakening, has no remembrance of what has occurred ; although, by having hints given him of his various actions, he is able to call them to mind. In the most complete forms of hypnotism no remembrance whatever is retained. It can nevertheless be proved that, even during the most completely developed hypnosis, sensory perceptions take place ; but they are no longer converted into conscious ideas, and consequently are not retained by the memory. The reason of this, Dr. Heidenhain says, undoubtedly depends upon the fact that the hypnotised individuals have lost the power of directing their attention to their sensations, being taught by thousandfold experience in our everyday life that sensations only incompletely pass the threshold of consciousness when our attention is directed to them.

His experiments led him to the conclusion that a hypnotised person behaves like an imitating automaton, as all those of his movements which were linked for him with an unconscious optic or acoustic impression were repeated. The material change, brought about in the central organs through the stimulation of the organs of sense, liberates movements which have the type of voluntary movements, but are not really so. Thus he could easily induce his subject (generally his brother) to follow him, by walking before him with an audible step, to bend first this way and then that, by standing before him, and himself performing these movements. In walking the subject exactly imitated the time and force of the professor's audible steps. But these movements were only partially remembered.

A further symptom of the hypnotic state in its most complete development is highly marked insensibility to pain. A pin may be run right into the hand, and only an indistinct feeling of contact brought about; but on awakening the full sense of pain is again present, and pulling out the pin causes acute pain. Another interesting point is the increased reflex irritability of all striated muscles, which accompanies the hypnotic condition. The unexpected part of the matter is, says the professor, the fact that this increase of reflex irritability, in persons who have awakened from a deep hypnotic condition, in spite of their return in all other respects to a completely normal condition, continues for a long time—days, and probably weeks. Under normal conditions, a reflex stimulus excites a quick and transitory contraction. A wink or a cough are actions which rapidly pass away. In hypnotised persons, however, the muscles reflexly excited by gentle stroking of the skin remain contracted for a long period. They fall into a condition of so-called tetanic contraction, and hence the parts of the body they belong to become stiff, or rigid. Dr. Heidenhain is of opinion that the greatest caution is necessary in inducing hypnotism.

The professor does not believe that there is any specific force exerted by the experiments upon the passive subject. He says: "All the phenomena I am at present acquainted with are explicable from simple premises which have a perfectly sound physiological basis." Although true that hypnotic experiments do not succeed with everyone upon whom they are tried, indeed, with but a very small percentage of the total number of persons experimented upon, yet, so far as he could see, the "susceptibility" depends on the existence of a greater or less degree of sensory irritability; consequently, pale, anæmic individuals are most liable to

hypnosis. The preliminary staring at a bright object, so often resorted to to induce the hypnotic condition, the professor thinks increases sensory irritability; also that a certain degree of psychical excitement appears to favour the establishment of the hypnotic condition in an extraordinary degree. So, monotonously-repeated sounds, like the ticking of a watch, gentle and rhythmical stimulation of the skin, &c., tend to induce hypnotism. How does the professor, however, reconcile his opinion that the operator exerts no special "force," with the fact that "with the stroking *par distance*, everyone, even those with no disposition for hypnotism, experience peculiar sensations?" The explanation that they are partly tactile, partly heat sensations, seems scarcely enough.

Passing over Professor Heidenhain's hypothesis, "that the cause of the phenomena of hypnotism lies in the inhibition of the activity of the ganglion-cells of the cerebral cortex," we turn to his second part, which describes some interesting psychical experiments, extremely interesting to phrenologists. In one set of facts we see how the organ of Language may be affected by hypnotism.

"In Mr. F—," says the author, "gentle pressure upon the left temporal region very readily produces ataxic aphasia. . . . The same with Mrs. B—. Both recover the power of speech by means of pressure upon the right temporal region." More minute examination of the disturbance of speech led to the discovery of notable differences in different individuals, some being able freely to use the mouth and tongue, others not. The colour sense was acted upon in a similar way to the power of speech. "Just as the aphasia produced by acting on one temporal area disappears when the temporal region of the other side is stroked, so does the disturbance in the colour sense." The author also records that "a person naturally completely colour blind distinguished, when in the condition of unilateral hypnosis, colours which, in her normal state were for her totally indistinguishable."

Do not these facts, so far as they go, point to a more sensible means of arriving at the true functions of the different centres of the brain than those adopted by Dr. Ferrier and others? It looks like coming back to the so-called "exploded" theories of phreno-magnetism.

ALL of us who are worth anything spend our manhood in unlearning the follies or expiating the mistakes of our youth.—
Shelley.



ROBERT BURNS.

A PHRENOLOGICAL ESTIMATE, TAKEN FROM A CAST OF HIS HEAD.

When Mr. L. N. Fowler, visited Dumfries, Scotland, in the year 1864, to give a course of lectures there, he was presented with a cast of the head of Robert Burns, by Mr. James Frazer of that town, who took the same from the skull on the occasion of the body being exhumed a few years previously. The presentation was made on the 25th of January, the anniversary of the poet's birthday, with the request that Mr. Fowler would give his opinion of it at the conclusion of his lecture. Mr. Fowler did so, and the substance of his remarks were as follows.

The cast, he said, indicated a head of unusual size, being $22\frac{3}{4}$ inches in circumference, which would be large for the head itself with all the natural hair and integuments upon it. The measurement from ear to ear over Firmness was $13\frac{1}{2}$ inches, and the length from the occipital spine to the root of the nose, 13 inches.

The cast shows that the head must have been fully developed in every part. The frontal lobe is fully represented, the social brain large, and the animal propensities distinctly indicated. The moral brain was not defective; still, if it had been more fully developed and about half an inch higher, there would have been a much better balance of mind, and

the passions and impulses would have been more under control. But, taking the mental organisation as indicated by the cast, he must have been characterised for great grasp of intellect and general range of knowledge. The reasoning brain was very large, and gave him great power of thought and originality of mind. The organ of Comparison is large, which would give him power to analyse, criticise, describe, and see the differences between things.

Tune, Ideality, Constructiveness, Sublimity, and Imitation, as well as Wit, were large. These organs must have played a very important part in the operations of his mind, giving him a strong love of music, rhythm, and versification, a keen sense of the incongruous and ludicrous, great powers of mimicry, a powerful imagination, and the disposition to take large and extravagant views of things.

Benevolence was very large, indeed, it was the largest moral organ, and must have had an almost controlling influence, leading him to be generous and sympathetic to a fault. His whole mind, intellectually and socially, as well as morally, must have been affected by his Benevolence; and no doubt his theological views were materially influenced by the same organ. Spirituality was rather large, and along with Ideality, aided to give expansiveness of mind, consciousness of another life, and ability to magnify and embellish his thoughts and emotions.

Veneration, Hope, and Conscientiousness were all fully developed, but not quite so large as Benevolence, and must have had an inferior influence, although they are not so small as to be necessarily defective in his character; still he could not have been so specially rigid and strict in his ideas of right and wrong, nor so particularly devotional and reverential, as he was liberal and generous.

Self-esteem was not large in the part which gives pride, dignity, and haughtiness, but very distinctly developed in the part indicating independence, sense of liberty, and desire to have his own way. This faculty, together with his large Combativeness, disposed him vigorously to resist any interference with his rights. Approbativeness was fully developed, rendering him very sensitive to praise and blame, and disposing him to pursue a course calculated to secure attention and gain applause.

All the social feelings were strongly developed, and, combined with his very strong and ardent temperament, gave him great social power and influence. Adhesiveness was extra large, making him friendly and companionable. Parental love was also a strong feature, and in conjunction with

Benevolence, might lead to the over-indulgence of his children. Amativeness was large, but not controlling, though its action would probably be increased by his warm, arterial temperament. Inhabitiveness, giving love of place and home, was a distinctly developed organ; but Continuity was rather weak, adapting him to variety of thought, feeling, and occupation, rather than to patience and protractedness of mental action.

The combined action of Combativeness and Destructiveness gave him great force of character and general energy; also strong prejudices and a sarcastic turn. Cautiousness was prominently developed, rendering him watchful and somewhat suspicious. Secretiveness was less in development, giving him much frankness and candour of disposition. Acquisitiveness was full in size, though not equal to the generous impulses of his nature. Alimentiveness was very large. The organ of Firmness was full in development, and in times of opposition and excitement he would be very decided and positive, but rather yielding under opposite conditions.

Had his circumstances and education been different, Burns would probably have developed much more mind than he did, and exerted a greater and perhaps better influence than he was enabled to do.

INFLUX THE SOURCE OF INVENTION.

The writer who signs himself G. G., in a very learned and able article on "The Evolution of Ideas," vol. 1, page 337, has, I think, laid himself open to attack in some of the views advanced. He says, "Science declares that ideas are the results of the same natural forces which act in organic nature; and mental phenomena are not different from other natural phenomena in kind, but only in greater complexity," and upon this unsubstantial foundation builds up the theory that "evolution in nature on our globe has reached its highest stage in man, and with him terrestrial development has arrived at a remarkable turning point." "Instead of producing higher organisms, nature has given to the human species the faculty of invention." In other words, having created a being in all respects equal to itself, it has transferred to him all its powers, and has retired from the scene of action for ever, leaving to him and his mysterious mistress Evolution the government of the world on which he dwells.

G. G. quotes Herbert Spencer to prove "that no idea or feeling arises save as a result of some physical force expended in producing it;" but a greater than Spencer has said: "Man's mind is his spirit, and the spirit is a man, because the mind means the whole will and understanding, which exists in first principles in the brain, and in

derivatives in the body, and they therefore include in their forms the whole man. Therefore the mind rules the body in all its particulars at will. Does not the body execute whatever the mind determines? It directs the ear to hear, the eye to see, the tongue and lips to speak; it impels the hands and fingers to do what it pleases, and the feet to go where it wills. Is not the body, therefore, mere obedience to the mind, and could it be such unless the mind were in its derivatives in the body? Is it comformable to reason that the body should obediently act because the mind so wills? They would thus be two, one above, the other beneath—one commanding, the other obeying. This no reason will admit; therefore it follows that man's life is in first principles in the brain, and in derivatives in the body. All the constituents of the mind relate to the will and understanding, and the will and the understanding are receptacles of love and wisdom from the Lord and constitute man's life."

"That the first principles or primary forms of life are in the brain is obvious: First, from sense itself; for when man exerts his mind and thinks, he feels that he thinks in the brain; he introverts his sight, contracts his brow, and feels a speculative process going on within, especially in the upper part of the forehead. Secondly, from man's formation in the womb; for the brain or head is first formed, and for some time continues larger than the body. All the external senses, sight, hearing, taste, feeling, and language, are located in the fore part of the head, and by means of fibers communicate immediately with the brain and draw from it their sensitive and active life. The affections, which are derivatives of love, portray themselves in the face; and the thoughts, which are derivatives of wisdom, portray themselves in the light of the eyes. Anatomy teaches that all the fibers descend from the brain through the neck into the body, and that none ascend from the body through the neck into the brain. Where the fibers are in their first principles and primary forms, there life is in its first principles and primary forms."

Will Herbert Spencer or G. G. maintain that the origin of life is not at the origin of the fibers? What, then, becomes of the proposition that "all ideas are the result of some physical force expended in producing them"? If I interpret correctly the teachings of the great Swedish philosopher, we must look higher for the source of life and inspiration than to the wonderful organisation of flesh and blood known as the natural man, which the scientists say is "the highest stage yet reached by evolution." Within the smallest particulars, as well as in the larger members, organs, and viscera of the human body—the grand microcosm of the universe—there is a conscious, breathing, pulsative soul in constant communication with the author of life. So in and above the world of matter there is a world of spirit, through which life from the Divine is constantly flowing into all forms and organisations of matter fitted for its reception. If this were for a moment suspended, all animal and vegetable life would immediately end, the revolving earths and the mighty suns be consumed like meteors, and chaos would come again.

But as the heavens are eternal, and material worlds and systems of worlds are but representatives of the grander glories of the spiritual and celestial degrees of life, so will the physical universe endure for ever. Here, then, is the source of all inspiration. The poet, the artist, the inventor, or the divine may drink from this inexhaustible fountain. As the blazing centre of our solar system is daily seeking in the crevices of the rocks for seed to germinate, or in the fathomless oceans for leviathans to bring forth, so the great Sun of the spiritual universe is sending forth his light and heat to bless with new inventions for the comfort, new delights for the eye, new harmonies for the ear, and new joys for the hearts of his children. Not a step do we take but by his permission, not a mouthful of food that he does not provide, not an hour of sleep that he does not send.

Man, the crowning glory of the universe, comes into the world more helpless than the vilest worm. Without assistance he would soon die for lack of nourishment, whereas all other forms of animal life are born into full knowledge and ability where to seek their food, to know their companions, which are friends and which are enemies; construct houses, form marriages, bring forth young, love them tenderly, provide for them until able to care for themselves, and to perform the same offices, and by procreation perpetuate their kind. Man is born without any knowledge whatever, and yet he has the capacity to attain the wisdom of the highest angels, and light is given in proportion to his power to receive and appropriate. All inventions are given by influx from the world of spirits. When the printing press, the steam engine, the sewing machine, and the telephone were needed, suitable mediums were found for transmitting the knowledge of them to mankind. No amount of "physical force" could have produced one of them.

Within the past one hundred years a greater flood of light has been poured upon the earth than has fallen during any ten centuries since its creation. What tongue can tell the progress of the next golden cycle? When higher altitudes are attained by the spiritual man on the earth and in the heavens, the natural will rise to higher stages of development than have yet been reached. When the new schools of philosophy, instead of attributing all things to *nature*, and *evolution*, and *force*, will "render unto Cæsar the things that are Cæsar's, and unto God the things that are God's," when science and religion hand in hand drink together from the fountain of divine revelation, and reason and rationality prevail over scepticism and pride of opinion, then will come the golden age of the world. C. R.

[While we are pleased to insert the above article in reply to the one which appeared in the October number of this MAGAZINE, entitled "The Evolution of Ideas," we wish it to be understood that we do not necessarily endorse all the views therein expressed, any more than we accept as incontrovertible all that G. G. advances.—Ed. P.M.]

KISMET.

A TALE FOR THE SEASON.

"A dream within a dream."—*Poe.*

Less than a decade but more than a lustrum ago, a little before midnight of a Christmas eve, there might have been seen wending his way along the Strand and Wellington Street, to Waterloo Bridge, a man, older probably in looks than in actual years; and yet he was well stricken in years, though hardly the three score and ten that his appearance betokened. He may have been sixty, or a year or two more. His hair and beard were grey, and both profuse, indicating a yet hale and hearty frame. He stooped a little as he went, not as one who has toiled over-hard so much as one who has cogitated much, and has been in the habit of seeing more within than without. His step was firm, but no longer elastic. As to his dress, it was neat and clean, but neither new nor fashionably cut. About his hat there was an antiquity that was becoming; it was beaver, broad of brim, low of crown, and somewhat battered. It might have passed through a couple of generations, as such hats used to do. He carried a stout stick—one that seemed to have been made for a tall man, which he was not.

Arrived at the bridge, the old gentleman took a survey of the structure, and being apparently satisfied in his own mind, possibly that it would bear him, paid his halfpenny as way-farers were then wont to do, and passed on. After walking a few paces forward, he took a careful look over the parapet into and down the river; then passed to the opposite side of the bridge, and looked as carefully up-stream. It was a beautiful though sharp night, and there was quite a sprinkling of stars aloft, and of course below too, mirrored in the dark, sliding, mysterious water-mass of the Thames. He had been some time making these observations, when suddenly there boomed out from the tower of St. Stephen's the first stroke of midnight. Then followed the second; but before the third rolled on the night air, a glad peal burst forth from the bell-lofts of the Savoy Chapel and St. Mary-le-Strand, followed by a loud clangour from a score others on one or the other side of Thames.

The old gentleman walked to and fro along the bridge, apparently enjoying the scene and the wild clamour and resonance of the bells. So long as the din lasted, he did not

seem to notice that he was almost alone, only now and again a solitary foot-passenger passing by. With the return of quiet, however, there came a feeling of the narrowing of the world about him, and a sense of loneliness—a loneliness especially saddening because it was Christmastide, when people are wont to get together, and to, at least, make believe forgiveness and forgetfulness of injuries, squabbles, and all kinds of old scores, because of—well, because of great debts forgiven.

The watcher on the bridge seemed to think of all this, for gradually his step became heavier, and his head sank lower upon his breast. He no longer saw the multitudinous star-depths, nor scanned admiringly the magnificent panorama of Thames, none the less wondrous from the clear-obscure of the vision. His gaze was inward; his mental eye rested on the long vista of his own years—a sight which few can review with entire satisfaction.

As he looked his feet tottered, and he staggered to a seat in one of the central recesses of the bridge.

Presently a policeman approached, and, perceiving his bent figure and downcast air, bade him "move on."

"Why should you make me move on?" asked the old man, appealingly. "I have been moving on I don't know how many hours, and now I would rest."

"All right," said the policeman; "but you can't rest here. You must move off the bridge."

"But why may I not rest on the bridge as well as off?"

The constable cast a sidelong glance at the man, as though to make sure of his intellects. Perhaps not being quite sure that the querist was altogether *compos*, he did not reply.

The man repeated the question: "Why may not one rest on the bridge as well as off? Is it forbidden in England for a man to take his repose on a bridge?"

"I don't know about forbidden," replied the policeman; "but we find that folk that want so much to be on the bridge generally want to be off it too."

"What you say is as good as a conundrum to me. How can a man want to be off and on at the same time?"

"It strikes me you're a good way from home," remarked E 20.

"Well, yes, I am; indeed, I can't be said to have a home. I haven't had one for many a long day. That's one reason why I wanted to rest a bit here on the bridge."

"Ah! so I thought. It's just such homeless ones as you that come and chuck themselves over the parapet, almost scaring the life out of one with their terrific screams."

"Throw themselves over the parapet!—into the river!" exclaimed the man, standing still and looking at the big policeman with wide eyes.

"Yes, into the river."

The man with the antique beaver shuddered. Then he turned quickly and stepped into one of the abutments, and gazed down into the dark flood. The movement was very quick, but he had scarcely put his head over the parapet, before the policeman had a hand on his collar.

"No, you don't," he said.

"Don't what?"

"Don't throw yourself over."

"Did you think I was going to jump into the river, then?" asked the man, shivering.

"Well, it's my business to prevent you, anyhow, if you should take the notion into your head."

"You've no need to fear that. I have not come to suicide yet, notwithstanding the sorrow—nay, even the misery—I have gone through. Besides, if I were to dream of such a thing—which heaven forbid!—jumping over there, into that black deep would be the last thing I should think of. It's too horrible!"

"Horrible enough," replied the policeman.

They approached the Lambeth end of the bridge. The policeman crossed over, and turned to retrace his steps. The old gentleman followed him.

"You won't mind me staying on the bridge if I walk by your side? I have a reason for wanting to remain: I expect to meet some one."

"All right," replied the policeman; "but it's a funny time to make an appointment to meet anyone, and it Christmas too."

"It was not an appointment; it was a dr——"

"A what?" asked the policeman, seeing that his companion did not finish the sentence.

"Well, I might as well tell you, although I dare say you will think that I am a strange being."

"Strange enough, as it appears; but what were you going to say?"

"I was about to say that I came here in obedience to a dream."

The policeman again took measurement of the old man's intellects.

"A dream?"

"Yes; I dreamed that if I came and spent Christmas eve on this bridge I should be able to make amends for a wrong I did long ago."

The guardian of the peace gave a grunt in his beard. He wondered, probably, if the said wrong was anything for which the man might be arrested. Persons had confessed crimes under stranger circumstances than these. He waited, therefore, with something of interest for the stranger's next words. They were disappointing, however.

"I turned my son out of doors," he said.

"Humph! Is that all?" replied the constable. "Perhaps he richly deserved it."

"He may have been a little in fault. Of that, however, I must not judge, for my fault, my error, was greater. A man should not mete out punishment when he is in a transport of anger. That's what I did. I turned my son out of doors because he dared to dispute my authority. I cast him off, disowned him, because of that—threw him on the world, with all its temptations—I, who should have been his guide and protector. One rash word—a rasher deed—and it was done! A life spoiled—may be, two! And yet it was fate—fate!"

The old man became silent. He took out his handkerchief to blow his nose, and as the policeman looked down upon him he saw him apply it to his eyes.

"Did you dream, then, that you should meet your son here?" he asked.

"Not ex—exactly."

The old man was evidently struggling with a rush of emotion. Presently he continued—

"I dreamed that I was to come here. I dreamed it year after year, generally about the same time—towards back-end."

"Towards what?"

"Back-end."

"What's that?"

"The end of the year."

"I never heard that word before. I suppose you don't belong here, in London?"

"No; I come from north of the Humber; it's a common word we have there."

"And have you come from there on purpose —?"

"No, not from there now. It's a long story, and a sorrowful one, but if you will let me sit down here on this seat I will tell it you. This walking back and forth on the hard pavement has tired me, being, as I am, no longer young. You're no more afraid I shall jump over, I fancy; are you?"

As the old man uttered the last words, he looked up at the staid, helmeted myrmidon of the law with a sad smile.

"No."

"Just imagine me taking a header into that ghastly dark

water," he said, looking down between the pillars of the parapet into the dark river, which rushed down beneath the bridge with a glittering swirl and wail. "Can you imagine a puny man like me doing such a thing? If I wanted to commit self-murder I should have to do it in warm water, and with my eyes bandaged, as tender housewives drown kittens. It takes a bold, brave man to do such a thing."

"And yet but a year ago to-night I saw a delicate woman leap from the bridge."

"Did you though? and was she drowned?"

"Yes; it was an hour before her body was got out, and then she was dead enough, I warrant."

"Dear, dear! It must be terrible, the trouble that can lead a poor soul to that!"

"You may well say that. And to see how neatly she folded up her shawl—a poor, worn, thin thing—and laid it on the stone bench, with her bonnet upon it!"

"Did she, indeed?"

"Aye, did she. I'll be bound she had a good mother."

"Poor soul! And perhaps her mother never knew what became of her."

"Likely enough."

"That's how it was with my poor boy's mother. He went away, and she never saw or heard of him again. I thought he would come back after a while, but he never did, and it broke his mother's heart. We'd been happy before then—few happier; for she was a tender soul, and as gentle, look you—as gentle as a dove. But the boy took after me—that is, my side of the house. He was fiery and self-willed, though good-hearted at bottom. He took a fancy to a girl I did not approve of—a bit beneath him, I thought—nothing else, and so we had words, and, as I told you, I showed him the door. For, you see, he said he'd have the girl he loved though a thousand fathers stood in the way. That was too much for me; though I had done just the same thing—stuck to a woman against my father's wish, and was at loggerheads with him for years in consequence. He said at last, when my boy was born:

"'Jack, we have been fools long enough. I did just the same—fell out with father because of the' mother. We're all born tyrants, we Stathers. You'll do the same wi' him.'"

"I often thought of my father's words when my Willie had gone. But it was too late then: I ought to have done so before. But there's a fate in it. Still, the fatality was hardest on me—on me, the last of the race, for I *am* the last if my son should be dead."

The penitent got up now and said he was rested. They walked on again.

"That's what I can't think," continued the old man, after a long pause.

"What?" asked the other.

"That my son is dead."

"And have you never heard anything of him?"

"Never a word, although it is twenty years to-night since we parted, for it happened on a Christmas eve. Twenty years!—just imagine the misery I have suffered in that time. Oh, what scorpions men do prepare for their own backs! My punishment began at once. Nothing prospered with me after that. In three years I had to give up my farm. Then I tried one thing after another, living the while on my wife's money; but it was always the same—failure! I would not own that it was a punishment; I was too proud. Then when we sat of nights by the fireside, lonesome, and my wife's eyes reproached me—then were the only times that I spoke crossly to her. O the misery, the misery of it!"

"But did you not take it too much to heart, sir?" said the policeman, feeling a deep respect for his strange companion.

"How can a man take it too much to heart? To bring misery upon such a home, and upon such a mother! O, sir, if you could but know. If she had rated me, stormed, shown temper, I could have borne it better; but when I lay awake at night, thinking, thinking, and I knew that she was awake too, and weeping—I cannot describe the torment. I began to think I took it too much to heart, and I changed my religion four times; that is, I went from sect to sect, thinking there was something wrong in each. But it made no difference: the very best religion wouldn't have brought comfort to a man in my mood, while any would have sufficed for a woman like my dear wife. Did you ever think of that, sir?"

"Think of what?" asked the policeman.

"That a good woman will sanctify any religion."

"I can't say that I ever did."

"But it is true. There was that in her mind that would have made an idolatry sacred."

Again there was silence for a few minutes. Then the policeman said:

"I suppose, sir, your wife is dead?"

"Yes; she has been dead for many years—more than ten; and ever since then I have been a wanderer, now here, now there, always looking for my boy. It is my fate. I never dare venture to the old home but once a year. That I must do to see that the old order of things remains the same, and

to see that everything is kept in readiness for my son's return. For you must know it is not my house, but the boy's. It was his mother's, and she made it over to him, together with what else she possessed, giving me control over it only until he should be found. But I never could touch any of Willie's money. I had done him wrong enough: that must be left; I easily earned enough for my wants, and for my goings to and fro. If I had touched his money it would have gone as mine had gone before; I always felt that, and so I would not touch it, but have had everything kept in the old place just as it always was when he was a boy, and if he goes back he will find it so, and he will know, if he should not see me, that I remembered him; for they have orders always to expect him, but most of all at Christmas-tide, for I have a fancy somehow, that we shall meet, or that matters will be made right, then. It is but a fancy, I know, but it has always been with me, and the dreams I have had have made it stronger."

"Do you think it wise to put faith in dreams, sir?"

"It depends on the nature of the dream; if you find your dreams come true you must."

"Have you found any of yours come true?"

"Yes; for several years I saw this bridge in my dreams, and I was directed to come to it, but I had no idea of its whereabouts until the last time I went home, when I happened to look into an old book that had belonged to my grandfather, and that had not been opened for years: it contained engravings of celebrated places, and among others of this bridge. I recognised it immediately by the mushroom-like huts at the corners. I at once determined that if I had the same dream again I would obey it. For some time it did not return, and I began to think I had seen the last of it, when one night, only three weeks ago, I had the same dream more vivid than ever. I thought I was led through crowded thoroughfares to the foot of the bridge; as soon as we passed the gates my conductor said:

"Listen!"

"I listened, and heard first one and then another church ring out a Christmas peal. I said—

"Then it is Christmas eve?"

"My conductor answered 'yes;' and then I recognised for the first time that it was my dear wife. The effect of her presence on me was so great that I started and woke. I could not sleep again that night. The next day I resolved to obey the direction of my dream, come what might, and I arrived in London two days ago. It is my first visit to this great metropolis, and you may imagine how strange everything is to me."

"It must be," replied the policeman. "And suppose nothing happens here, what shall you do?"

"I shall return—not home, for until I find my son I have no home, but to the place I was in when I came to London, where I must begin all over again."

"It is a wearisome life, Mister."

"Wearisome indeed; but when fate pushes one cannot say nay."

"It's true, all men can't live their life the same way. What seems right to one man may be quite wrong to another. But I must be going; time is getting on. I wish you luck, sir; and if you take my advice, you won't stay longer on the bridge, for there's a fog coming on, and you may not be able to find your way back to your lodgings through it. Look, how it is coming up the river there."

He pointed as he spoke towards Blackfriars-bridge, already but dimly discernible through the advancing mist, which was rolling rapidly onwards, obliterating the lights of the Embankment and the paler ones of the opposite shore, and quenching as with a wet blanket the stars of heaven. The man of dreams, who had never seen such a sight before, stood gazing at the phenomenon in amaze, until river, banks, buildings, and sky were as if suddenly blotted out of space, and nothing was left but the fragment of bridge whereon he stood. A feeling of chill brought him to himself.

"Well!" he exclaimed. "This is sudden. Which way must I take, for I don't know."

"Where do you want to go?" said a voice behind him, which made him start, because it was so different from the policeman's."

He turned whence the voice came, and dimly discerned a medium-sized, broad-shouldered man standing near to him, nothing of whose features, however, he could make out for the fog.

"I was speaking to the policeman," said the dreamer. "Which way has he gone?"

"I don't know. I have seen no policeman, nor anyone else since I came on the bridge," replied the stranger. "But if I can help to put you in the right way I shall be glad to do so."

"Thank you; if you would kindly tell me which way to take for the Strand—"

"This is the way; I am going to the Strand, so we might as well walk together."

As they went on side by side, the dreamer tried to get a glimpse of his companion's face, but could not, partly because of the fog, which became denser every minute, and partly

because of a broad-brimmed felt hat, which was pulled down over his brows. The only thing that he could note was that he had mild, gentle eyes.

"Have you far to go after you get to the Strand?" said the stranger after a pause.

"I have to go to Castle Street, Holborn: that is where I lodge."

"Do you know the way well? for it is a long distance to go in such a fog as this."

"Not very well. I am a stranger in London, and don't know my way about well; but I shall get there all right."

"That's not so very sure," said the other. "But here is the Strand, if you can recognise it."

"Dear! dear! This does not look much like getting home to-night. Why, it is worse here than on the bridge. And it is making my eyes so sore I can scarcely hold them open."

"It's evident you are not used to London fogs."

"I was never in London until two days ago."

"Came up on business, I suppose?"

"Yes; that is, more business than pleasure."

"And have come up alone, I presume? Have no one with you?"

"No; quite alone."

"Well, I, too, am quite alone; and if you don't mind accepting a lone man's hospitality, I should be glad if you would give me your company till morning. My lodgings are not far—just this side of Temple Bar. There will be a cosy fire and a bit of warm supper waiting for me, both of which I shall be glad to share with you."

The fatalist accepted the invitation, as he would have followed almost any lead at the moment, and a few minutes' walk brought them to his new companion's lodging, which was in a court off the Strand, almost, as it were, beneath the shadow of St. Clement-Danes.

They were met in the hall by a pleasant-faced woman, who wished both of them a merry Christmas, and then preceded them upstairs to stir up the fire and make the room cheerful. The old man's eyes were smarting so with the fog that when he got into the brilliantly-lighted room he could scarcely see. He took the arm-chair wheeled up to the fire for him, and was glad to feel the genial warmth to his limbs, which were half-perished with the cold.

The old gentleman was now enabled to "take stock" of his entertainer, he having divested himself of his overcoat and slouch hat. He appeared to be in the prime of life, and was a good, indeed rather a fine, specimen of a man. His face,

which was well bearded, had a frank, kindly look, although it bore marks of care: or was it simply thought?

But there was not time to make any further observations, for supper was at once placed on the table, and both host and guest being hungry, it was discussed in comparative silence.

When the cloth was removed, wine and spirits were brought out, and the host invited his guest to name his choice.

"I never drink anything stronger than tea or coffee," said the old man. "My head has become weak of late years, and liquors of any kind make it weaker."

"Then you shall have coffee," promptly replied his host, touching the bell. "I myself never touch spirits, though I occasionally drink a glass of wine. I remember the time when a young man would have been scouted as a milksop who would not drink till his intellect was drowned and his passions on fire; but we get more reasonable in our habits now-a-days."

Presently the coffee was served, and both drew up to the fire, and for a minute or two looked into it deliberately, as though conscious that a night was to be spent together, and that it was necessary to find topics for conversation.

"I am glad to have your company to-night," the host said at length, looking up: "for of all nights in the year one prefers not to be alone on Christmas eve; and without you I should have been quite by myself."

The old man was thinking of something else, and did not reply.

"Curiously enough," continued Mr. Willet—for so his landlady called him—"this night twelvemonth I happened upon a chance guest in a similar way to that in which I fell in with you."

"Indeed!" exclaimed the dreamer, whose mind was particularly alive to anything of a wonderful nature. "How did it happen? That will be a good story for Christmas eve."

"O, there is nothing very extraordinary in it. My business is across the water—at the Waterloo Station, in fact—and I am generally on my way home about the time I met you. Last Christmas eve, just as I was crossing the bridge, a poor woman threw herself over the parapet into the river."

"How extraordinary!" exclaimed the listener, his eyes like live coals. "The policeman I was speaking to told me the same thing. He saw the occurrence."

"It is rather strange," replied the host. "But, as I was going to say, I and a gentleman who was near when the woman mounted the parapet both rushed to prevent her. When we saw all help was in vain, we came away together. Our ways lay in the same direction for a short distance, and

as the gentleman seemed in low spirits, I asked him to step in and spend an hour with me. He came, and we did not part till morning. He was to have been here to-night, for we have been fast friends ever since, but I suppose something has occurred to prevent him. Not the least curious part of the affair is the reason of my friend's being on the bridge at the time."

"What was it?"

"It is one that a sane man can scarcely understand."

"Indeed! Is he, then, not sane?"

"Sane enough in most respects. But you shall hear. He went there in consequence of a dream."

"How strange! Why, that's just like—"

He was going to say "like me," but he remembered the doubt cast on the man's sanity.

"The strangest thing, however, is yet to tell. Many years ago he committed an act of disobedience to his parents, which shortened their days; and as that act was committed on Christmas eve, he felt bound to do penance by spending several hours of every night before Christmas day pacing about Waterloo Bridge."

"Will he be there now?" cried the old man, springing from his seat. "I should like to go and see."

"No, he won't be there to-night; I reasoned him out of the folly, and not before it was time, for, I believe, ten successive Christmas eves he spent wandering about the bridge, and all because he dreamed he must do so."

"And you say his parents are dead?"

"Yes, he frequently told me both were dead."

The old man's heart, which had begun to stir with an unusual feeling of hope and awakening, much as the woods do when the first breath of Spring is upon them, became suddenly oppressed, as with a sinking, deadening sensation. He felt like one who, striving to gain a firm footing, misses the hold he had thought to grasp, and again feels the void beneath him. And yet it was strange! Two of them to have been deluded into going thither by a dream—and so strong a one that it had possessed them for years!

Such were the old man's cogitations, as he sat with head cast down and thoughts deject. The hopes that had been raised in his mind were, however, too strong to be altogether destroyed at a blow. He therefore ventured another question:

"What is your friend's name?"

"Cuthbertson," Mr. Willett replied.

"Strange again!"

"Why so?"

"Because that was the name of his sweetheart."

"Whose sweetheart?" asked Willett, with a perplexed look.

"My son's."

Willett, who had been smoking, laid his pipe upon the table, stood up, and placed his back to the fire, as an Englishman invariably does when he wants to warm up his wits to an extra effort of thought.

"You puzzle me," he said, after a pause, looking down upon his companion. "Why should there be anything strange in my friend's having the same name as your son's sweetheart?"

"Because," replied the old man, with difficulty mastering his agitation, "my son left me on a Christmas eve, in consequence of a quarrel about his sweetheart, and I have never seen him since; and because, moreover, I too was on the bridge, when you saw me, in obedience to a dream."

Mr. Willett's lips fell apart, as though he were going to ejaculate, and his eyes opened preternaturally. But he uttered no sound; his wits, however, needed no more warming, and he sat down. Then he said:

"Do you mean to say you came to London for the purpose of pacing Waterloo Bridge at midnight, because of a dream?"

"I did."

"Did you expect to see your son there?"

"Or to hear something about him."

"This is the first time you have come?"

"Yes, but I had the dream many successive years. It was only this year that I knew where to come. I never knew where the bridge was before."

"And you say the quarrel was about your son's sweetheart, and that her name was Cuthbertson?"

"Yes."

"It certainly is very curious. Had she a brother?"

"I don't know; she was not of our town."

"Strange! I wish Cuthbertson had come up to-night."

"I wish he had," replied the old man. But it is always the same. I seem to be Fate's plaything."

Willett laughed.

"Why do you laugh?" asked the dreamer.

"Because the expression might have been taken out of Cuthbertson's mouth. He is always using the word 'fate,' or 'Kismet,' which is Turkish for the same thing."

"Turkish?"

"Yes; he has had a good deal to do with railways, and has been in Turkey about them several times. I believe he once hastened his departure from Constantinople in order not to miss his midnight parade of the bridge."

Just then there was a tap at the door. Both started, for they thought everybody in the house but themselves had retired. It was the landlady, who told her lodger that Mr. Cuthbertson was below, and wanted him to go down for a minute, as he was not well.

Willett excused himself for a moment, and said he would be back directly.

When he was gone his guest became quite agitated, and paced uneasily about the room.

"On arriving in the housekeeper's little parlour, Willett found Cuthbertson seated in a chair by the fire, haggard and pale. He seemed, too, to be half-frozen.

"What on earth is the matter, Cuthbertson?" he exclaimed, and then added: "Have you been on the bridge again?"

"I have," replied Cuthbertson, who was of gentlemanly appearance, quite intelligent looking, though care-worn, and with streaks of grey in his dark locks.

"You promised me you would not go again."

"I did; but I could not help making one more—a last visit."

"And the result?" responded Willett, in a chagrined tone; "the same, I suppose—a chilling to the bone, and nothing more?"

"No."

"What then?"

"My father has been there—he or his ghost."

"You may well say 'or his ghost,' for you have told me, at least a score times, that he was dead."

"So I thought," replied Cuthbertson: "they told me so. But it could have been none but he—man or ghost."

The last sentence was said in a half-undertone, as though the words were shaped of themselves out of his thought.

Mr. Willett was like one who grasps at the idea that there is nothing—nothing real; that all we see or think we see is delusion. Cuthbertson there in the corner, with wild eyes focussed on something far beyond the confines of the room, and with the fog—which was penetrating everywhere—mantling about him, seemed almost unreal. Dreams—dreams!—Was he too in a dream? Shaking himself together with an effort, he put the query, much as seamen throw their last anchor:

"But how do you know? Who told you this?"

"A policeman: I happened to get into conversation with him, and he told me as a curious circumstance that a strange old man, with an old-fashioned beaver hat—I know it as well as the weathercock on the church tower—had been wandering

about the bridge because he had been directed to do so in a dream. He seemed to think the old gentleman a lunatic, and he must have thought me another from the effect his news had upon me. I have been running up and down all the streets leading from the bridge, but of course there was no chance of finding anyone in such a fog—especially a ghost.”

Willett, with lips agape, and large eyes, stood like one sleep-waking.

Meanwhile his guest up-stairs had become impatient beyond endurance. After pacing the room for some minutes, he went to the door, then advanced to the edge of the landing, returned into the room, and again sat down.

But there was something in the place, or in the time, or else within himself, that would not let him rest. He once more crept to the edge of the landing, and after a moment of hesitation, began to descend. When he had gone down one flight of stairs he heard voices—that of Willett and another. He descended more slowly and stealthily; all the time feeling terribly guilty, but being unable to check himself.

The two men below might have heard the stairs creak had they not been so preoccupied.

Finally the old man was at the foot of the stairs, and the door was ajar. He felt that he could not retreat, and yet he hesitated to push the door open and enter. Still the impulse to see Cuthbertson was beyond his control. How his heart beat!

Willett stood, as was said, like one in a dream. He was trying to revolve the whole thing in his mind, but it was his head only that seemed disposed to revolve.

Then, when his perceptions began to clear a bit, and he thought he saw through the tangle, he had another startling by Cuthbertson's gaze becoming gradually fixed upon the door in a hard stare, by his suddenly rising to his feet, and then by a sharp cry behind him.

For an instant he hardly knew where he was standing, and the next moment he saw Cuthbertson and his guest locked in each other's embrace. Then it all dawned upon him—how he had been the means of bringing the two dreamers together.

The old man sobbed on his son's breast, while the younger man wept.

The housekeeper came in to see what was the matter, and Willett answered the note of interrogation in every feature of his face by saying:

“I will tell you all about it hereafter, Mrs. Pegwell; it is too extraordinary to tell now. You will then think a man's tears pardonable;” for he too was using his handkerchief.

When Mr. Willett was able to compare father and son he was struck with their resemblance one to another, and wondered he had not noticed certain striking traits in the old gentleman that he had often remarked in Cuthbertson. Both had the same shape of forehead, and both the same kind of eye—sunken, that is, or made to appear so from overhanging eyebrows.

After awhile the three retired to Willett's room, where they talked the night through. The old man sat by his son's side and either held his hand or touched his arm all the time; and when the young man was not looking his eye would rest upon him with a fond, searching gaze. He did not talk much; indeed, no one did. They all seemed a good deal lost in thought and wonderment. But every now and again a question would flash across the father's mind. One of the first he asked was—

"But, Willie, why did you change your name?"

"Because"—the answer came slowly—"when you cast me off I had nobody but her—Marion; and when she died it seemed to bring me nearer to her."

"Then she's dead, Willie?"

This was said in a low, solemn tone.

William answered, a big pause betwixt each word:

"Yes, father, she died soon after."

Silence ensued. Then the young man continued:

"After that I was so lonely and so wretched that, being one night on Waterloo-bridge, I was tempted to drown myself. However I didn't, and then I used to dream that I saw her, and she always told me to come to the bridge on Christmas eve, and something would come of it."

"But why did you not come home, Willie?"

"I went once, but I saw strangers in the old house and mother's grave in the churchyard, and they told me you were dead, too, so I could not bear to go again."

"We were fated to be at cross purposes," replied the old man. "The people in the house were only there to keep it in order for you, for it was your mother's house, and now it is yours; and there is a nice bit of money too, for I have never touched it, although I might have done. I determined that, if I had saved nothing of my own to leave you, you should have your mother's bit of property."

"You have been too thoughtful of a disobedient son, father," said William with emotion.

"Not so, boy; mine was the wrong."

"No, no!"

"Yes, it was, Willie. I ought to have known that it was in

the Stathers to dare everything for one they had given their love to. Besides hadn't I done the same thing myself, wedded the woman I loved in spite of my father?"

"Well, father, we won't dispute about it: its over now."

Presently the old man said—

"You'll come back with me to Birkholm at once, won't you, William? There's no place like it. Let us start there afresh with the new year. You and I can make it bloom and blossom again as of old."

"Nothing should I like so well," replied the young man. "I never forget the old place as I last saw it—the blue smoke curling above the trees and the kine standing beneath the trees by the beck."

"That's it, boy: that's it!" exclaimed the other with exultation.

And it was as they said. And during the year Willett came down to Birkholm to see the two dreamers in their old home, and he liked the place so well that not long after he settled near-by himself. He never, however, quite overcame his astonishment at finding himself—him, a born Londoner—settled in a rural parish north of Humber; but he used to have his joke, and a quiet dig at his friends too, by saying it was "Kismet."

Poetry.

RONDEAU.

"Light, more light!" the poet cried,
As on the bed of death he sighed
For that which all his life he'd sought;
And as he'd found, by it had wrought
In hope thereby all men to guide.

And who that hath life's dim way hied
With yearnings to the better side,
But hath at times sighed, half distraught—
"Light, more light?"

Dark places yet on earth abide,
And darksome deeds are still allied
With nobler things, that long since ought
To have raised men up to higher thought,
And still the cry sounds far and wide—
"Light, more light!"

E.

Reviews.

The School Garden. By Professor ERASMUS SCHWAB.
New York : M. L. Holbrook & Co.

This little book is what it purports to be on its title page, "a practical contribution to the subject of education." The author, who is Director of the Military College of Vienna, advocates the addition of gardens to every school, both country and city. He urges this from considerations of health, and also from an intellectual and æsthetic point of view. He would not only have this garden-girdle to every school, in order to let children grow up amid the sanitary influence of flowers, but so that they might be taught the elementary principles of cultivation, and instructed in regard to plants and minerals. The author's ideas have been largely adopted in Austria and other parts of Germany, and with good results. Attention has also been given to the subject in America, probably in England also to some extent ; but there is still wide room for enlightenment in this respect, which "The School Garden" is well calculated to give.

Lohengrin, Musically and Pictorially Illustrated. By J. P. JACKSON.
London : David Bogue, St. Martin's Place.

Mr. Jackson has done a good work in bringing out this edition of one of Wagner's most favourite operas. The great composer's works are too little known in England, and Mr. Jackson's desire is evidently to popularise them ; nor could he have gone a better way about it. He not only gives the chief musical gems of "Lohengrin," but accompanies them with the legend and the poem, the latter translated from the German by himself. The "gems," for voice and piano, are arranged by F. Manette Jackson. In addition to these features there are upwards of a dozen pictures to illustrate the text ; many of them full-page size. The music is clear, the whole well got up, and forms a suitable volume for a Christmas present. It may be had at the office of this publication.

Facts and Gossip.

DR. B. W. RICHARDSON recently delivered a lecture before the Ascham Society on the subject of "The Temperaments in Relation to Education." Like all his utterances, it was full of thought and suggestion ; but the doctor is more trustworthy as a guide in matters of hygiene than in those relating more nearly to psychology. His analysis of the temperaments was tolerably clear until he came to define the shapes of heads as depending on temperament. Did not the doctor know that this was pure imagination ? and that his asser-

tion, that from a study of the temperaments "an intelligent phrenologist" could make exceedingly accurate analysis of character, was a mere slur to get rid of a difficulty? Could he from his life-long study of the temperaments do the same? In the words of Mr. Daniel Grant, his chairman, we say: "It won't do, Doctor!" Theories based on the casual examination of a lot of skulls at Hythe are not trustworthy for scientific purposes. Dr. Richardson might do much to advance the cause of education if he would get rid of his prejudices and look the question of phrenology boldly in the face; because when he talks of temperaments, and what an acquaintance with them is capable of doing for education, he clearly has his eye on the knowledge the phrenologist has at his fingers' ends. We mean no disrespect to the Doctor when we assert that his opposition to phrenology is based on ignorance—ignorance pure and simple. He has never given that careful study to its claims, which no man should fail to do before he ventures to speak against it. Whatever its shortcomings, it is based on a sounder substratum of facts than the whole of the pharmacopœia.

A CORRESPONDENT of *Nature*, writing from Japan, recently suggested a rather curious subject of inquiry. He had found by extended observation that the circular skin-furrows on the human finger-tips exhibit such differences of form as not to be alike in any two individuals, but at the same time show certain similarities in persons of the same or related races. A mark of the finger-tip can be taken with printer's ink quite distinct enough to show the peculiarities of marking under a moderate magnifying power, or even to the naked eye; and it was suggested that such marks might not only furnish a means of identification, but that by taking numerous impressions from the finger-tips of individuals of different races, and submitting them to scientific examination and classification, important ethnological conclusions might be reached.

On the same subject, Sir W. J. Herschel says:—"I have been taking sign-manuals by means of finger-marks for now more than twenty years, and have introduced them for practical purposes in several ways in India with marked benefit. The object has been to make all attempts at personation, or at repudiation of signatures, quite hopeless wherever this method is available. The ease with which the signature is taken and the hopelessness of either personation or repudiation are so great that I sincerely believe that the adoption of the practice in places and professions where such kinds of fraud are rife is a substantial benefit to morality. I may add that by comparison of the signatures of persons now living with their signatures made twenty years ago, I have proved that much time at least makes no such material change as to affect the utility of the plan. For instance, if it were the practice on enlisting in the army to take (say) three signatures—one to stay with the regiment, one to

go to the Horse Guards, and one to the police at Scotland Yard—I believe a very appreciable diminution of desertions could be brought about by the mere fact that identification was become simply a matter of reference to the records. And supposing that there existed such a thing as a finger-mark of Roger Tichborne, the whole Orton imposture would have been exposed to the full satisfaction of the jury in a single sitting by requiring Orton to make his own mark for comparison. The difference between the general character of the rugæ of Hindoos and of Europeans is as apparent as that between male and female signatures, but my inspection of several thousands has not led me to think that it will ever be practically safe to say of any single person's signature that it is a woman's, or a Hindoo's, or not a male European's. The conclusions of your correspondent seem, however, to indicate greater possibilities of certainty. In single families I find myself the widest varieties."

DR. GIBBON, medical officer of health for the Holborn district, in his report for the past year, states that a Jew's life in London is, on the average, worth twice as many years as a Christian's. The Hebrews of the metropolis are notoriously exempt from tubercular and scrofulous taint. One rarely meets with pulmonary consumption amongst them. The medical officer of one of their large schools has remarked that their children do not die in anything like the same ratio as Gentile children; and in the district of Whitechapel the medical officer of health has reported that on the north side of the High Street, occupied by the Jews, the average death-rate is 20 per thousand, whilst on the south side, occupied by English and Irish, it is 43 per thousand. This may be accounted for by the fact that the Jews, as a rule, pay a great deal of attention to education; they are, moreover, cleanly eaters.

RICHARD WAGNER, the great composer, has published a little treatise, entitled "Religion and Art." Although the name is somewhat misleading, its subject-matter is of a kind to justify the title. The work had its origin, he tells us, in the great art pilgrimage of so many thousands to Bayreuth, four years ago, to witness his remarkable Trilogy. The little town was not prepared for such an extra population, and a sort of famine was experienced. The pilgrims complained that they could not find enough to eat, or at all events, not enough substantial and nourishing food. "The Master," as his admirers call him, pondered much upon this phenomenon, and finally came to a conclusion, which many physiologists share with him, that the majority of human beings eat a great deal too much. This is not all. He announces that his *Parsifal* will be executed at the Bayreuth Theatre in the summer of 1882, and hopes that the multitudes who flock to it will not sensualise their artistic perceptiveness and receptivity by greedy care about meat and drink.

Humanity requires, the poet-musician contends, a grander and simpler food. He appeals to his reverent disciples to renounce the enjoyment of demoralising flesh-meats, and to strive in future to content themselves with "the higher food," that is, with vegetables only. It speaks not a little in favour of such a diet, that the great composer is enabled by experience to recommend it, instead of one composed of "the corpses of murdered beasts."

Correspondence.

To the Editor of THE PHRENOLOGICAL MAGAZINE.

PHILOSOPHICAL NECESSITY.

The question of responsibility depends much, if not entirely, on the meaning of the term, or idea intended to be conveyed. There is an eternal sequence in nature, a chain of necessity in which we, like everything else, must take the consequences of what is our destiny or fate, but practically we are forced to hold men to be responsible. A dangerous lunatic we confine, but do not hold him to be absolutely and morally any more than physically responsible. Nature induces people to do well, and frightens them for doing evil. We hold a government, private or general, to be responsible to do all that is possible for the welfare of the governed, and again the governed to be responsible for their conduct to those who govern, that is to the law. But all we mean, mentally or morally, is that all should do their best, and avoid doing or being an injury to society, or society in self-defence must dispose of the offender, not vindictively, but simply as you would deal with any other matter offensive to the community; but wanting knowledge, and the knowledge of cause and effect, and with man, as a creature of circumstances, we err and want just compassion, and "What he cannot help in his nature, you account a vice in him" (*Coriolanus*). Philosophy is the best lesson inhumanity.

H. G. A.

Answers to Correspondents.

G. W. (Manchester).—You cannot do better than begin with the "Self-instructor" or the "Manual of Phrenology." They are better for a beginner than a larger work.

J. F. (Hull).—There is nothing like the study of science for the development of the perceptive faculties. It does not matter much whether you take botany, geology, or astronomy.

THE
Phrenological Magazine.

FEBRUARY, 1881.

SIR WILFRID LAWSON.

Sir Wilfrid Lawson is so well-known that if a phrenologist, an entire stranger to him, were to give his character true to



life, unbelievers would say "It takes no phrenologist to tell that—everybody knows it." I have not personally examined

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the baronet's head, although I examined his father's and those of some of his brothers and their families when lecturing in Cumberland some years ago. There were in nearly all certain marked features, which seem to reach their climax in Sir Wilfrid. Even the inexperienced can see that his head is very marked in shape, while the trained phrenologist will be quick to detect the strong points of his character.

In the first place his head is particularly prominent in the crown and on the top, above the ears. The phrenological reading of this part of his head is that he feels strong in himself and doubly strong when he has justice to back him and a just cause to advocate. This portion of the head denotes ambition, desire for notoriety, self-appreciation, manly consciousness, willingness to take responsibility, presence of mind, self-government, determination, power of will, perseverance, moral courage, sense of obligation and disposition to defend the right and oppose error. There are four organs in this part of the head which are very prominent: they are Approbativeness, Self-esteem, Firmness, and Conscientiousness. They are very apparent in the portrait, and not even his worst enemies can deny that they are strong qualities of mind, and stand out in bold relief. Without them he could not have persevered as he has done for so many years in an unpopular cause, without flinching and without in any way trimming his sail to catch the popular breeze.

His head is comparatively narrow in Secretiveness, which allows him to speak with great freedom and openness of mind, often even saying more than is necessary in order to make himself understood. Destructiveness is not large: cruelty and revenge are not a part of his nature. He has more of the qualities that incline to good-nature than to temper and hardness. The organ of Combativeness, situate a little backward of the top of the ear, is more distinctly developed. The natural language of it is to throw the head up and a little on one side when in debate. This faculty makes him an opponent and a lover of discussion, and in his element when he has something to overcome. If he followed the natural bent of his mind he would prefer not to have a quiet, easy life, without difficulties to conquer or obstacles to surmount.

The whole of the coronal brain is high and fully developed. It gives an elevated tone to his mind, disposes him to put a high value on his character, and stimulates him to manly and noble actions. Conscientiousness is his leading moral quality, which makes him love truth and right, whether he believe the creed and conform to the ceremonies or not. Hope also is a large organ, giving him enterprise and a consciousness

that he is going to succeed. It is an element in his persistence. Benevolence is also a strong faculty. He is philanthropic, without being maudlin in his sympathies.

The breadth of the head at and above the temples indicates taste, sense of beauty, and versatility of talent ; also wit, sense of the ludicrous, and considerable imagination. The faculty to perceive incongruity, to discriminate, and see and expose the weak points in an argument, however, is stronger than imagination. This keenness of insight, combined with but a small organ of Imitation, imparts a good deal of originality to his character and mode of thinking. He is one to kick against the conventionalities of society rather than to follow them implicitly and without question. He cares nothing for show or ceremony.

He has much comprehensiveness of mind and considerable ingenuity in debate, being able if one argument fails to quickly construct another. Love of the sublime and grand is also a strong feature, and enables him to take large and somewhat extravagant views of things. This gives him considerable daring in his conceptions, and boldness in his imagery.

The prominent, full, and high forehead indicates an active, strong, available intellect. The perceptive faculties are full, giving him good verbal memory ; also a strong memory of facts, history, anecdotes, places, and time. His powers to arrange and organize are good. Language is large, giving extra powers of speech. Comparison and Intuition are very large, giving ability to criticise, analyse, compare, and contrast ; also great insight into character, power to understand men, foresight, penetration, quick perception and apt reply.

The whole organisation is a working one, there being a high degree of the mental and motive temperaments. He is in his element when he has something to do. His motive temperament gives love of action, and his mental, intensity, susceptibility, and clearness of mind. There is so much availability of power, that few men are able to do so much work with so little chafing or irritation as he is. Longevity must be a characteristic of the family, and he has the indications of a yet long and active life.

L. N. FOWLER.

Our home joys are the most delightful earth affords ; and the joy of parents in their children is the most holy joy of humanity. It makes their hearts pure and good ; it lifts men up to their Father in heaven.—*Pestalozzi*.

THE RELATION OF PHRENOLOGY TO RELIGION.

There is a class of people, respectable in point of numbers, and more than respectable in their moral influence, who meet every presentation of a new truth with the query, "How will it affect religion?" and in direct proportion to their disquietude on this point will be their unwillingness to admit it to their consideration. Comparatively few persons are hospitable to new ideas. The majority look askance at them and treat them with suspicion, as so many mental vagabonds unworthy of even temporary entertainment. And especially is this the case where religious prejudices are strong, and the new truth has an appearance of antagonism to their preconceived ideas. This is still, and strikingly, illustrated in the case of phrenology. Not that phrenology is new. After more than eighty years of investigation and teaching the newness has considerably worn away. Yet it is still in the position of a doctrine whose successes have been only partial, whose advance has been broken by retrogression, and whose claims are practically unknown to large masses of the population. Under these circumstances, with the sentinels of our religious life primed with their challenges, it may not be unwise to give back the password of friendship, and assure them that, as far as we are concerned, there is no hostile intention.

For phrenology is not a form of materialism. We only treat of the brain as the *organ* of the mind. What the mind is we do not profess to say. All we say is that we know of no mental manifestation apart from a physical basis and unaccompanied by physical changes. Our states of consciousness, our sensations and emotions, are incapable of divorce from molecular states in the brain, and all changes in consciousness, and all expressions of will, are inseparable from coincident molecular changes.

I think. The process is purely mental in so far as the action is confined to myself. I do not communicate my thoughts by word or gesture. No muscular action accompanies my cogitation. But a physical change has taken place in my brain. Some ministrant molecules have perished in the service of my thought, and the brain needs repair before it can be in the same state of rounded perfectness that it was before my effort. Disguise it from ourselves as we may, our most ethereal thoughts, the subtlest conceptions of the poet, and the most matter-of-fact plannings of the merchant, are marvellously dependent on bread and cheese and water. The wind may come from heaven which makes the "going" in

the tops of the mulberry trees, but the trees themselves are of the earth, and built of very earthy substances.

Take the child, "mewling and puking in the nurse's arms," and you will find a diminutive frame and a diminutive brain. But let it grow, and with every increase in its physical development you will have an increase in its functional power. As its food is transmuted into the living particles of its body, rounding its brain, and fitting and filling its frame, you will have an increase, not only in muscular strength, but in mental ability. If both grow together, the body and the brain, the child will syllable its first words while essaying its first excursions; the boy, stouter of limb, will be of stouter intelligence, while the man will crown with nature's mental powers a mature physical development. If, by the overshadowing of hereditary causes the texture of his body is coarse, that texture will show itself in his brain, and inevitably evidence itself in all his mental avocations. If, by a more deplorable defect, his brain never reaches to a weight of more than one and a half pounds, he will be buried in an irrevocable idiocy. While, on the other hand, if he manifest a high cerebral development, we invariably find him possessed of large mental and moral capacities. While an infant his cerebellum is confined and meagre, and sexual passion is unbegotten, and only as that organ enlarges do we notice the overspreading of his adolescent desire, and the enthronement of the sexual instinct. Under these circumstances, and a variety of others, we feel justified in estimating the general capacity of the brain from its texture and outline, and its special endowments and characteristics from the size of its specific organs. This is not materialism.

Neither is phrenology a form of fatalism. It knows nothing of absolute necessity. It proclaims likelihood and proneness, but nothing more. It takes an organization, and from the poorness of its coronal region, and the ample development of certain of its selfish propensities, it forecasts danger; but it does not assert for it a future of lying or of theft. It merely declares the tendency, the probable result of the uncorrected operation, of those propensities. It makes no attack on moral responsibility; it is rather the watchman upon the wall of the moral nature giving warning of the approach of the enemy, or the general, inspecting his own lines, with a view to strengthening the weakest points. There are instances in which it challenges responsibility, but these are the exception; instances in which the subjects have ^{inter-} possessed those faculties which go to make up the moral ^{to the} sense, and consequently have never realised their moral

accountability. These are moral ideas. To expect high virtue from them is as unreasonable as to expect high intelligence from the poor Cretin who wanders his Alpine village. But these are the exceptions, the stray abnormal developments which mar the race, and call, not for its censure, but its compassion. The masses, as phrenology views them, are born capable of a higher or lower moral development, but certainly capable of obedience to the great underlying principles of our Christian ethics. There is no more necessity for a man with strong passions and propensities, and somewhat impoverished in the region of Benevolence, Veneration and Conscientiousness, to become a criminal, than there is for the man with weak passions and propensities, and his moral faculties large, to become a saint. It is true that there is a strong predisposition or tendency in each case, a fatal gravitation on the one side, and a gracious aspiration on the other; and it is also true, that, as far as our experience goes, the tendency too often passes into actual conduct. But it is nevertheless a fact that the downward gravitation can be checked, and the upward tendency repressed, by counteracting faculties, even without the play of those spiritual influences which make up for virtue in so many.

Where then is the fatalism? It is admitted, more emphatically in religious circles than in any other, that every life, every character, has its weak side, as every citadel has some vulnerable point most favourable to the attack of the enemy. No man is equally strong all round. As the strength of a chain is no greater than the strength of its weakest link, so, in some respects, is the moral character no stronger than its weakest point, and it becomes of infinite moment to the man who wants to stand four-sided to virtue that he should know the slope or wicket which most needs strengthening. This knowledge phrenology professes to give, more or less completely. It does not make the facts, it does not create the weakness, it only indicates it, and suggests how the forces of the citadel may be best disposed to guard its frailest point. It does not say that it has done all when it has blown the trumpet of alarm. It leaves the man to supplement his own innate resources with what power he can in the conflict of his life. Whether he draws his aid from the environment of a pure society, or from the stores of his own will, or from the well-springs of a divine sustenance, is not the business of phrenology. That is the business of the religionist, and not of the phrenologist as such.

On the other side, phrenology reveals ability, faculty, as well as disability and defect. It may be that man is more

liable to underestimate his deficiencies than his endowments, but it is certain that too many have shown a strange obliviousness to their own capacities, while others, feeling their latent strength, have been kept back from its exertion by an unfortunate lack of self-confidence and self-esteem. The marks of waste are everywhere about us. The sun shining in his strength rays out the vast majority of his beams into empty space, only a few falling upon his attendant planets, and many of these being lost or unremunerative, because incandescent, worlds. So there is a vast waste going on in the world, a waste of time, of energy, of money, but most of all an inconceivable and deplorable waste of mind and moral faculty. In every department of life we have square men in round holes. We have merchants who should have been ministers, and ministers who should have been merchants. We have physicians paralysed by large Cautiousness, and bewildered by limited perceptive powers, while we have statesmen dominated by Acquisitiveness and Self-esteem rather than by Conscientiousness and Benevolence. And beside all this we have men capable of filling holes, who fill none at all. Phrenology desires to rectify this. It says to the intellectual paralytic, doubtful of his own powers, supremely distrustful of himself, "take up thy bed and walk." It tells him that he *can* walk, and run too; that he has powers and that it is only his want of development in one region—the region of Self-esteem—which he must cultivate, which holds him back. It tells the man who has never suspected his abilities that he is possessed of faculties which will lead him on to competence, or, what is better, to the material service of his kind. It tells another of his moral equipment, and bids him unwrap the napkin, and apply his talent to the world. This is surely not fatalism. If there be fatalism it is behind phrenology, and phrenology only reads the hieroglyphics which it traces upon the man.

Before leaving the subject it may be well to summarise, in a few brief words, several of the other services which phrenology tends to religion. It provides a sound scientific basis for the moral education of the child. It suggests the likeliest gate to the consciousness of the man, and that aspect of moral truth which is most likely to lay hold upon his being, and become a motive power in his life. It casts out, by revealing its origin, that abnormal foreboding which is the result of the predominance of Cautiousness over Hope, and which is a burden of death to so many who are unenlightened as to its cause. It accounts for that maimed and often intermittent piety which so often obtains, by pointing to the deficiency of one or more of the trinity of organs which, in

their fulness, make for a rounded and undisfigured life—the three great organs of Veneration, Conscientiousness, and Benevolence. It indicates how one man may complement another, and even be a revelation to another, in his moral experiences, and throws a striking illumination on the necessity of a many-sided religion to satisfy the needs of a many-sided humanity. And last of all, but not least of all, it supplements every anticipation of an advancing future, and the ultimate regeneration of society, by showing that, in proportion as we enlarge the faculties that are good within us, and diminish to their serviceable proportions, the propensities that are doubtful, shall we be cleansing the line of being, advancing the foothold of the succeeding generation, and fulfilling the prophecy of the race.

H. VIAN WILLIAMS.

THE FACE AS INDICATIVE OF CHARACTER.

A CHAPTER ON NOSES (*continued*).

We finished in the January number with the Celestial nose. We will next speak of the Apprehensive nose. It has been shown that the best proportioned and most beautiful noses are one-third of the length of the face. Many noses vary, some in one way and some in another, from this proportion. There is a corresponding variation of character.

The perpendicular length of the nose from the root downwards (see fig. 25, *a b*), indicates the quality of *Apprehension*. The term, however, does not express very perfectly the nature of the trait to which it is applied. The faculty of which it is the sign imparts, when fully developed, not only quick apprehension, which—acting with Caution—keeps one on the alert and ever on the watch for dangers ahead, and is not unfrequently connected with keen insight into character; also with a forecast that anticipates the future with respect to the intentions of men, and the turn events will take. When in excess it betokens suspicion and distrust. Indeed, the word suspicion itself would not be an inappropriate name for the quality, but that it is generally used in a bad sense.

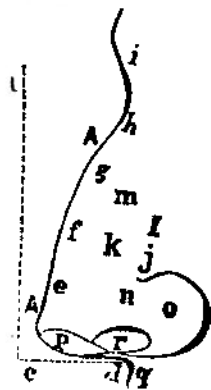


Fig. 25.

An undue downward extension of the nose, caused by an excessive development of Apprehension (Fig. 26) forms what has been called the Melancholy nose, which indicates a tendency to despondency and gloom. This type of nose was a marked feature in Calvin, Knox, Dante, &c.

The horizontal length of the nose from the lip outwards (Fig. 25, *d c*) is the sign of Inquisitiveness. When the sign of Apprehension is small and Inquisitiveness is large, the nose is inclined to turn up, as it commonly does in children, who are very inquisitive, but have, in general, very little suspicion (see Fig. 24).

Persons with this sign large are of an inquiring disposition, ask a great many questions, and are fond of seeing and examining for themselves. They not unfrequently have great memories, but they are not very scientific in their attainments unless the trait is accompanied by Apprehensiveness, which is more inclined to question the value of facts.

Where both Apprehension and Inquisitiveness are large, the one striving to extend the nose perpendicularly, the other pushing it out horizontally, there sometimes occurs a thickening of the end of the nasal organ, forming what is often designated a "bottle nose."

A thickened or swollen condition of the end of the olfactory organ often arises from an irritated or inflamed condition of the internal organs, caused by a too great addiction to the bottle. But in this type of nose, form is invariably accompanied by colour, as in the case of the famous nose of Bardolph.

"When thou ran'st up Gad's-hill," says Falstaff to his follower, "in the night to catch my horse, if I did not think thou hadst been an *ignus fatuus*, or a ball of wildfire, there's no purchase in money. O thou art a perpetual triumph, an everlasting bonfire light! Thou hast saved me a thousand marks in links and torches, walking with thee in the night betwixt tavern and tavern; but the sack that thou hast drunk me would have bought me lights as good cheap at the dearest chandler's shop in Europe. I have maintained that salamander of yours with fire any time for these two and thirty years; heaven reward me for it!" The true bottle nose is a costly luxury.

The prominence of the nose undoubtedly indicates strength, energy, power. Prominent noses are of different forms, according to the relative development of different parts of the ridge. In all of them we find a disposition to fight, dispute,



Fig. 26.



Fig. 27.

contend, overcome, or in one form or another manifest a combative spirit. According to Dr. Redfield, Combateness has three forms of manifestation, namely, Self-Defence, Relative Defence, and Attack. Noses, therefore, in regard to the prominence of the ridge, may be divided into :—

1. Defensive noses,
2. Irritable noses, and
3. Aggressive noses.

The sign of Self-Defence is indicated by the anterior projection of the nose just above the tip (Figs. 25 *e*, and 28), caused by the prominence of the nasal bone at that point. This trait manifests itself in the disposition to stand upon the defensive, and when in excess to oppose, contradict, and be always on the opposite side. One with this faculty predominant is indisposed to be touched or leaned upon ; is easily provoked, and has a stronger dislike to interference than people in general. On his own ground he will fight to the death, and in argument is pretty sure to have the last word. Its national manifestation finds expression in the adoption of the motto : " Defence not defiance."



Fig. 28.

The faculty of Relative Defence or the disposition to defend others, is indicated in the ridge of the nose, at the middle part, just above the sign of Self-Defence (Fig. 25 *f*). It disposes a person to espouse the cause of others, and to be their champion when attacked. As one with large Self-Defence is easily provoked by anything like encroachment upon his individual rights, so one with large Relative Defence is easily irritated by anything like encroachment upon the rights of others, particularly of women, children, or the weaker portions of humanity, who are not well qualified to defend themselves. In persons of a highly nervous temperament it often leads to excessive irritability.

The faculty of Attack, constituting the aggressive nose, is indicated in the upper part of the ridge of the nose, just above the sign of Relative Defence (Fig. 25, *g*). As the name implies, it gives an aggressive disposition. One with the sign large loves to attack, to rouse up strife, to make war in one way or another. A pugnacious individual—one who is in the habit of "picking quarrels," as it is said—has this sign large. Such a person is provoking and vexatious, particularly to those who have large Self-Defence and Relative Defence. He does not allow others to remain quiet in their persons or opinions. If he be a vulgar, gross man, he attacks

their persons ; if an intellectual, refined man he attacks their opinions, and is a "controversialist."

The Romans had the combative faculties very large, particularly Attack, as shown in their aggressions, and as indicated in the form of their noses. In the English face we see the aggressive nose, in the French the Irritable, and the characters of the two nations agree with these characteristics. The English have been an aggressive, conquering people, the French more a liberating, championing people.

Turning now to the base of the nose, but looking at it still in profile, we observe that the line of its horizontal projection varies almost infinitely, and that while in some noses the septum or partition betwixt the nostrils is entirely hidden by the alæ or wings, in others it extends below them, and that its outline varies also in different individuals. It is important to know what these varieties of form signify. In the downward extension of the septum is indicated the power of discovering, analysing, and combining—three very important intellectual faculties.

The faculty of Discovery is indicated by the downward length of the anterior portion of the septum, as indicated by Fig. 29. It gives the disposition and ability to invent and discover, and a love for new things. Those who possess the sign are inclined to think for themselves more than those who do not have it, and their originality will accord with the general cast of mind and other strong faculties. "With some," says Dr. Redfield, "the power of Discovery will lead to inventions in the arts ; with others to discoveries in science ; with others to new ideas in theology ; with others to originality in common business matters ; with others to finding things that are lost ; with others to expeditions of exploration and discovery ; and with others to originality in everything."

The faculty of Combination has its sign just behind Discovery, and is indicated by the length of the middle of the septum, as indicated in Fig. 30. A person with the sign large is capable of combining and generalising ; whereas a person with it small is deficient in these powers. Combination gives facility in connecting words as well as ideas, so that a person endowed with the faculty has the ability to discourse connectedly and at length.

Analysis is indicated by the length of the posterior part of the septum, where it joins the lip, and when



Fig. 29.



Fig. 30.

large it causes a prominence of the top of lip, as shown in Fig. 31. The faculty is large in those who manifest an ability to find out the constituents of things in either mental or physical science. The faculty gives great penetration into the inner essence of things; and one who has it large makes distinctions, and perceives and reasons with much more minuteness than one who has but little of it. The length of the part of the septum indicating the faculty of Analysis may be accurately observed by pressing the finger against it, and seeing how far it descends.



Fig. 31.

THE PHYSIOLOGICAL PATHOLOGY OF THE BRAIN.

J. G. Davey, M.D., of Bristol, in an article in the *Journal of Psychological Medicine and Mental Pathology* (Vol. V. Part 2) very ably argues the case of phrenology as against the "discoveries" and theories of modern physiologists, but more particularly those of Drs. Hughlings-Jackson, Ferrier, and Brown-Séquard, and as there is a vague notion in the public mind that something which one or other of these gentlemen has discovered materially affects the credit of phrenology we purpose reprinting the paper, making only a few omissions.

Many are aware (says Mr. Davey) that the gentlemen named enjoy the credit of having added not a little to our knowledge of cerebral physiology and pathology; it is, however, a source of regret that teachers of medical science of such recognised ability and of so high a reputation should be found the advocates of opinions so very antagonistic or contradictory as are those of the two first-named, when contrasted with Dr. Brown-Séquard's published views on the same subject. The "localisers," as Drs. Hughlings-Jackson and Ferrier are named, would seem to this present time to enjoy the larger amount of support or credit; whilst Dr. Brown-Séquard's "inhibitory" theory is, comparatively considered, nowhere. I hope to prove by the following remarks that it is more than probable, the largest amount of physiological and pathological truth is to be found away from or outside the teachings of each, or of all, the three gentlemen here named. Dr. Hughlings-Jackson, it is well-known, has made his mark in the profession by an attempt to localise the abnormalities of the brain; to assign to the morbid changes of its several parts certain and specific signs and symptoms. His theory of "discharging lesions" as well as of temporary and permanent organic changes occurring to the cerebral mass and its several parts—with their individual outward signs or symptoms, as seen in

epilepsy, tetanus, chorea, &c.—his theory (I say) is well known, and accepted, in great part, by the profession. Let me add that the pathological investigations of Dr. Hughlings-Jackson and the experiments of the Ferrier school have this one feature in common—viz. both or all such (investigations and experiments) are designed and prosecuted with the view to demonstrate the sure and certain *localisation* of both the motor functions of the brain—as well as of those several morbid changes occurring to this same organ, the presence of each one of which is said, as has just been stated, to be indicated in an especial manner by well-marked signs or symptoms. Many recent writers have expressed themselves in the strongest terms in favour of Dr. Hughlings-Jackson's pathological doctrines; and many more have conceived a marvellous affection for the vivisections of Dr. Ferrier and their results; and these results the press, both general and medical, has declared to be "the greatest scientific discoveries of the present age," and to have surpassed in importance "all preceding knowledge." Dr. Carpenter, the long-continued opponent of Gall and Spurzheim's "localisation" teachings, is now constrained to accept, with even much laudation, the "data" of Broca, Hughlings-Jackson, and Ferrier, in so far as *aphasia* is concerned. The "admirable experiments" of the last-named he (Carpenter) affirms have afforded some reason to believe in the "localisation" so long and persistently denied by him, and that the time is now come to "modify" or "abandon" his former and long-cherished antagonism to Gall, Spurzheim, and the Combes. As before intimated, Dr. Brown-Séquard has put himself in a position of direct hostility to the teachings of both Dr. Hughlings-Jackson and Dr. Ferrier, and this being the case it is surely expedient, if not essential in every way, to ponder closely and well the relative claims of the gentlemen named on that profession of which they are, in any case, eminent and much-honoured members.

There is, as I believe, a way, and but a single way, by which we have it in our power to escape the dilemma into which Drs. Hughlings-Jackson, Ferrier, and Brown-Séquard place us. There is no help for us but to accept, as we are bound to do sooner or later, the physiology of the brain as taught by Gall and Spurzheim. To this we must come or forfeit our claims to rank as physiologists. Physicians and surgeons of whatsoever rank, or of no kind of rank, may continue to call *phrenology* "rot," and to laugh at it—may pretend to scorn those who have devoted the years of a fairly long medical life to its investigation—but the *truth* will live, will have its due. Do we accept the doctrine of progression, of evolution, and fail to attach to it the inevitable conclusions? Do these not demonstrate *bona fide* that the brain of man—so ample, so wonderfully contrived, so exquisitely protected, so well nourished as it is—*must* execute offices in the animal economy of the most important and indispensable kind? Strange indeed it is that this marvellous structure (the brain), these cerebral hemispheres in man—the crowning points, as they are, in his organism—should at this day be so much disasso-

ciated with their true and normal functions, so much denied their fair and very legitimate offices in the animal economy! The functions of the brain's cortex are not yet estimated as they should be, and the consequence of the many false and mischievous views taught in connection with its physiology is simply this—its pathology is seriously at fault. We are taught by a host of the best men of the day that our knowledge of this complicate nervous system of ours has been reached by degrees inconceivably small. From the zoophyte to man we see a gradual increase of parts, a slow yet sure amplification of nervous structure. Is not the embryo life of a given animal the index, the type, of all beneath that animal in the scale of living beings? Are we not assured that the perfect brain of man has in its mode of growth—its accretion and development—assumed in due order of sequence so many temporary states of being, each one of which is the representative of the permanent type of the lower forms of life, as seen even in fishes and reptiles, to say nothing of birds and mammals? Is it not taught in our schools that nature starts from the most simple to reach the most complex, and exhausts, as it were, the structure of all other animals before she arrives at her *chef d'œuvre*—man?

Now, In what consists this the grandest achievement of nature's laws?—In what, but the development or creation in the *genus homo* of the anterior and superior cerebral lobes, the superadded instruments of altogether new functions—functions which, being altogether mental, *i.e.* of an intellectual and emotional nature, and not concerned else than sympathetically, so to put it, in the lower or merely animal movements—the automatic or excito-motory phenomena—can have but a very secondary relation to the morbid phenomena which belong to epilepsy, tetanus, chorea, and so on? From this point of view it is not possible to connect as cause and effect the diseased conditions found in the hemispherical ganglia (Solly) with the convulsive and nervous disorders named. The labours and discoveries of not only Gall, Spurzheim, and the Combes, but of Marshall Hall, Granger, Mayo, and many more, seemed threatened by something like an extinction; there appears a danger lest such labours and such discoveries may loose their fair and legitimate hold on physiologists. The long-known and accepted plan and arrangement of the nervous system in man and in mammals, as well as its acknowledged varieties and functional endowments, are sought now to be shrouded by experiments of a character at once so startling and damaging, that one is driven to claim the privilege of questioning the views advocated so persistently by Drs. Hughlings-Jackson and Ferrier.

In fact the mere presence of primary "motor centres" in and about the convoluted surface of the brain would of necessity disarrange all our accepted ideas of the anatomy and physiology of the cerebro-spinal system, as such are handed down to us; and which ideas bear the impress of a form of truth not to be shaken by a series of vivisections on the lower animals. To insist on "motor centres" forming parts of the "hemispherical ganglion" is to give a denial to the teachings of

our most accomplished investigators : teachings which are to the effect that the conscience in man and many animals—or what is the same thing, though more practically rendered, the intellectual powers and the higher emotions or affections of our nature—are located in the brain proper—that is to say, in the anterior and superior cerebral lobes ; whilst the sentient or mere animal endowments are the outcome of the cerebellum medulla oblongata and the parts adjacent : and what is more, that these higher and lower planes of nervous matter are united from above downwards by the peduncles of the cerebrum, and from below upwards by the inferior peduncles of the cerebellum. No one can doubt the perfect adjustment of those several parts of the cerebro-spinal organism, and their several yet mutually dependent uses in the animal economy—in other words their functional entirety or completeness.

The attempt to enrich the superior or convoluted brain surface, already so well provided with an especial force of its own, at the expense of the base of the encephalon and the medulla, &c., to the integrity of which we owe the excito-motory phenomena, must and will come to grief. That the evolution of the power especially connected with mind is dependent on the hemispherical ganglion, is rendered probable by the following facts : (1) In the animal kingdom generally, a correspondence is observed between the quantity of gray matter, depth of convolutions, and the sagacity of the animal. (2) At birth the grey matter of the cerebrum is very defective ; so much so indeed that the convolutions are, as it were, in the first stage of their formation, being only marked out by superficial fissures almost confined to the surface of the brain. As the cineritious substance increases, the intelligence becomes developed. (3) The results of experiments by Flourens, Rolando, Hitzig, and others, have shown that, on slicing away the brain, the animal becomes more dull and stupid in proportion to the quantity of cortical substance removed. (4) Clinical observation points out, that in those cases in which disease has been afterwards found to commence at the circumference of the brain and proceed towards the centre, the mental faculties are affected *first* ; whereas in those diseases which commence at the central parts of the organ, and proceed towards the circumference, they are affected *last*. The white tubular matter of the brain proper serves, by means of the diverging fibres, to conduct the influences originating in the hemispherical ganglion to the nerves of the head and trunk," including of course the extremities of both man and beast.

We see then that the cortex of the brain proper must be held to be the starting point of not only those powers or faculties called intellectual, but also of those essentially moral in their operation, that is to say, of our affections or feelings or emotions and passions. But of these we learn nothing from Ferrier, so far as his teachings have yet reached us. The hard and thoroughly practical labours, the ever famous discoveries, of Gall, indicated as these are in the words of Bennett,* cannot,

* Dr. J. Hughes Bennett, in the article "Physiology" in the *Encyclopædia Britannica*.

must not, be so shelved, so ignored, as some among us would have them. However, Bennett was but one of the many who in a time gone by gave good and earnest support to the first principles or groundwork of the phrenological school. To come down to this present time, we find Dr. Maudsley helping on the good cause of a sound psychology, and lending his aid to uproot or to get rid of the wild fancies and vain imaginings of the metaphysicians or immaterialists; and whilst doing this much we find him also putting a drag, and a sound one too, on "the teachings of Dr. Ferrier himself."

The late Sir H. Holland—although, like Dr. Maudsley, uninformed, or, it may be, prejudiced against a really practical psychology (phrenology)—confessed himself assured of the plural functions of the gray matter of the cerebral convolutions, whilst he failed to accept the evidence of Gall and his followers in regard to the location of the several primary qualities, intellectual and emotional, of the mind. The best among the metaphysicians—those very peculiar philosophers who will ignore matter and will give to airy nothing an habitation and a name withal—are without doubt growing into a knowledge of Gall's discoveries, and making what use they can of the principles and facts taught and proclaimed by him. That this is the case, I would refer, as an example to the *Study of Character*, including *An Estimate of Phrenology*, by Professor Bain.

Mr. Herbert Spencer, too, one of the most profound thinkers of the day, remarks: "No physiologist who calmly considers the question in connection with the general truths of this science, can long resist the conviction that different parts of the cerebrum subserve different kinds of mental action. Localisation of function is the law of all organisation whatever; separateness of duty is universally accompanied with separateness of structure; and it would be marvellous were an exception to exist in the cerebral hemispheres."

Let me ask, does Dr. Ferrier, or those who think with him, hope or expect to prove that physiologists of the mould of Gilbert Blane and Marshall Hall wrote or taught in vain, and that their experiments were failures? It has been demonstrated by many, and especially by those just named, that the inherent irritability of the muscular and nervous tissues (*i.e.* the contractile movements) or the excito-motory phenomena in man and animals "are strictly connected with the integrity of the spinal chord," and that all such "irritability" or such "phenomena" may exist separately from, and independently of, any cerebral or mental acts. This being the case it must be seen, and plainly seen, by all who desire the truth, that the effects of the vivisections practised by Dr. Ferrier are due only to the certain diffusion of the electric current employed by him throughout the cerebral mass of cat, dog, or monkey operated on, and the consequent excitation of the basic ganglia, *i.e.* the lower planes of gray matter; such ganglia being the *bona fide* "motor centres." On these the stimulus employed is exhausted, and hence the movements of whatever kind.

Those medical men taking an interest in this "localisation" question should read Dr. Dodds' *Historical and Critical Analysis in respect to*

the Localisation of the Functions of the Brain, to be found in successive numbers of the *Journal of Anatomy and Physiology*. On the authority, then, of Dr. Dodds, Dupuy, and even Hitzig, attach a high degree of importance to the very certain diffusion of the electric current employed, from the cortex to the base of the brain, and parts adjacent; and which "plainly enough throws discredit on the idea of the position of 'motor centres' in the cortex itself, to the exclusion of the basic ganglia so termed." Hitzig, we learn, is disposed to credit the blood-vessels rather than the white, the conducting tissue of the cerebrum, with this diffusion of the current; but whatever the source of such diffusion, the same must of necessity prejudice the results of the experiments performed. Dr. Dodds writes: "There can be no doubt that diffusion of the currents forms a possible explanation of some of the phenomena of brain electrification, and further that the danger of this must be directly, as the tension of the electricity used." By these words I understand him to mean that the danger or probability of such diffusion must be in proportion to the persistence and strength of the stimulation; and that such is really the case is shown by the investigations of Drs. Carville and Duret, who affirm, according to Dr. Dodds, "that by progressively increasing the strength of the stimulation we may obtain very different results; the electrodes remaining all the time at the same point." Now it is pleaded or claimed by Dr. Ferrier that in his latter experiments the objection taken to the diffusion of the electric stimulus applied to the *motor centres* (as he calls such) of the cerebrum is duly and completely, as I understand him, silenced and got rid of by "the use of the induced, in preference to the continuous, current for the purpose of excitation." But I fail to recognise this position; given the employment of the "stimulation," the mere form of it can signify but little. It may be there are those among us who, sufficiently enamoured with these new views of the physiology and pathology of the brain in man and the higher vertebrates, will accept Dr. Ferrier's views so far as the "induced" and "continuous" currents are concerned; but what can his supporters advance calculated to cover the crushing fact proclaimed by Dupuy? viz., In one experiment the nerves at the base of the brain were divided to prevent the transmission of nerve excitation, and yet they could still be excited by electrical stimulation of the cortex.

As additional elements in the question now being raised in regard to the nature and merits of Ferrier's views, I would add that: (1) The "motor centres" are said to differ in their position on the cortex by different experimenters; thus Furstner disallows Ferrier's centres; that (2) the response of the "centres" to the same measure of stimulation varies from time to time or occasionally. Dr. Dodds writes: "Sometimes centres whose action is *usually easily* demonstrated cannot be caused to react even by a powerful stimulus"; (3) Whilst the susceptibility of the posterior lobes of the cerebral mass is denied by some writers of eminence (by Carpenter, for instance), others have affirmed the contrary; thus "Dupuy has shown that in dogs electrification of points situated at the posterior part of the

cerebral hemispheres *will* give rise to *muscular contractions*" (Dodds). Furthermore, Hermann "denies" in the most unconditional manner "that the different movements produced on stimulation of different cortical areas drives us to the conclusion that the cortex forms the centre for those movements" (Dodds). Thus far it appears that the stimulation of any one or other portion of the cortex cerebri cannot be so localised as to call forth, simply and exclusively, the function of the part operated on. The evidence, then, as above shown, is altogether averse to the teachings of Dr. Ferrier; and such averse or negative evidence culled, as is seen, from the writings of Dupuy, Duret, and Hermann, was, strange as it may seem, put forward by the illustrious Gall himself, something like sixty years ago. In his *System of Phrenology* are found these words, viz., "It is a subject of constant observation that, in order to discover the functions of the different parts of the body, anatomists and physiologists have always been rather disposed to employ *manual means* than to accumulate a great number of physiological and pathological facts; to combine these facts, to reiterate them, or to await their repetition in case of need, and to draw slowly and successively the proper consequence from them, and not to announce their discoveries but with a *wise reserve*. This method, at present the favourite one with our investigating physiologists, is imposing from its *materiality*; and it gains the approbation of most men by its promptitude and its *apparent results*. But it has also been constantly observed that what has appeared to have been incontestably proved by the mutilator *A* either did not succeed with the mutilator *B*, or that he had partly found in the same experiments all the proofs necessary to refute the conclusions of his predecessor. It is but too notorious that similar violent experiments have become the scandal of Academicians, who, seduced by the attraction of ingenious operations have applauded with as much enthusiasm as fickleness the pretended glorious discoveries of their candidates. . . . In order that experiments of this kind should be able to throw light on the functions of each of the cerebral parts it would require a concurrence of many conditions impossible to be fulfilled. It would first require that we *should be enabled* to restrain all the effects of the lesion to that portion only on which the experiment is performed; for if excitement, hæmorrhage, inflammation, &c. &c., affect other parts, what can we conclude? and how can we prevent these inconveniences in mutilations either artificial or accidental? It would be necessary that we should be able to make an animal whose brain has been wounded and mutilated—who is filled with fear and suffering—disposed to manifest the instincts, propensities, and faculties, the organs of which *could not have been injured or destroyed*. But captivity alone is sufficient to stifle the instincts of most animals."

Furthermore, it should be known, and well known, that Gall was aware of the effects of the application of a stimulus to the brain's surface; and that he maintained, in direct opposition to the current doctrines of the physiologists of his day, and to "the asserted proof

to the contrary" afforded by the experiments of Flourens and other mutilators, *the competency of the surface of the brain to originate Muscular Movements*. This very interesting and important fact is recorded in a private letter now extant, from Gall to Baron Retzer, bearing date 1798.

However, Gall, unlike the modern "experimenters," duly appreciated such "muscular movements." Gall saw clearly enough what Dr. Ferrier has failed to perceive, viz., that the "movements" begotten were but secondary, and the outcome or effects only of the conduction of the stimulus employed from the surface to the base of the brain, and parts adjacent thereto. To confine the operation of the electrodes to the upper and convoluted surface of the brain would be to beget phenomena of a purely *psychical* nature; but inasmuch as this cannot be brought about, else than as an exception to a very general rule or under circumstances to be considered in another place, then the phenomena induced are necessarily of another, a *motor* character. Such is the close relationship of our mental and bodily natures—i.e. the "psychical" and "motor." Between the convoluted surface of the brain and the basal ganglia so intimate and close a relationship exists in man and animals—so continued is the interchange of impressions from above downwards, and from below upwards, that the independent action of either, whether in health or disease, may be said to constitute an exception to the rule. To think is for the most part to act and even *vice versa*. The comparative absence of the hemispherical ganglia (Solly) in a large proportion of the vertebrates, whilst it denies them the higher mental attributes, the purest affections or emotions, and the tenderest sympathies, leaves them prone as is man to the various nervous derangements or maladies, so often named in this paper. In man the intimate and close relationship between these upper and lower strands of nervous matter common to the brain and the "medulla spinalis" is shown by the occurrence of epilepsy, or chorea, or tetanus, in him, for example, subject to acute mental anxiety, or suffering from brain exhaustion. The same relationship is made manifest by the loss of brain power (imbecility) common to or the effect of epilepsy of long standing. Whilst the first is the effect of diseased action acting from above downwards, the second is the effect of morbid action acting in the contrary direction.

If Dr. Ferrier were informed of Gall's great and imperishable discoveries; did he know the precision with which Gall and Spurzheim have located on the brain's surface the many primitive qualities, intellectual and emotional, of our mental nature; did he enjoy the many advantages inseparable from a good practical knowledge of phrenology—if he knew where on the cranium of his friend or neighbour to find the several organs of, say, "Veneration," "Benevolence," and "Wonder"; of "Causality," "Comparison," and "Eventuality"; of "Combateness," "Constructiveness," and "Destructiveness"—he would then have estimated at their right value the movements or "results" of his experiments; such results would then have been

looked at from another or a more truthful standpoint, that is to say, as simply effects of a pre-existing or psychical cause : but this consummation so devoutly to be wished for will yet be realised, or I greatly err.

Commenting on Ferrier's views, an eminent writer on matters physiological has these words, viz. : "The explanation of the phenomena obtained by the application of stimuli to the surface of the brain, is found in the fact that those innate faculties which require the aid of the muscular system to carry out their behests have the power of originating the movements necessary for this purpose ; and hence when Dr. Ferrier applied a galvanic current to the cortical surfaces of the organs of the instinct 'to take food,' 'to seize prey,' 'to destroy,' 'to fight,' 'to construct,' movements of mastication, of 'striking with the claws,' or 'seizing with the mouth,' of 'biting and worrying, of scraping or digging' ensued ; whilst the stimulation of the same locality (Constructiveness) which put the forepaws and hind legs in action in the rabbit would, in the beaver, superadd the motion of the incisor teeth and the tail. What can be more palpable than that the inferences to be obtained from such experiments are not only far more vague and indefinite than those furnished by the employment of the phrenological method, but absolutely incapable of ascertaining the shape, and defining the boundaries of the organs as has been accomplished by Gall in the case of Locality, the shape of which he ascertained to be similar in dogs to its form in man. In short, little more can be said on behalf of these experiments at present than that in a cloudy and obscure form *they lend a vague general confirmation (not required) to the correctness of the localities assigned to the primitive faculties by phrenologists.*"

(*To be continued.*)

THE great prevalence of "neuralgia"—or what commonly goes by that name—should be regarded as a warning indicative of a low condition of health, which must necessarily render those who are affected with this painful malady especially susceptible to the invasion of diseases of an aggressive type. This is the season at which it is particularly desirable to be strong and well furnished with the sort of strength that affords a natural protection against disease. There will presently be need of all the internal heat which the organism can command, and a good store of fat for use as fuel is not to be despised. It is no less essential that the vital forces should be vigorous, and the nerve-power, especially, in full development. Neuralgia indicates a low or depressed state of vitality, and nothing so rapidly exhausts the system as pain that prevents sleep and agonises both body and mind. It is, therefore, of the first moment that attacks of this affection, incidental to and indicative of a poor and weak state, should be promptly placed under treatment, and as rapidly as may be controlled.—*Lancet.*

TEMPERAMENT AND EDUCATION.

At a time when much and earnest attention is being given to education, and great evils are resulting from over zeal in that direction, the subject of temperament in relation thereto should not be overlooked. Temperament in both teacher and pupil is an element of no small importance. If the one is to impart knowledge, draw out latent powers, and develop natural capacities he must not merely have the knowledge to impart, but he must also understand the physical and mental organisation of the subject of his efforts, in order to know how best to open his mind and throw the vivifying light into its inmost recesses, ; and if the other is to receive knowledge, to develop his latent powers, and to grow in understanding and capacity for the conception of ideas, he must be placed under conditions suited to his peculiar constitution, and favourable to his natural activity. In other words, the master must have aptness to teach and the pupil must be under conditions of temperamental harmony with his teacher ; and this implies, on the part of the latter, a suitable temperament in himself, and a good practical knowledge of the doctrine of the temperaments, to be applied in the labours of the schoolroom, in classifying his pupils, in suiting his instructions to the various classes, and in governing widely different dispositions.

To put the matter briefly, the teacher should have, as near as may be, a balance of the temperamental elements—vital stamina to give endurance, motive power to give strength to the body and force of character to the mind, and mental susceptibility to impart delicacy, refinement, and intellectual quickness. With such an organisation there would be dignity without stiffness, determination without harshness, liveliness without frivolity, executive power without quarrelsomeness, ardour and enthusiasm without passion, and capacity for conception without pedantry and volubility. The teacher so constituted would not only have the capacity to lead, but the power to control, and he would be loved as well as respected.

Of all who aspire to teach it should at least be required that they have a practical knowledge of the temperaments and the ability to adapt their instructions, in a degree at least, to the organisation of each class of pupils. With such knowledge, the properly organised and qualified teacher would be able to classify his pupils and adapt his instruction to the power and capacity of all without injury to any ; and he would, moreover, be able to put himself, through his sympathy and adaptability, into intimate relations with each class on its own plane. The intellectual activity and studiousness of the

Mental temperament ; the slowness, but effective power and persistence of the Motive ; and the liveliness, susceptibility, and instability of the Vital—all would be considered and treated with a wise forethought, and the mode of instruction and of discipline carefully adapted to the peculiarities of each.

Children in whom the Mental temperament is most influential are disposed to intellectual activity, have a desire to learn, and acquire knowledge rapidly. They are generally fond of study, have excellent memories for facts and rules, and readily comprehend explanations. They seldom need any stimulus to quicken their attention or spur them on, beyond their natural desire to excel and gain praise, but on the contrary, they often require to be held back, and the counteracting influences of occupations and recreations, involving outdoor muscular exercises, brought to bear, in order to prevent permanent injury to their physical constitutions. Fewer hours of study should be given to them than to children of the more material temperaments, and they should not, as a rule, be required to do home lessons.

Much harm is frequently done to children of this mental diathesis by pushing them in their studies. Not long ago a London physician stated at a public meeting that he was frequently called upon to give eight or ten certificates a week for children suffering from headache in consequence of too close study at board-schools. Children who suffer thus are invariably those of a highly mental or nervous temperament, and the worst of the matter is that these headaches, if not attended to, often culminate in disease of the brain.

It is the body, in such cases, rather than the mind, which needs culture, and both parents and teachers of such children should be careful, if they value their health and welfare, not to stimulate their minds, but take every means to promote vital and muscular development, so as to impart an enduring power to the brain, as well as to counteract its excessive activity. It should be said that children of a purely mental temperament are predisposed to diseases of the brain and nerves, to scrofula, &c., the best counteracting influences to which are fresh air and exercise.

Children of the Vital temperament (sanguine type) round-faced, ruddy, blue-eyed, light-haired, overflowing with animal spirits, and prone to mischief, are not very fond of either hard work or study, and there is little fear of their taking harm from over study, though they soon get dull and heavy from close confinement. Their attention is easily attracted, and though it can be held but a short time to any particular subject, they learn readily, provided the lessons be made easy and not too

long. They are always wide awake, listen eagerly when the teacher speaks, and like to get their instruction orally, instead of from the text book ; but in any case their attention is as easily diverted as it is gained, and long-continued application is impossible. Such children require frequent recesses for recreation, and should be allowed some latitude in this respect. They cannot be kept still, and all attempt to enforce the law of quietness must end in failure. They will be somewhat superficial at best, but they will make the most in after life of what they may acquire.

Children in whom the dark or bilious type of the Vital temperament prevails, while manifesting a similar restless activity of body, love of fun and mischief, impatience of restraint, and distaste for hard study, lack the alertness and impressibility of the sanguine type. On the contrary, they are apt to be rather dull, slow, inert, and passive as regards the reception of instruction ; but they are more persistent in their attention and application, and have more retentive memories, offering a firmer basis for judicious culture than the other class. They are stronger-willed and more passionate and obstinate than children of the light-haired type. The Motive temperament is not a normal one in childhood and early youth, the vital system naturally predominating. It is, however, sometimes prematurely developed, particularly in respect to those characteristics which are due to the influence of the bilious element. The child in whom this temperament is predominant, and who is, by inheritance, strongly predisposed to a full development of the motive and muscular temperament, will be slow and dull as a student, receiving impressions with difficulty, and requiring much explanation and illustration to enable him to comprehend and fully appropriate the instruction ; but whatever is acquired is retained with great tenacity. There is not much brilliancy about one with such a temperament ; but he is strong, sound, and practical. It requires patience and perseverance on the part of the teacher to do justice to a pupil who manifests so little aptness ; but there is material to work upon that will repay extra care and attention.

The great object in dealing with children of the motive temperament is to awaken the slumbering energies of the mind by bringing to bear upon them the stimulus of emulation among those of similar organisation, and by pointing out to them examples in history which shall excite their ambition, and encourage their hopes. If sufficient mental development and activity can be secured, they will, in the end, take their places as leaders in the spheres of active life ; otherwise, they

will be fitted only for the world's rough, hard work. They do not like restraint, and, both as children and as adults, are often inclined to be insubordinate and set law and order at defiance. Firmness and inflexibility, tempered with kindness, should be exercised in their discipline. Extra tasks and home lessons are not likely, as a rule, to do them any harm.

Although it may not be practicable at present to classify the children in our public and private schools on the basis of temperamental organisation, yet we are confident that this is a result to be desired and prepared for, and one that is sure to be reached sooner or later, as enlightened views of the human organisation shall prevail. Without such classification, however, a knowledge of the facts we have briefly set forth will enable the intelligent teacher to adapt his instruction and discipline in some degree to the natural disposition of each pupil. The different combinations of these primary temperaments will, of course, require modifications of treatment which will suggest themselves to the teacher who has mastered the distinctive differences of the temperaments; and it should be his aim to so train the minds and bodies of the plastic beings under his charge as to promote a harmonious blending of the temperamental elements, cultivating those which are too feebly developed, and restraining and counteracting those which are too strong and active.

L. N. F.

GERMAN WOMEN FROM AN AMERICAN STANDPOINT.

It is hardly fair to judge the people of another country by a few months' residence in it, so I wish to say at the outset, that though the opinions I shall state in this paper are my honest convictions, I am aware that a wider experience might cause me to change some of them.

One of the first things I noticed in Germany was the want of courtesy shown towards women. Of course, there is no more positive ill-usage of the weaker sex there than in any other civilised country, but one misses the thousand delicate attentions which most American gentlemen are eager to bestow upon ladies in their own rank in life, even if their politeness is not deep enough to extend to all women as women. A woman, in the eyes of "mein Herr" is a convenient household appendage to himself. She must be able to cook and to sew. She must be patient and obedient. If she happens to possess other qualities, if she is pretty, tasteful,

witty, well-educated, sings or plays well, so much the better, but none of these things are essential.

Perhaps I ought not to make as sweeping a statement here as I am inclined to do. But I have seen many German families, and have talked with many Americans whose experience was wider than my own, and the universal testimony is that no German man ever attempts to make a companion of any German woman. Of course, in the nature of things, they are companions occasionally, but it never seems to be expected or sought for. This state of things does not arise from the fear of detracting from the gentleness of the gentler sex which is so often urged in this country. A nation where a cow and a woman are harnessed together in a field, as I have actually seen myself, cannot with propriety talk much about the weaker sex. It is true that it takes just twice as many women to draw a canal boat as it does of men, with whom they alternate, so I am afraid we must admit that men have more physical strength than women; but, as all over Germany there is no hesitation in employing all the bodily strength which women have, it would seem at least fair to give them an opportunity to use what mental power they do possess, even if it is very limited. But the education of men and women in Germany seems to run in parallel lines, never meeting. It is very likely better that both should not learn precisely the same thing, since there is so much to learn and so little possibility for every or any person to grasp the whole, but it does seem desirable to have some ground in common between men and women.

I am thinking at this moment of a professor and his wife who were always held up to us as patterns of conjugal felicity, and indeed they were both good-natured and intelligent, and no doubt very happy. And yet I do not think many American families would be satisfied in their place. The Herr Professor is a profound student of mathematics and physics, and these alternating with his pot of beer and his tobacco, occupy him from one end of the week to the other. The Frau Professorin knows hardly enough mathematics to keep her accounts, and is in utter ignorance of the simplest fact in science, nor does she have the least desire to learn further. She is, however, musical, sings well, criticises admirably, knows all the musical people in the city, and spends half her evenings at the opera. The professor hates the opera, and never goes, hates singing, and cannot stay at home the evenings his wife's clique of musicians visit her. Yet they are very happy. She cooks well, makes his shirts and knits his stockings, which is all he wants of her. He provides a home, furnishes money enough

for occasional silk dresses and bits of jewelry, and in bestowing his name upon her, has made it proper for her to go out by herself or attended by her maid, and that is all she wants of him. They do not see each other very often, they are both too good-natured to quarrel when they are together; if there is an occasional quarrel the Herr Professor assumes that he has the right to command obedience; she agrees to this, but cries and frets a little, like a child, and then yields, as so many children do, only because the might is against her.

We said one day that we were looking forward eagerly to the spring-time, because it would be such a pleasure to botanize among the new flowers. Our Frau housekeeper was seized with consternation. "Ladies botanize! Why *boys* botanize!" We had taken it meekly when they had lifted up horrified hands at hearing we had studied Algebra and Latin, as we were rather indifferent to both subjects, but to be taken to task for botany almost disturbed our equanimity.

Then they began to hold forth on the superficial education of Americans. We know, to our sorrow, that we are superficial, so we could but assent, so long as the proposition was stated in general terms, but when our friends began to particularize, we found it necessary to dispute. We all know a German mind to be a reasoning one. It is admirable, still, when one reasons that a thing should be so and so instead of observing whether it is so and so, the conclusions are not always correct. The Fräuleins with whom we talked most invariably used these syllogisms:—

I.

Major Premiss—No man can serve two masters.

Minor Premiss—American ladies read and study.

Conclusion—American ladies cannot sew, knit, or keep house.

II.

1st. What we cannot do, no one can do.

2nd. We cannot learn mathematics, and the sciences; at all events we have not learned them.

Conclusion—Whatever you have accomplished in that direction must be a miserable, deceptive smattering.

III.

1st. We never sit down five minutes without sewing work in our hands. If we have nothing necessary to do, we invent a new kind of fancy work.

2nd. American ladies often sit by the hour together either with a book in their hands or with nothing at all.

Conclusion—American ladies cannot sew.

Yet the ladies who say these things are genuine, good, kind, clever people ; only, as I said before, they reason without reference to the facts. Judge how it threw them off their balance when Fräulein E—— and my American E—— bought some dresses the same day, which they fitted and made themselves, when my E——'s dress fitted twice as well as Fräulein E——'s ; when my E——, having unfortunately no machine, made hers by hand in less time than Fräulein E—— made hers on the machine, and when there were twenty little American niceties about my E——'s of which the Fräulein had never heard. You see, they had felt secure in their reasoning all winter, for when the tired Fräulein sat down each evening with her fussy fancy work, my E—— had either been reading Goethe, or leaning back in the corner of the sofa, gloriously idle. Yet, the truth is, my E—— is so artistic in her tiny little rows of even stitches that it almost takes your breath away to look at a simple over and-over-seam which she has made—whereas, though the Fräulein sews well enough for all practical purposes, her work is a very every-day affair in comparison.

Now, the best you can say of sewing work, it is manual labour, and though one must work diligently and practise much to attain to a certain degree of excellence, yet, that degree once reached, no more practice is availing, except just enough to "keep one's hand in." It may be a very good plan to teach sewing and knitting in schools in Germany, as it is certainly important that women should understand both ; but the feeling which these women have, that it is wrong to sit down any day or any hour from fourteen to four-score without some work in their hands is absurd. So far as my observation goes, American women in general, though of course among the wealthy in large cities there are many exceptions, but American ladies in general, I say, do more and nicer sewing than the Germans, with this difference : an American woman who has much plain sewing to do, rarely does much fancy work, because her household cares occupy most of her time, and the rest of her leisure she must have to read. I think there is, on the whole, nearly as much fancy work done here as in Germany, but it is done chiefly by those who have not many other demands on their time, and seldom, I think, usurps the place of needed rest or reading. But in respect to plain sewing, we are all more artistic than they ; I think it would be safe to say that two-thirds of the American girls who are in moderate circumstances have a wardrobe of daintier under-clothing than anybody in Germany, except the nobility, would think of having, though it is true that the Germans have

suits by the hundred. But, after all, to what does this, in the end, amount? Simply, that they have a washing day but once in three months. It does not save much work, because the laundry operations are stupendous when they do occur, and one room has to be kept between times as a receptacle for soiled clothes. But then, making so many clothes furnishes the Fräuleins with a great deal of sewing, as much as if they had a sixth part as many, and all made in the pretty American ways, and it seems to be a tenet among German women that if you have no work which is necessary to do, it is your duty to contrive some unnecessary work.

One practice in their education of girls seems to be very sensible. Girls of sixteen or seventeen who have lived in the city all their lives are sent into the country for a year, into the family of some friend. They pay no board, and receive nothing for their services, but they are taught housework, and are expected to assist in every way, while they are under the control of the father and mother of the family, just as they would be under that of their own if they were at home. Girls from the country are sent into the city in the same way, so that families often exchange for the year, Mr. A——'s daughter from the city spending the year with Mr. B——'s family in the country, while Mr. B——'s daughter helps Frau A—— in the city. This is, I believe, what answers to our boarding school system, and if one can have but one thing, this is probably the best education. Yet I think that New England girls who stay at home for a year or two after they graduate, really learn more of housekeeping than these German girls—for the reason that our household affairs are so much more complicated. It is true that it is customary to have five meals a day in Germany, yet, with the exception of tea and coffee, nothing is cooked except for dinner—as the bread, cake, and usually the dessert are bought at the pastry-cook's, and excellent eating they are, too. Any housekeeper will see how this at once simplifies matters, especially the dish-washing. The breakfast consists, invariably of rolls and coffee: not much dish-washing there you see; and when coffee is served at five or six o'clock in the afternoon in the sitting-room, there is nothing in the world but the coffee-cups and one plate of cookies and cakes in the middle of the cosy round table. Then with washing and ironing days only once in three months, and a good native girl who works in the kitchen for a mere pittance, so that no family is without one, you see the household labours are not so very heavy, not in the least to be compared with what half the New England women do, yet the Germans cling to their old syllogism:—

Major—We do housework and do not have time to study.

Minor—American ladies read and study.

Conclusion—American ladies do no housework.

How is anybody to answer this reasoning? 1st. Americans work quicker. Perhaps this is not a desirable state of things, because the quicker one works, the faster the nerves are used up, and we are to-day a lamentably nervous race, which would do well to imitate the sublime slowness of its Teutonic cousins, yet it is the state of things. 2nd. We rise a great deal earlier, I am not speaking now or at any time of the "upper ten," but of the average of people. It is not often abroad, that the "first breakfast" is eaten before eight o'clock, and I have many times been amused at the exclamations when we have said that half the families we knew at home have a warm breakfast long before that. "How can you get servants to rise early enough to cook it?" is the general cry. What would they say to the New England housekeepers who prepare it themselves.

3rd. We do not spend so much time at our meals. It is splendid to see the leisurely way in which Germans enjoy their food. We certainly have a lesson to learn from them in that respect. In fact, I do think the Germans have the right of it, in all three things I have specified, yet in this way we may account for the undeniable fact that Americans—men or women—do accomplish more than foreigners—more in a given time at any rate, though that may not be worth much. But there are two other reasons why we accomplish more, in which we have a real advantage. One is by "Yank invention." We have modern improvements, or, if we haven't, we have bright ideas how to do things with the least labour. The other is that our notions of duty do not compel us to work away at unnecessary and useless work. I think, even if we could bring ourselves to what we ought to do, and work moderately without the wear and tear of our ever-aspiring hurry, we should still find time to read and to talk of something besides fancy work, pretty as that is in its place, which should, however, be a very small corner. I think German women could do so, too, only as they never think of being companions of men, I suppose the motive for improvement is less strong than with us. They go with their chaperone for a few years to dancing parties, then they have to give way to the next generation of dancers, and there ends their opportunity, in general, of meeting gentlemen outside their own families, even in a simply social relation. It is not considered proper for an unmarried gentleman to call in the evening on a young lady unless he has first "made known his intentions." Gentlemen almost

never attend the little tea-drinkings and coffee-parties which are so cosy and sociable ; they like beer better than coffee, and their clubs better than a sitting-room full of ladies. Of course, if a woman is married and has time and money, there are great dinner-parties to which she can go with her husband ; but you see that usually, though the Germans are more gregarious than we are, it is men with men, and women with women, so there is no real sociability which seems exactly worth while. Boys who have graduated from a kindergarten school consider themselves too old to be taught by a woman, and many boys of twelve or fourteen think it so unmanly to speak to a woman that they avoid their own mothers in the street. It is all of a piece, a kind of insolent undercurrent towards women. The way in which men stare in the street is appalling. I have often known them, after staring at you for a block before meeting you, to stand stock still after you passed, for a minute, watching you ; yet a woman is *safer* in a German city in the evening than here : discipline is better in every respect, it is in the little refinements which make up the real happiness of life that one feels the difference so much. A young lady told me that in skating one day her skate became unfastened, it was difficult for her to fasten it herself and she looked around, as at home, thinking some gentleman would offer to help her ; she looked in vain for some minutes, when a young man came towards her and arranged it. " I asked him if he was not an American," she said, " for though he spoke very pure German, I knew no German was polite enough to think of it, and it proved I was right."

Well, the Germans say the English spoil their women, which means in plain English that they do not keep them primarily to wait on themselves. I had occasion to travel with a party of English immediately after leaving Germany, and I was struck every hour with the contrast in the way they treated the ladies of the party. We are from the English stock, and have even refined a little upon it, I think.

I fear I may not have given a fair idea of the education of German women. The schools for children are good ; perhaps, in some respects, even the girls' schools are better than our own. They begin to study English and French at eight or nine years of age, and, of course, the thorough drill they get in, besides the facilities they have for hearing them spoken, give them a good pronunciation, and a tolerably correct and fluent method of speaking. Most of them are natural musicians, and as they are genuine and thorough in everything, they generally accomplish something here. Then they learn Goethe and Schiller by heart in school, and as good

theatres where classical pieces are constantly played are more numerous there than here, they are usually very familiar with a few of their great writers. They study history, at any rate German history, very thoroughly. This is about the list of their studies and it is a good one; but the trouble is that no enthusiasm is awakened to make them desire to go on in after life. Suppose they do know Schiller by heart, if they never care to sit down to read. Suppose they can speak French and English without an accent, if they will never read anything in the original. I know several German ladies who could talk with me in English so well I should hardly know them to be foreigners. Now they are fond of Dickens and yet they will not take the trouble to read anything but translations of his books. I cannot help thinking they would be wiser if they aspired a little more. It is a good thing to be contented, and all nations must not be alike, but there is such a thing as a "noble discontent." They think American ladies aspire too much, that they are never satisfied. They say American ladies are free and do only what they like, while they themselves live a dutiful and submissive life. We think, and have told them, that American ladies like to do things not because they are compelled, but because it is right, and that while the best of us try to live cheerfully when our lot is inevitably hard, yet if we see some good thing within our reach though beyond us, we are eager and glad to make it our own.

Finally, E—— and I came to these conclusions,—first, that American women have more privileges than any other women; and second, that in view of what American progress and the aspirations of women have already accomplished, it would be foolish and wrong to object to further progress. H. E. P.

SWEDISH GYMNASTS.

During the autumn of last year a body of Swedish gentlemen, some forty-five in number, members of the Stockholm Gymnastic Club, were in London nominally to note our athletic methods, and, to learn; though, if the truth must be told, they are much more qualified to leave sound information behind them than likely to take information away. Indeed, impartial consideration of the facts tends to the conclusion that the Swedes are the most perfectly physically educated race in the world, and that other nations may gather some very useful lessons from a system to which every school-boy in the country is subjected. The Swedish system of physical education was founded by Professor Ling, whose sound theory on the subject was that physical and mental training should go to-

gether, and that every muscle in the body should have its due share of exercise, seeing that individual strength depends not upon the development of certain muscles or certain parts of the human body, but upon the right relations and proportion of all parts. Under the Swedish system a pupil learns to use his left arm equally with his right, and the display of efficiency in fencing and sword play with the weapon in the left hand is something marvellous to Englishmen who have not yet profited by the wise suggestions of Mr. Charles Readé and other recent advocates of ambidexterity. The characteristic of Swedish gymnastics is what they term "free isolated" or "free-standing" movements, in which every boy from eight years of age is exercised every day of his school attendance. These exercises consist of a remarkable series of flexions, tortions, extensions, and contractions, calling into vigorous action, successively or simultaneously, every group of muscles in the human frame. Like our own cruder "extension motions," they are executed by word of command and without apparatus. Next comes practice with a "Ribstool," a ribbed contrivance fixed to a wall, which expands the chest and makes the back flexible. Then follows practice on trapeze, planks, ladders, and ropes, and afterwards "isolated" movements are gone through, to act chiefly on the lower limbs, the muscles of the lower part of the trunk, the stomach, back, and sides. Professor Ling was a profound physiologist and anatomist, and the course of exercise he has laid down has been framed, not only with a view to alternate play of different sets of muscles, but also to the functions of the heart and the respiratory system. Movements accelerating the action of the heart are followed by others tending to draw the blood to the extremities, so that great stress is laid upon the exercises being carried out according to a certain sequence. Leaping, vaulting, and jumping, are held in high estimation on account of their tendency to develop the moral quality of fearlessness as well as of their combining the application of almost every other movement. After a certain period of this training, boys are instructed in the use of arms, fencing, sword play, dagger against foil, sabre against bayonet, and the use of firearms. Swimming is part of the national course, and no one is held to be proficient who cannot take a "header" in twenty feet of water and save a fellow-creature from drowning. The importance of this system in producing a strong, healthy race is now generally recognised in Sweden, and clubs are springing up all over the country to enable grown-up folk to maintain the efficiency they have acquired at school. The Stockholm Club is one of these. It consists of a couple of hundred members, including many officers, gentlemen, and professionals, men of the Swedish capital. The contingent who favoured us with a visit were not selected for special skill, but were simply such as could spare the time to travel. But they were, though only a fair sample, remarkable instances of the power of judicious physical training in developing bodily strength, agility, and endurance. They gave, during their visit to London, displays of the system at Aldershot,

Woolwich, and Portsmouth, before our military authorities, who were much impressed by their marvellous proficiency and rapidity of movement. At the Crystal Palace, they gave their first and only public display, for they left directly afterwards for Brussels to compete at the great Gymnasium Tournament there, which formed part of the Jubilee Fêtes. The display took place in the Central Transept, before the Handel Orchestra, the *troupe* appearing in a uniform of white linen, edged with blue, very much of the pattern of our man-of-war, duck frock and trousers, rig. Under the command of Lieut. Balck they first demonstrated the "free standing" movements of the Swedish system, in which their admirable adaption to exercising all parts of the body was almost as obvious as the marvellous promptitude and rapidity of movement which they developed. This was seen in a yet more striking way when the fencing practice was gone through, first with the right hand and then with the left, every man seeming to be perfectly ambidextrous. It may be mentioned as matter of encouragement to many Britons who think they are debarred from any physical exercise by their infirmity, that several of these Swedish gentlemen are short-sighted, but they are not a whit less proficient or plucky than their *confrères*. Then followed some individual bouts with the foils, in which Captain Haasum, of the Swedish Guards, encountered Lieut. De Kantzow, of the 10th Infantry; and Lieut. Nybløens, of the Hussars of the Guard, was opposed to Lieut. Vandenburgh, of the Swedish Infantry. More skill of fence it would be very difficult to find, and equal rapidity more difficult still. The next encounter, between Lieut. Balck and Lieut. Gothland, with sabres, but with no protection to head, arms, body, or legs, was equally marvellous for skill and rapidity, though a little startling to those who appreciated the imminent risk run of serious accident to the antagonists. Here, as in all other instances, the weapons were used indifferently in either hand, and if there was any difference the left-handed bout was rather the smarter of the two. Sabre against bayonet and dagger against foil found able exponents, the skill and rapidity of movement displayed eliciting loud and well-earned applause. Then followed more company motions, single-arm exercise of most trying character on the bar, and some marvellously good leaping and vaulting, which demonstrated that all were equally proficient from the youngest of the party, a cadet of seventeen, to the leader, a finished athlete of thirty-one, and from the spare, wiry figures, who seemed to the manner born, to a ponderous Hercules of sixteen stone. It is to be hoped that some good may come of this visit of the Swedish gymnasts, by stimulating a movement for the introduction of a thorough system of physical training into our national and other schools.

THE *Lancet* has an article on the evil effects of railway reading, wherein it is stated that serious disorders of the eyes, including blindness, are now prevalent, due to that practice.

MADGE.

A TEMPERANCE TALE IN THREE CHAPTERS.

CHAPTER I.—“The Contented Heart.”

Among the poorest of the poor of Coggleton, was a cobbler named Madge. He was but a poor, ill-fashioned, helpless creature at best, and although he worked as hard and as indefatigably as he could, he was unable to provide food enough, to say nothing of raiment, for his children; for he had a numerous progeny, as such shiftless, ne'er-do-well sort of people generally have. They went accordingly half clad in rags, and you could tell by the longing, greedy eyes with which they gazed into confectioners' and cookshop windows that they went also half starved.

Madge's wife was a good enough woman of her sort; but she had a hard time of it with all her children, and a lazy husband to boot, and it is not to be wondered if her tongue rang in their ears pretty often and rather shrilly. She saw other men of his station and calling do better for their families, and was accordingly a little jealous. Poor thing, she would have liked to be proud of something—if only of her good man's efforts to do better. When, therefore, she was a bit put out, she would remonstrate with Madge, and call his attention to the ever-increasing number of their litter and the consequent necessity of some increased effort on his part for their support. She would hint in a somewhat broad way, consonant with his none too sharp intellect, that the working day might be lengthened by adding thereto an hour or two taken from the big time-portion he allotted to play and sleep; for Madge did not see the fun of rising with the lark, nor, for the matter of that, of going to bed with the lamb.

There was a little pot-house at the corner of the street in which was situate the cobbler's house—if the name “house” can rightly be given to such a tenement, low enough for a tall man to touch the roof, and entered by two descending steps; nevertheless, there it was, and there, weekly, a squat, well-fed man presented himself for rent. The pot-house at the corner was called “The Contented Heart.” Its bar-room had a white deal table and a clean sanded floor, and appeared almost a palace in comparison with Madge's own dingy, unwholesome place. It never occurred to him that the money he spent there would have bought soap and sand enough to brighten up his home twice over, and perhaps would have sufficed to bring a little cheerfulness to his better-half's countenance, from the stormful threatening of which he too often

sought refuge in a pot of the cheapest ale and a pipe at the corner "public."

One day the cobbler's wife had been giving him a little more than the usual dose of the rough side of her tongue, and he had made for the open air in order to escape the deluge of words. Having no money he could not go into the "Contented Heart:" he knew no one there would be content to let him occupy the corner of a bench without ordering and paying for something to pour down his gullet. So he wandered aimlessly about the streets, attracted ever where there was the most stir and the greatest show.

He may have been occupied thus for the space of a couple of hours, and had gravitated towards the skirt of a crowd which had congregated, as crowds will, about nothing, when a pony-chaise came dashing round the corner, and before he could get out of the way it had thrown him down and came near going right over him. The driver, however, pulled up in time, and Madge escaped with his fright and a slight bruise—and half-a-crown to boot.

He now put himself on his way home, musing on the strange providence that had knocked him down and then salved him with a larger piece of silver than he could get for a day's work. Holding the coin in his hand that it might not escape him, Madge thought how the sight of it would lighten up the cloudiness of his wife's visage. With kindling feelings he put himself into a trot, for the shades of evening were beginning to gather, and had enjoyed in anticipation the looks and expressions of satisfaction on every face that would greet the hearty meal which he had forecast in his mind, when what should meet his eyes but the sign of the "Contented Heart."

The clean sanded entrance and the cheerful flickering glow in the windows offered temptations, he felt, that were too much for him. He hesitated for a moment, leaning up against the wall as though to fortify his resolution; and then crossed over the road and entered the inn.

Madge found no one in the bar-parlour, in which a bright rosy fire and a couple of arm-chairs invited to comfort and contemplation. Throwing himself into one of these, the cobbler gave his order to the landlady—quite a picture of a "contented heart" at the moment—with the air of a king, and threw down his half-crown with an amount of nonchalance that none can assume save those who have not a second coin to companion the first.

The owner of the half-crown had ordered half-a-pint of ale, but the landlady, seeing the size of the coin, asked him if he did not say a pint. "Yes, a pint," he answered; and with

this before him and a pipe—the one on the table at his right hand, the other in his mouth, his body thrown back in his chair, and his poorly shod feet resting on a bench before him—Madge soon forgot his wife and children and the bright picture he had visioned in his home.

The clouds of smoke became denser and denser about his head, the pewter described a larger and larger segment as he raised it to drink, and the cobbler became happier and happier. Why should he stint such happiness? The landlady did not object, and was not this the castle of the contented heart? So another pint went after the first; and Madge sucked in the smoke as if there was salvation in it. O ye gods! What bliss is there not in a mug of sixpenny ale and a long clay pipe! What dreams, what beatitudes, they induce—while the glamour lasts! and after, what——?

For a space the poor cobbler sat with the immortals, or he thought he did, although he drank out of pewter, sucked his smoke through clay, and had but a broken half-crown in his pocket.

He was in this frame of mind, and in an accordant attitude, when the door opened and a young man entered. Though the entranced cobbler did not raise his eyes, he saw who it was, or rather had a dim idea who it was. But he took no notice; he did not wish to be disturbed; he was afraid lest the frail bubble of his elysium should be broken.

The stranger ordered his pot of ale and pipe, and taking his seat in the vacant arm-chair on the opposite side of the hearth, swigged and smoked. Madge tried to be oblivious of the other's presence; but in vain. He heard distinctly every movement of his lips, whether it was to puff out smoke or to pull in liquor, and wished the man had not come in to disturb his meditations.

The disturber was one whom, having once seen, you could not easily forget. He was a short and somewhat spare man, with a dark oval face, not handsome, but by no means unprepossessing. His eyes were dark and piercing; he had a prominent aquiline nose and a fine black mustache, which he seemed not a little proud of, stroking it tenderly from time to time. He was dressed in a close-fitting suit of blue serge, with a high hat, and, taking him altogether, had the appearance of a man of the world tolerably well satisfied both with the world and himself.

The two may have sat thus for half-an-hour, Madge making no sign of being aware of the presence of a second person, though the other never took his eye off the cobbler, except when he raised his tankard to his lips; the fact is, however,

that the latter had recognised the jaunty young fellow the instant he entered the room, and, recognising him, remembered that he had formerly disliked him, and felt that he disliked him still; and was hoping that when he had swallowed his drink and smoked out his pipe he would depart, and leave him in peace to pursue the tenor of his own dreams, when it became too evident that the man in serge had no present intention of taking his leave.

Having emptied his pewter he knocked on the table to have it refilled, and while the presiding genius of the "Contented Heart" was frothing it up, he quietly replenished his pipe. Then, holding his pipe in one hand and the foaming tankard in the other, and fixing a steady gaze on his blinking fellow-guzzler, he said—

"Your health, Madge!"

Madge looked up with a startled air, and his companion answered with a nod of recognition and a muttered "Your health," as he put his nose into the froth. The cobbler watched him until his eclipsed nose reappeared, and then said with assumed surprise—"Hallo! Sam! Is it you?"

"Yes, I guess it's me," replied Sam. "You didn't seem to know me."

"No," said the other, "I was just thinking how fine it would be to be a gentleman and be able to have one's glass and pipe whenever one liked. How are you getting on?"

"All right," replied the man in serge.

"You're not at the lapstone now," remarked Madge, regarding the other's get-up. "What are you doing?"

"On the stage," replied Sam.

"Pays better than shoemaking, eh?"

"Rather."

"And not such hard work either?"

"It depends," replied Sam laconically. "But, look here, Madge; I want you to do something for me."

"Yes," said the cobbler. "What is it?" and he glanced mechanically at the other's pedal coverings.

"No, not that," said Sam, noticing the other's look. "But your mug's empty; let's have another go."

And another "go"—in fact two more "goes"—they had; the effect of which was very visible on Madge, whose reserve seemed gradually to thaw, and the dislike he had at first felt towards his companion to melt away; he became open-hearted and demonstrative; in which state his companion explained to him what it was he wanted him to do.

The poor cobbler was not an ill-natured fellow at any time; but in his present condition he was altogether in such a good-

humoured frame of mind that he could have refused his friend nothing in reason, or indeed out of it, for the matter of that. He accordingly agreed to do what was wanted of him, and he and Sam left the "Contented Heart" together at a somewhat late hour on the very best of terms.

Mother Madge waited long and anxiously for the return of her backsliding husband. She could not think where he had got to, knowing as she did that he had no money when he went out. Had he had the wherewithal to procure himself welcome at the "Contented Heart" she would have sought him there. As it was, she waited and waited, only going to the end of the street occasionally to see if the shiftless repairer of understandings might chance to be loitering about with others of his class. But nothing was to be seen of him, and so she must perforce go in again and nurse her wrath and her little ones, who, unlike her anger, had nothing to feed upon.

Finally she got the young Madges to bed and to sleep, although supperless; and then sat over the few embers that served as makeshift for a fire, trying to keep them aglow, partly to warm her famished frame, and partly that her scape-grace of a spouse might not return to a wholly desolate hearth.

Poor Mother Madge! although her anger was, like roasting fat, ever ready to take fire on the slightest provocation, yet the true woman's heart beat warm and tender beneath; and even now, when most incensed against her idle and insouciant bread-winner, her inmost thought was to deserve his approval and win his smile when he should return. The snarl and snap would most likely come first, but a tear and caress would not linger far behind.

It was nigh midnight when Cobbler Madge knocked with unsteady hand at the door. His better-half had dropped into a dose; but like a good watch-dog she was instantly on the alert and ready to give tongue. This time, however, her husband had the better of her. Utter astonishment at the sight which presented itself when she threw open the door held her tongue paralysed.

There stood the little, ill-shapen man, staggering under the weight of two great bundles, and the Lord knows how much bad liquor! One bundle he hugged in his arms, the other dangled from his right elbow. He dashed past his astonished spouse, almost upsetting her in the act, and deposited the larger bundle on the table, at the same time divesting himself of the other.

The poor fellow was so out of breath with his exertion that he could not speak for a moment or two, but could only break

into a broad grin, making his face look all openness, as his wife, with a vacant stare at the disclosed treasure on the table, exclaimed—

“A baby! what——?”

Madge now put his large right hand into his deep trousers pocket, and after bringing forth various miscellaneous and mysterious trifles, produced no less than ten bright golden coins—sovereigns—and placed them on the table before Mother Madge's ever-widening eyes.

“Lor! Madge!” she at length got out.

The little cobbler laughed.

“What a big baby! And what a lot of money! Whose is it? Where did you get it? What——?”

Madge still laughed, and held his aching sides.

“Do speak, and don't laugh there like a stupid.”

But the stork-man only laughed the more.

“Well, if you must laugh, laugh there till you are tired; then perhaps I shall get it out of you,” said Mother Madge, impatiently, and taking up the baby-bundle began to divest it of its multitudinous wrappings, at the same time examining each with feminine curiosity.

They were all good and substantial, although not costly. And what a baby! It was like a young Hercules! And how he smiled too, and crowed!

It would be hard to say which caused the good woman the greater joy—the sight of the golden pieces, or that fair, rosy infant's winsome smile. Poor soul! she knew so well how hard it was to be without a sorry dime in the house, that it is easy to understand how the ring of the merry coins, and the hard solid feeling of them, communicated something of their own brightness and solidity to her heart; but the joy of the boy's smile was the deeper, for it touched the very woman's heart of her.

“Madge!” she said, pressing the young giant to her famine-stricken bosom. “Do tell me where you got him?”

But the cobbler was no longer in a condition to give any particulars, either biographical or genealogical, about the new-comer. He had fallen back in a half-bottomless chair, and with his nether jaw despising companionship with the upper, was indulging in utterances far less euphonious and many degrees less articulate than those of the year-old bantling he had so unceremoniously presented to his wife.

“Dad's fallen right asleep,” said Mother Madge in soft tones. “It's because you've tired him so carrying you, little one.”

She knew well enough it was not so; but it was pardonable

in her to want to excuse her husband before a stranger—and such a one.

Presently the little hero fell asleep in her arms, and his new nurse put him to bed among her own brood; his fat and well-favoured appearance in comparison with the best of them sending a sharp pang to her heart.

"They would any of them be as fat and good-looking, if their good-for-nothing father wouldn't be so idle," she soliloquised. "Get up and go to bed, you lazy-patch," she continued, raising her voice to the other extreme of the diatonic scale to that wherewith she had crooned the infant to sleep. "Get up, do—" shaking him. "A precious lot you've been guzzling again! And the children going to bed hungry! Get up—"

But it was of no use shaking and objurgating Madge; for notwithstanding his body was doubled as nearly as possible into the form of a V by the peculiar disability of his chair, he was as soundly off as the Seven Sleepers. Seeing this Mrs. Madge turned to the more profitable occupation of examining the bundle of baby clothing lying on the floor. In the midst of it she found a little necklet of amber, such as is often put upon children as a charm against measles, falls, swallowed buttons, and other distempers peculiar to childhood; and upon the clasp of it a name.

"C-l-o-n-d-a-l-k-i-n," spelled the matron. "What a name!"

She noted, too, that it contained just ten letters, exactly the number of the sovereigns she was treasuring in her bosom; and all through the night the letters and the sovereigns got so mixed up in her dreams that she rose in the morning half dazed, imagining that the whole incident of the previous night was a fantastic trick of the slumbering senses.

(To be continued.)

FATHER'S OLD BOOTS.

A STORY FOR CHILDREN.

Very many years ago, a little boy was trudging along a high-road that ran through a certain country. He was a sturdy little fellow, with sun-browned cheeks, and bright eyes that looked people straight in the face, and were never cast down in shame. His garments were not of the best; they were of common home-spun material, good for wear but not much for show. They had evidently been well worn, too, for they were patched in places; they were, moreover, a little too small for his growing frame. He carried a kind of pilgrim's staff in his hand, and over his shoulders—strange to say!—a pair of old boots, almost as large as himself. They were boots such as one does

not often see now-a-days, except in museums and the like places : stout, solid nether-gear, that not only furnished a firm "understanding" for the foot, but covered the leg up to the knee, and then spread out laterally, as though in scorn of stinted measurement.

It was very funny to see the little fellow—whose name was Johnnykin, trudging along with this curious burden to his back ; at least the people he met thought so ; for some laughed and jeered at him, while others passed by with a look of pity or quiet scorn.

Johnnykin, however, did not take much notice of these folk ; his care was to get to his journey's end, and to deliver the boots into his father's hands.

His father had gone a long journey into a neighbouring country, and had left Johnnykin to follow him and bring along the boots. The father's parting injunction to him had been to treasure these boots as the apple of his eye, and they would be his security in every danger. No one, said Johnnykin's father, could take them from him against his will ; but if he once parted with them it would be the hardest thing in the world to get them back again, if, indeed, he recovered them at all. So when anyone said anything to Johnnykin about the old boots, he replied : "They are my fathers ; he gave them into my charge when he went away, and I fear if I part with them I shall never reach where he has gone ; for there are often dangers in the path that one cannot be secure against without these boots."

"Oh, they are the seven-league boots, then?" said one man, with a wide, laughing face.

"No ; not that," replied the lad ; "but I have heard my father say that they preserved him in many a stressful time."

"That's a good tale to tell of a pair of old boots," said the man, with a knowing wink at his companion, and they went on.

"I don't know whether it's a good tale or not," said Johnnykin to himself, "but it is true."

"True enough, I've no doubt," said a rough-looking man, who had overtaken the little traveller unawares ; "but I've a mind to see what's inside them. Money or money's worth, I'll be bound?"

With that the fellow laid his hand on Johnnykin, and would have taken the boots from him, but one up and gave him such a whack where he least expected it, that it made him open both eyes and mouth in amaze. Then he went on his way.

Presently, a long-visaged, sedate-looking person came up. He, too, began to talk about the old boots, and offered to relieve Johnnykin of them for a while in order to rest him, as they were going the same way.

Said Johnnykin : "I don't feel their weight ; and, besides, I never part with them."

"You are quite right," replied the sedate individual ; "it is best not to, as I have no doubt they contain some precious gems in the toes."

Johnny laughed quietly, for he thought of the surprise that the toe of one of them gave the rude fellow awhile ago.

Presently his fellow-traveller suggested that they should take a by-path, which, he said, was a short cut ; but Johnnykin perceived the boots point directly forward, and as he never slighted that indication, he answered :

“ No, I will go straight on ; but we shall meet, perhaps, further on.”

It was now near sunset, and coming to a village where the people were making merry, our little pilgrim was invited to join the throng ; and when he would not, one of the biggest of the villagers exclaimed :

“ Now be I minded to try tha boots on. Come, yunker, let’s !”

There was a great laugh at this suggestion, and when they had taken the boots, in spite of the lad’s protests, they helped their companion to put them on.

When he stood up in them he seemed as big again, seeing which the others wanted to try them on, and began to contend who should have them first ; but the one who stood in them put them aside with a strong hand, and taking Johnnykin in his arms, he marched with him out of their midst, and setting him down on the other side of a deep stream, gave him back his boots, bade him “ God-speed,” and returned.

It was now nightfall, and Johnnykin, casting about for a lodging, spied a light among the trees a little way off ; so, going in that direction, he presently came to a castle, and there being no other dwelling near, he knocked and asked for shelter.

It was a lady who was the owner of the castle, and she ordered him to be well treated. This he was, and afterwards put into a soft bed. He had never lain so cosy in his life, and he thought, as he was half asleep : “ How much better to be well fed and to be warm like this, than to carry my father’s old boots about !”

But when morning came, and he saw the boots hung at the head of the bed, he said—“ No, no, old friends, we won’t part company yet !”

And this resolution he stuck to, although the lady of the castle begged him to stay with her, and she would adopt him as her son, and give him rich gifts and fine clothes.

When she saw he was not to be moved, she became angry, and said, at any rate he might afford her a look at the inside of the boots, for she, too, thought Johnnykin would not carry the old boots about for their own sake. He allowed her to look, and though she saw nothing, she was by no means satisfied, but thought there was some deception. Therefore, she once more tried coaxing ; but it was no good, for when, for a moment Johnnykin wavered, he felt the boots, which were slung about his neck, tugging at him as though they would pull him away. This strengthened his resolution at once, and he refused, politely but firmly, to stay.

Then the lady of the castle waxed very wroth, and bidding him begone, set her dogs upon him.

This was the hardest trial the young wayfarer had encountered ; and when they came howling and snapping at his feet, he felt as if his end was at hand. Once he fell, and while he was down they bit his legs sorely ; but he soon got on to his feet again, whereupon he thought of the expedient of putting his legs into the old boots.

They were certainly, he thought, too big for him, but anyhow they would protect his legs. How astonished was he therefore to find that they fitted him exactly !

But he was still more astonished at the effect his getting into them produced. Every dog put its tail between its legs, like the curs that they were, and skulked off. As for the lady—she was quite awestruck, and begged him to have pity on her and let her go, which, of course, he did.

So Johnnykin went on and on, always trusting to the despised old boots, and always finding that they were a constant help in times of need.

At last people got to calling him "Johnnykin with the big boots ;" but he did not mind that ; for when, after awhile, a great trouble came on the land, it was the wonderful power of Johnnykin's big boots that saved it, as may be read in many places in history. It is but right to say, however, that though in our story-telling language we say "big boots," in other tongues they give the same thing different names.

Facts and Gossip.

THE following paragraph, or one similarly worded, has, to use the familiar phrase, been going "the rounds of the papers":—"An inquest was held at Warrington, on Jan. 7th, on the body of Robert Torey, thirty-four years of age, phrenologist, familiarly known as 'Professor Fowler.' Deceased, who was a native of Edinburgh, and said to have been reduced in circumstances, obtained a ticket for the tramp ward on Tuesday night. On Wednesday morning he was found dead within 150 yards of the workhouse. Medical evidence showed that death had resulted from consumption, accelerated by exposure and personal neglect. Verdict accordingly." The deceased was not the only one who assumed the name of Fowler for professional purposes, and although he doubtless took some persons in, his dishonesty does not appear to have redounded much to his advantage.

AN interesting discussion is being carried on in the pages of the *Educational Chronicle* on the value of phrenology in schools. Educators of every sort cannot do better than make themselves acquainted with the principles of phrenology.

Correspondence.

THE CAUSE OF THE CONFUSION.

Phrenology, as the science of mind, must be based on physical facts, and beginning with first principles in the analysis of perception, or you have no reply to idealism on the one hand and to mechanism on the other, or we have the singular fact of a man of eminence and a phrenologist asserting that the brain is the organ of mind, having the phenomena of consciousness for its function, and yet that we know nothing beyond those facts or ideas of consciousness, and

therefore the brain is but one of its own ideas. (See the review, and a most friendly one, of the works of Charles Bray, in a late number of the *Westminster Review*.)

Prof. Huxley is I see following up his volume of the popular series on Hume with one on Berkeley, and we shall see what sort of compound the physiologist and half idealist makes of it; and we had Mill idealistic in one place and materialist in another, with no clear and consistent hold on realities. Herbert Spencer is all astray with his unconditioned, unknowable, absolute (hidden) behind appearance, like the man in *Punch*, out of sight, who pulls the strings; and even Tyndall in his famous Belfast address makes a confused statement between sense and object in questioning the idealistic theory. But there really is no difficulty in dealing with the idealist, if he be consistent and you force him into his true logical position, which is that of an unsupported vision and isolated dream, and there leave him to talk in his dream and to himself, if he acknowledges a self or percipient at all, which Hegel does not, who believed in all being thought without a thinker. But the desideratum is a correct analysis of perception, showing a real sense of distance and a true estimate of the nature of things, and the practical value even of our illusions, and as essential to the existence of man and animal alike. Phrenologists have too exclusively confined their attention to the divisions or departments of the brain to the neglect of first principles and the analysis or nature of perception as the necessity first and before all as the A B C and first step and stage towards the science of mind and a philosophy of man and life founded on science. "One touch of nature makes the whole world kin," and *ce n'est que le premier pas qui coûte*. The first step is everything, and it is this first step that all have been at issue about since the world was a world, and are wrangling about still: the question is as to what man can know, what is the man or *ego* that knows, with the how of the attainment, and the what; but enough for the present. The analysis of perception will follow.

HENRY G. ATKINSON.

Answers to Correspondents.

T. C. (Cleator Moor).—It does not necessarily follow that a person, who has small vital force and large mental capacity, by cultivating vital vigour detracts from his mental power, but the reverse. Without a full degree of vitality the mind cannot manifest itself to the best advantage. To cultivate the mind at the expense of the body is sure to end in weakness and ill-health.

J. E. M. (Kirkstall).—Did you ever read the fable of the old man and his ass? If not, do so. It is very wise.

M. L. N. (Birmingham).—We shall have a delineation of "George Eliot" as soon as we can get a portrait of her. None that we know has ever yet been published. To another correspondent we would reply that a delineation and portrait of Spurgeon are in preparation.

THE Phrenological Magazine.

MARCH, 1881.

CHARLES HADDON SPURGEON.

Do not Mr. Spurgeon's life and character belie phrenology? is a question that has frequently been asked me. I answer, no; but on the contrary, they are in harmony with his phrenology and physiology. Some affirm that his physi-



ognomical expression does not indicate so much intelligence as his preaching and writings do. To this I reply, that while the face may indicate one class of faculties, the study of the brain and body will show the whole character.

Let us see what his body and brain do indicate, and ascer-
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tain, if possible, how they enable him to do his work. He started in public life half-way in his teens, full of warm, pure blood in a strong healthy body, very compact and strongly knit together. He started in a cause calculated to engender healthy conditions of body and mind. All surrounding influences were calculated to support and encourage him, and he was thoroughly worked up in body and mind, and all his powers were brought into full action and taxed to their utmost. He started with but limited experience and education, on a high platform, under the best of influences. The most important feelings of his nature, the moral and social, were naturally strong, and he has acted upon those feelings in others so that there has been a reciprocal relationship between him and his hearers on all the social topics of the day. Besides, what is of great importance, he is in love with his work.

All persons can work easier and command more mind to do that kind of work they are in love with than that which is a disagreeable task. Love develops talent that otherwise would remain latent. All who have been thoroughly converted to what fully calls out this talent appear to better advantage than they did before their conversion. The social feelings enter largely into the Christian religion. Mr. Spurgeon has a strong social disposition, a strong love nature, is fond of his wife, and is well qualified to enjoy married life, is very much attached to children, and has a fatherly interest in them, and has strong friendship and capacity to enjoy social and domestic life. These powers of his mind are so strong that he converts every assembly he is in, whether large or small, into a social gathering; his hearers listen to him as though he were a friend of theirs, and it is easier to talk and entertain friends than strangers.

So far as his social nature is concerned, phrenology is sustained. His neck is large, and the base of the brain is strongly represented, giving him energy, industry, and resolution; but, with his strong vital and ganglionic system, he works easily and without much friction. His head is not broad at the centre of the parietal bone and just below, consequently his restraining powers are not great. He speaks and acts promptly and frankly. He is not specially large in the crown of the head, consequently he is neither very proud nor vain, haughty nor ambitious, dictatorial nor affected in his manner; yet Approbativeness is larger than Self-esteem, making him affable, anxious to please, and be at ease among his friends. More Self-esteem would give him dignity and the spirit of a leader; as it is he takes responsibility and exercises authority only when it is necessary. His Self-esteem is never in his way

in the social circle, yet in business or in a responsible situation his moral sense would enable him to take his proper position and require others to keep theirs.

The whole coronal brain is large, giving him a superior degree of moral feeling and capacity to exert a moral influence. The strongest powers of his mind are his moral feelings, and he has a deep religious nature through them. His reputation is particularly a religious one. It is for that he is known and noted, and his popularity and influence arise from the action of the moral and social faculties as the two leading qualities. The largest of his moral organs is Benevolence. He talks through it, he prays through it, he sings through it, he preaches through it, he gets hold of other people's sympathies and pockets through it, he governs and sways others more by its action than by positive dictation. Love and charity enter into his entire nature, and were it not for large Conscientiousness and fair Destructiveness he would lose sight of the law and present only the Gospel, but with large Conscientiousness he feels the force of obligation and sense of duty.

He has strong hopes, and is seldom gloomy except when completely exhausted from over work and disease; has strong faith and consciousness of spiritual existence and influence. Spirituality is apparently large in his head, and by the aid of other moral organs and a religious life, it has become a distinct feature in his religious character, and has led him to have faith in prayer and spiritual communications with the unseen world. Veneration is large, and has a prominent influence, giving feelings of deference, respect, worship, and adoration, and a stimulus to a higher life and standard of action.

His intellectual powers are most easily called into action with the moral and social feelings. He can readily think of something to say about religion or social matters. He has more sentiment than poetical talent, more emotion than extravagance, and more pathos than expansiveness of mind, for his head is high rather than broad. He is straightforward in what he says and does, fires at a mark, and has a definite object in view which he does not lose sight of till the end is attained. His forehead is somewhat like the sharp end of a wedge. He begins with a little and goes to the much and the large, for his mind expands rather than contracts. Thoughts and feelings multiply as he continues speaking or writing, and frequently he has more to say on a subject when he has finished his discourse than when he commenced. His mind goes from facts to principles, from science to philosophy, from nature to the Author of it; always going up instead of down. The

frontal lobe of the brain is long and full in the central part, giving great intellectual power of a practical common-sense kind. Some men have more available intellectual power than he has. Causality is sharply developed, indicating its activity. He quickly takes an idea and as quickly applies it. He has no stale thoughts or theories on hand. His brain is not lumbered up with fossil thoughts that clog and impede, but he learns as he goes along and uses his thoughts and knowledge while they are fresh. His is the kind of brain that deals in simple truths rather than abstract ideas.

The leading intellectual development of his forehead is Comparison, which gives him any amount of illustration and power to simplify and apply his subject. Eventuality and Individuality are large. They introduce him to the outer world, to individual objects, and give him power to identify physical phenomena and mental peculiarities, to gather facts and general knowledge, and to retain information; and with his large Language he is enabled to tell what he knows with great freedom and comparative ease. From the first he has learned to depend on the inspiration of the moment, and the knowledge and memory he could command at the time, which keep all his faculties wide awake and his general memory very active. Few men acquire knowledge more rapidly and use it more effectually than he does, for he is one of the most industrious men in London, and one of the most useful.

The brain between Comparison and Benevolence is very full, giving him an intuitive perception of character, motives, and truth, and ability to present his ideas in the most acceptable manner; hence he is very apt, and what he does say, is said to the best advantage as to time and manner. Language, Order, Locality, Form, Size, Individuality, Eventuality, Comparison, and Intuition are all largely represented in his forehead, and they are the most prominently manifested in his intellectual efforts, while the other intellectual organs are not defective.

His intellectual faculties are guided by his social and moral qualities, hence his efforts are in those directions, and his memory is greatly aided by the interest he takes in what he sees and remembers. He allows no story, fact, incident, or bit of experience to get cold before he relates it. His perceptive faculties, his superior memory, his strong social feelings, his unbounded good nature, and his full mirthfulness give him the ability to express his ideas in a pleasant, humorous, and witty manner. His strong moral feelings, earnest, religious, liberal Catholic tone of mind and social disposition qualify him to become popular among social religious people.

Being a thoroughly honest Christian, devoted to his work, he has the advantage over a worldly man, having the same native talents, for the effects of Christianity are to quicken, strengthen, and elevate the natural powers and faculties of the mind.

L. N. F.

A PHRENOLOGIST AMONGST THE TODAS.

Under the above title a book was, a few years ago, published by an officer in the Bombay army. It has hitherto received but little attention from phrenologists, although well worthy of their notice, being, so far as we know, the first attempt to arrive at an estimate of a primitive people by their phrenology. We may be biased, but we confess that no description of a people presents them so vividly to the mind, or accounts so satisfactorily for their peculiarities, as this by a professed phrenologist does.

The Todas are an inconsiderable tribe, of very primitive habits, occupying a circumscribed mountain district upwards of seven thousand feet above sea level, upreared on E. longitude $76^{\circ} 45'$ and N. latitude $11^{\circ} 20'$, amidst the plains of south India—the gigantic and sudden termination of the minor mountain chain system called the Eastern and Western Ghauts, which there meet. They are supposed to be of Turanian origin, and to have been one of a group of "primitive, illiterate, and perhaps warlike tribes who, between three thousand and four thousand years ago, migrated from tracts of Western Asia, and penetrating India, probably through Beluchistan and the natural water lines of the country." "The closest and most distinct affinities to the speech of this race are those which have been discovered in the language of the Finns and Lapps of Northern Europe, and of the Ostiaks and other Ugrians of Siberia," and consequently the Todas are held "to be allied to tribes that appear to have overspread Europe before the arrival of the Goths and the Pelasgi, and even before the arrival of the Celts." "There is," says our author, "much of the 'blameless Ethiopian' about them; something of the Jew and of the Chaldean in their appearance."

The Todas are a purely pastoral people; they have no arts, and their science is confined to the raising and tending of herds of buffalos. Their dwellings are of the most primitive description, without variation, unadorned, and displaying hardly the constructive capacity of a beaver. They grow nothing, and what they enjoy in the way of food beyond the

milky produce of their buffalos, is begged or bartered from neighbouring peoples. They rarely eat the flesh of animals; and what of religion they have seems to partake largely of a veneration of their herds of cattle.

Such is the people that Colonel Marshall set himself the task of studying phrenologically, and he gives us the results of his manipulation of eighteen "nearly unselected adults of both sexes," ten males and eight females. It will suffice here to give the averages he has drawn from these examinations.

AVERAGE SIZE OF ORGANS IN THE TODA HEAD.

Name.	Male.	Fem.	Name.	Male.	Fem.
Concentrativeness ...	5'6	5'4	Imitation ...	3'6	3'4
Amativeness ...	4'0	3'3	Wonder ...	2'3	2'5
Philoprogenitiveness ...	5'9	6'4	Ideality ...	2'6	2'6
Adhesiveness ...	6'6	6'3	Wit ...	2'3	2'0
Combativeness ...	3'3	3'3	Causality ...	3'1	2'9
Destructiveness ...	2'7	2'8	Comparison ...	4'1	3'6
Secretiveness ...	2'9	2'8	Language ...	4'0	3'0
Acquisitiveness ...	2'5	2'6	Eventuality ...	5'4	3'9
Alimentiveness ...	1'9	1'9	Time ...	4'5	3'0
Constructiveness ...	2'8	3'0	Tune ...	1'4	1'9
Self-Esteem ...	3'6	4'3	Number ...	2'4	2'3
Love of Approbation ...	3'9	4'4	Order ...	2'6	2'3
Firmness... ...	5'0	5'0	Colour ...	3'8	3'3
Conscientiousness ...	3'8	3'8	Weight ...	5'5	3'9
Veneration ...	4'5	5'4	Locality ...	6'5	4'0
Hope ...	3'3	3'9	Individuality ...	5'9	4'1
Benevolence ...	4'4	4'8	Form ...	3'2	3'5
Cautiousness ...	3'7	2'9	Size ...	4'5	3'6

The author remarks that although amongst his figures "the proportions of some of the ablest and most respected members of the tribe are represented," yet that the "main forms of their skulls" are similar, and that "variations are confined entirely to single organs, whilst the groups maintain a surpassing uniformity of appearance." And such is, indeed, the case to an extent which is in striking contrast to anything that could be found amongst groups of European heads.

"Although," says the author, "this table bears internal evidence to the fact that the Toda head, simple as it is, is not as simple as it might be, and that in consequence it has no title to be considered as a sample of an absolutely primeval race; yet, amidst many points deserving attention, it possesses one of peculiar interest, through pointing to the nature and amount of difference existing between the sexes, in a tribe which is not more advanced than the remotely-ancient people

living towards the end of the glacial period in Europe, the surviving records of whose dexterous skill and admirable artistic efforts, mark them as having been fully the Todas' equal in point of talent, and who certainly could not have been much their inferior in point of reverential and moral qualities." By calliper measurement he found the mass of the female head to be less than that of the male; and while it has "a small advantage in organs affording the love of children and adhesive feelings, also in Veneration among the moral faculties," "the women are strikingly inferior to the men in respect to the entire range of the perceptive faculties, and even in the reflective powers, small though they are amongst the latter." The author observes that it is "remarkable and seemingly unaccountable that in the midst of so many large perceptive faculties, the organ of Form should frequently be found undersized." Later on he connects this small development of Form with their lack of anything in the shape of a graven image, and with their seeming inability to personify, or rather give form and shape to their notion of a deity.

Col. Marshall found the habits of this singular people strikingly in harmony with their phrenology. "It is," he says, "a quiet, undemonstrative, but intensely domestic people; domestic in the wider sense of viewing the entire family, to the last cousin, much as one household, in which everyone is everywhere at home. . . . The great feature in Toda organization is the all-absorbing power of his domestic attachments, which, like Pharaoh's lean kine, swallow up all other qualities. If the Todas lose, in a material point of view, from deficient size of Acquisitiveness, and the propensities generally, yet they certainly are large gainers thereby in the quiet, even tenor of their domestic life, undisturbed by the wrongs of grasping, vindictive, overbearing natures."

We are told that the general type of the Toda character is most unvarying; "singularly frank, affable, and self-possessed, cheerful, yet staid; respectful, seemingly from a sense of conscious inferiority, rather than from an active principle; fearless from small cause for fear more than from the stimulus of a latent power of oppositeness; communicative, yet watchful and sly, as if their natures impelled them to divulge what their natures also prompted them to maintain quiet; willing to take money, yet accepting what is proffered with callousness, allowing it to lie on the ground, or their children to play with it. In villages without an article *de luxe* beyond a few women's ornaments, one may see naked children decorated

liberally with small coin. The investment was no doubt safe round their necks and loins, but the very safety implies an absence of theft and violence, which is fully confirmed by the testimony of the law-courts of the district." "Though their intellect is of a very inferior order, and their force of character extremely small, and no great man of Toda blood may ever arise to influence the tribe, yet what they do know they know well. They are intelligent within limits, although they take contracted views of things, yet they work and act within the circumscribed limits of their mental vision with great steadiness, intelligence, and some sense." A reference to the table of average developments of the Todas will show how closely in harmony therewith is the above description. We are further told that they are a dirty people—a statement we should be led to expect by the small size of Order and Ideality. They show a lack of the latter also, the author thinks, by their insensibility to natural beauty.

As the Todas make not the slightest attempt to cultivate the soil, not even to the extent of growing a few flowers about their doors, they have been rather hastily styled nomads. The word, says the author, is a misnomer as applied to this people. "From the many primitive races," he says, "found in various parts of the world, which, with striking deficiency of development in the organs of Acquisitiveness, Constructiveness, Order, and Number, are also distinguished by the peculiarity, common to them all, of not tilling the soil, we may select links of a complete gradation in idle mode of life; from the lowest, or ever-wandering predatory class, which lives by begging and theft; through several varieties of the nomadic shepherd and hunter; up to the settled pastoral races, amongst which we class the Todas; who, with a strong bias in favour of a permanent home, yet migrate once a year, compelled to do so, simply in order, by change of pasture, to obtain a sufficiency of food for the cattle, on whose milk they almost entirely subsist." He goes on to say:

"I make free to assert that no tribe of people, having the organ of Concentrativeness so largely and so uniformly developed as it is with the Todas, will ever be found to be habitual wanderers. Whether it be that in the early days of the human race, circumstances having forced a family of man to become nomadic, the form of its skull gradually changed in the course of many generations, so as to adapt the man's disposition to his necessities; or, if, on the contrary, the wandering habit be largely the result of defective size of that faculty; certain it is, that practice and corresponding cranial form are now in harmony, and that a small development of

Concentrativeness will be found ever accompanied by a centrifugal tendency : attachment to a settled home being strong in proportion to the organ's volume, strong even to producing nostalgia when thwarted, if associated with remembrance of home and landscape."

Not only do the Todas not attempt to till the ground, but they wear no weapons of offence or defence. They do not even hunt, either for the sake of providing themselves with food, or for the pleasure of the chase. Never, perhaps, had people less destructiveness in its character. They even have "no sports or games, except the innocent tip-cat, corresponding in its play very much with our boys' game of rounders. No violent exercise. . . . nothing, in fact, pointing to natural turbulence of character and surplus energy." "They neither make nets, nor do they construct traps and pitfalls. (Secretiveness small.) They do not employ any of the processes for driving game known throughout India. No idea of defence appears to have been entertained, or of obstruction, brighter than that of making the doors of their houses so small, that to enter them they must crouch, and crawl through the openings on all fours. . . . Had the Todas felt any disposition to add to the varieties of their food, or to increase the amount of their animal stock, or to indulge in meat diet, the surrounding country at once afforded them precedents and examples of people who had domesticated cows, sheep, goats, pigs, and poultry."

It appears phenomenal to the author, as it doubtless will to many who read about this strange people, that notwithstanding the example of certain tribes living contiguous to them, and cognate to them in blood as in the stage of their barbarism, who earn a living by various modes of occupation, pursuit, and industry, the Toda should persist in maintaining an isolation of idleness so complete, that no one of the many means which these other tribes have adopted for improving their circumstances, and none of the impulses to action by which they have been moved, should in the least have commended themselves to this remarkable people living in their very midst. He comes to the conclusion that "their present mode of life precisely suits the constitution of their minds," and that any important change would appear to them to be for the worst. "Although," he continues, "in the estimation of many, this perfect contentment with a very little may be considered a proof of good sense, and be held a great virtue, yet it must be acknowledged that the phase is not one the best races of the world would acquiesce in. If they will not trade, and to work are ashamed, yet why none of the ordinary short cuts

to wealth and honour, by means well known in all ages, and to most nations? No exciting and glorious war, with plunder!—the feathers of the chief, the title of the hero! . . . Have we come on the tracks of an aboriginal reign of conscience? and was man originally created virtuous as well as very simple?"

The author thinks that in this absence of vigorous qualities, in the disregard of gain and of thrift, as well as in their ultra domesticity, we have the attributes of a primeval race, which, at an era when other families of man were undergoing the vivifying effects of such processes of natural selection as tend to eliminate the weak-minded and the weakly, and produce brachycephalic-headed and broad-shouldered men, had remained almost unchanged, through avoiding conflict with nature and man, in the seclusion of the sequestered jungles of warm climates; migrating—where it had to emigrate from its cradle-land—either in vast numbers, for mutual protection, or in company with and patronized by more advanced and war-like tribes, glad perhaps to utilize its herds of cattle as their commissariat."

If, he opines, his supposition is correct, that in the Todas' general inefficiency and indifference to wealth, combined with intense gregariousness and domesticity of character, we have prominent physiologic evidence of extreme primitiveness in condition of race, then it will prove most interesting and valuable, if, in addition to the objects of our immediate study, should he be successful in demonstrating a practical means whereby, in judging of ancient skulls, we may be enabled to decide between two chief candidates—the brachycephalic and the dolichocephalic, and say which is the oldest, most primitive form. He himself feels convinced "that aboriginal man must, like the Todas, have been eminently gregarious, fond of children, and practical; for the simple reason, that without such combination of valuable qualities, he must in the days of his ignorance and inexperience, have been killed off in detail, and his infant progeny have perished by neglect."

But this is not the head to make a progressive race. "In the dark pre-historic age, whose duration appears unlimited, but through which all families of man have passed, *that race which possessed the greatest capacity for overcoming obstacles*—taken in the very widest sense—must, *ceteris paribus*, inevitably have remained the survivor in struggles with the weaker, and therefore, by laws of progression, more primitive race. Now these active qualities are invariably accompanied by large size in the groups of organs, which, situated at the sides of the cranium, form, when well developed, the brachycephalic head.

"In races which, though still dolichocephalic, are seemingly growing—advancing towards brachycephalic—we find the sides of the skull in stages of development, varying in directions and degrees of growth, with each different race."

The author concludes that if his arguments be reasonable, probability has been shown that the earliest races of man—of whom it is believed the Todas form a somewhat advanced sample—were the wild dolichocephalic natives of a climate where nature is most gentle and favourable to human growth. "We may suppose that, in the course of ages, population increased, until, having occupied all regions where man could live without the exercise of much labour or skill, it then began to encounter the difficulties destined ultimately to form its character; of which the chief would be experienced by those branches of the human family which spread into the most severe and inhospitable tracts. These wanderers would grow, by means of the process of natural selection . . . brachycephalic, savage, and strong-bodied." Then, having become hardy and aggressive, such races, moved probably by the reports of the rich lands and easy lives of people living in more favoured climes, would start forth in conquering hordes. History is but a repetition of this process, and the author therefore feels himself justified in coming to the conclusion "that conquests of the more wild, dolichocephalic races, by the brachycephali, must have been in constant operation . . . from the earliest point of pre-historic age." E. P. M.

THE STUDY AND USES OF PHRENOLOGY.

Phrenology is the science of the human mind. It has to do with character and motive, with talent and purpose, with aspiration, with morality, with integrity, intelligence, and affection. The mind is the centre of all power and happiness; the body is only the servant of the mind, and whatever, therefore, will teach the nature and tendency of mental force is a central subject, and the most important one.

Every mother knows that in half a dozen children there are as many characters; no two of the children look out upon life and its affairs alike. One is a little quicker in his temper, another more prudent, another ambitious; one is more conscientious, another more selfish. One has a tendency to look at things in a ludicrous way, another is serious and sincere. One speaks in images, figures, and symbols, paints his thoughts in glowing colours; another is dry, terse, didactic, says just what he means, and stops. One magnifies and adorns the truth, and another makes his truth like a tree in winter; he gives the solid facts

without the foliage or flowers. Phrenology would help the mother to understand just what faculties each child was exercising in the production of these different traits of character and motive, and knowing each one's peculiar strength and weakness, and the name and nature of each faculty in exercise, she would be able to apply her language and conduct to each child in such a way as to induce a right course of action, readily and willingly. If a parent thus understands children, there is a far greater probability that these children will be trained according to their peculiarities, helped where it is needed, and repressed and restrained when necessary, and enlightened and guided according to the constitutional qualities of the mind. If parents would study the subject of phrenology and apply it to the training and development of their children for a single generation, the change in that generation would be wonderful.

Some people know how to handle every variety of persons, "the grave and gay, the lively and severe;" they know how to lead, control, or direct them to the best advantage, and thus they sway an influence in the community that is marvellous. There are other persons who have as much intellectual power; they can reason as soundly, they have as much integrity and force, yet they seem to scrape everybody the rough way, and are at cross-purposes with all they meet. They are thus unpopular, and their influence is anything but favourable. Everybody desires to influence the people they meet, in business, in social life, everywhere, in such a way as to please and be successful in their intercourse with the world. A teacher enters a school of fifty scholars, and in that school there is almost every possible variety of human disposition. He wishes the friendship and co-operation of every pupil. He wants to treat each one so as to harness him into learning, good manners, and good morals. If he is obliged to work month after month experimenting before he finds out who is high-tempered, who is prudent or diffident, who is honest or tricky, who is sound in judgment or superficial, he will waste a great deal of his time and labour, and put himself in an unpopular attitude with perhaps half the pupils, and measurably sell out his influence with the other half. Let a man of the same calibre enter the same school as a teacher, understanding phrenology, never having seen one of his pupils before, and he will sweep his eye over the school, and in his nearer contact and intimacy with them, he may lay his hand on their heads in a friendly, patronising way, and comprehend every one of them, so as to know what grade of intelligence, integrity, courage, prudence, policy, selfishness, generosity, each pos-

sesses, and he will adapt himself to his pupils according to their peculiarities.

A man who tries to fill the high vocation of minister, desiring to benefit every man, woman, and child, can do it a thousand times more successfully if he knows how to reach every class and condition of mind by understanding how mental life is constituted and how it acts. The lawyer, who must deal with men's rights and interests in courts, who seeks the truth from witnesses, who would reach justice through a jury, needs to present his side and handle his case so as not to drive away the truth or crush it; and the lawyer who understands mind as phrenology teaches it, with the same amount of talent, will do twice the business, and do it twice as well as one could who was an empiric and had to study character in the common, blundering way. The merchant, who wishes to trade with everybody—with the rough and the smooth, the gentle and the fierce, the amiable and the adverse, expecting to give a dollar's worth for a dollar's return, will do this successfully if he understands character and disposition. If he does not, he will offend some, and fail to please others. One fifth of his customers, perhaps, he will treat just right, because they happen to live exactly on his plane, the others he will not. The physician, also, has all sorts of people to deal with. To succeed in his profession, he needs to manipulate everybody in a way not to offend, but to conciliate and produce a pleasant and desirable mental condition. If a man is to be a hermit, coming in contact with no one, even *he* may be benefited by understanding the philosophy of his own mind, though he could not use that philosophy as he might if he were mingling with his fellow-men.

He who studies mind by means of phrenology is dealing with first principles, which principles lie at the foundation of success and happiness in the world. If a man is bent on making money, knowledge of human character will double his power; if he desires to gratify aspiration for honour, place, and fame, the more he understands of human character, the more easily, quickly, and surely may he reach his object.

No person, therefore, whether in the noisy haunts of business, in courts or parliaments, in churches, in school-rooms, or in the private walks of family life, can afford to be ignorant of human nature as revealed by phrenology. This statement is not meant to imply that expert reading of character, in the manner of the professional phrenologist, should be necessarily understood by everybody, but all should have such knowledge of phrenology as to know how to appreciate the general outlines of a stranger's character, and how to address every faculty in the style and language calculated to produce the best results.

NELSON SIZER.

THE PHYSIOLOGICAL PATHOLOGY OF THE BRAIN.

(Continued.)

To Dr. Ferrier is due in good part the credit of correcting Broca's error in locating the faculty of speech in a portion of the left hemisphere of the brain to the exclusion altogether of the right. Thus far he has confirmed what, indeed, needed not confirmation to those among us who have kept themselves abreast of the progress in psychological science. Gall, it is well known, was the first to locate the memory of words in the lower frontal convolutions, though not in one only, but in both hemispheres of the brain. His followers in this one particular are many, including the late Sir J. Simpson, and Drs. E. L. Fox and Wm. Ogle. Yet a farther credit is Dr. Ferrier's in having written these few words; they would seem to justify the hope expressed above of his conversion ere very long to a sounder mental philosophy than he has yet reached: "I should be inclined to regard the intimate relation subsisting between ideation and the unconscious outward expression of the idea in muscular action as a strong proof of the close local association of the ideational and voluntary motor centres." Now in these words do we not perceive the groove along which Ferrier is moving? Must they not carry him even in the near future to the conclusions of the phrenological school? Dr. Carpenter is evidently afraid of anything so desirable, for he writes thus in Vol. iv. of the *West Riding Medical Reports*, at page 23: "The analogy afforded by the specialisation of *downward* (motor) action, would lead us to anticipate that a like centralisation may exist for *upward* (sensory) action; and that particular parts of the convolutions may be special centres of the classes of perceptive ideas that are automatically called up by sense impressions; and anatomical investigation, particularly in the lower animals—in which such ideas may be supposed to prevail almost to the exclusion of the intellectual ideas—may not improbably throw light on this relation. But in regard to those mental processes which mainly consist in the selection, classification, and comparison of distinct ideas, whether perceptive or purely intellectual, *it still seems* to me just as improbable as it formally did—(1) That there can be special organs for their performance, such as those named 'Comparison' and 'Causality' in the phrenological system. I consider, therefore, that the results of Dr. Ferrier's experiments encourage the belief, that by the combination of anatomical and developmental study, of experimental inquiry, and of pathological observation, much light may be thrown on the functions, not merely of the several ganglionic centres which are aggregated in the human brain, but on those of the different parts of the great 'hemispheric ganglion' formed by the convoluted layer of the cerebrum."

It may be, however, that when Dr. Carpenter reconsiders the whole matter, and prefers to dwell on the effects of a galvanic current

applied to the organs of "Alimentiveness," of "Destructiveness," of "Combativeness," and of "Constructiveness," shown by the movements "of mastication," "of striking with the claws or seizing with the mouth," "of biting and worrying," and "scraping and digging," he may yet farther modify his judgment. In repeating the experiments of Ferrier, it was suggested to Dr. Burdon Sanderson to slice off the gray matter of the brain, and apply the electrodes to the cut surface of the white or fibrous structure. It was even then found that the same effects to all appearance followed this mutilation of the animal operated on. The fact is of value, inasmuch as it proves that the movements so called forth can be in no way dependent on the gray matter of the convolutions, or rather on any "physical antecedents" occurring thereto, and of which the psychical phenomena observed in the absence of such mutilation are the direct effects. Strange to say, Dr. Carpenter would disassociate these "physical antecedents" from the "mental states themselves," and because, as he puts his objection, "we can scarcely believe that ideas and emotions can be called up by faradisation of a cortical substance in animals" "stupefied by chloroform." The criticisms of Dr. Brown-Séquard are, it will be admitted, of an extreme character. He carries his objections to the localisation of function as well as of disease of the brain much too far when he affirms that *the conclusion* of "Ferrier's theory is just the same as though he had said that the seat of the will was in the soles of his feet, because by tickling them the muscles of the face were affected."

It is on record that on one occasion when Dr. Ferrier was pursuing his investigations he was so impressed by the intelligent character of the successive actions elicited as to speak of it as "an evidently acted dream." The remark is highly suggestive. Now, had Dr. Ferrier been an adept in matters phrenological, it seems not unlikely that in this case he would have been prompted to seek in the monkey and dog the precise location on the cerebral surface not of motor centres, but of some at least of the many active powers of mind belonging to the animals named. The "successive actions" linked or embodied in this "acted dream" if rightly comprehended or duly analysed by one competent to the task, a follower of Gall and Spurzheim, it may then have been found of deep and lasting interest. Such "successive actions" it is likely were simply the outward (bodily) signs of an internal mental condition artificially induced; *i.e.* "the muscular expressions of feeling," as Dr. Maudsley terms them.

I come now to the consideration of a new phase of my subject, one little known to the medical profession, and left therefore, in great part, to amateur physiologists for support. However much doubted, the same rests on a basis of truth which should command the very best attention of all. We know now of the existence of a stimulus of an especial kind, which may be and for the most part is "so localised as to call forth simply the function of the part operated on" (Gall), and which demonstrates whence originate in the cortex cerebri the several primitive emotions, passions, and intellectual qualities of

the genus homo. The stimulus alluded to goes by the somewhat undesirable name of "phreno-mesmerism." So long since as 1842 or 1843 it was that Messrs. Gardiner, Mansfield, and Atkinson, in this country, also and simultaneously (I believe) an American physician, discovered that, under certain circumstances or environments of an exceptional kind, the excitation of the different parts (organs) of the brain could be so brought about as to demonstrate in the person operated on the location of the several primitive mental attributes in man. The experiments of the gentlemen named confirmed the fact already alluded to—that generations since Gall taught, in opposition to Flourens and others, the brain's susceptibility to an external stimulus, as indicated by the occurrence of both sensation and motion in the animal subject to such stimulus. And in this case it should be added, for truth's sake, that Dr. Carpenter has erred in stating, as he did in 1874, that "it was until lately the current doctrine of physiology that no stimulation of the cerebrum would excite either sensation or motion, and that the converse of this was first ascertained by Hitzig in 1870."

By the "certain circumstances" or "environments" named above are meant those which belong to the "mesmeric sleep," so called. In such a state of being it was that the discoveries of Gardiner and others were made. Such marvellous results as those witnessed in 1842 or 1843 in the drawing room of Dr. Elliotson can never be forgotten by those then and there present. The precision with which the many experiments were made and the many proofs then afforded of the accuracy of the accepted localisation on the brain's surface of the several primitive affections, passions, and intellectual powers or faculties comprising our nature, were indeed marvellous. The mere touch by the finger on the head of him or her operated on, in the situation of the "organ" of "Combativeness," of "Constructiveness," of "Acquisitiveness," of "Secretiveness," of "Self-esteem," &c. &c., resulted in movements of the most extraordinary and convincing character; *i.e.* in the outward and visible expressions of internal or physical states of being. That these "expressions" and "states" stood in the closest relation to each other (as cause and effect must ever stand) as parts of one whole, phases of a single phenomenon, could not be doubted. The natural language of "Combativeness," as of "Veneration," of "Constructiveness," of "Self-esteem," &c., has been and is, under the necessary conditions, evoked by the contact above named of the operator and him or her operated on: such "contact" affording the necessary "stimulus" to action of pretty nearly the whole range of what may be called the "phrenological organs." The clearness of the response is of course dependent on the condition of the person experimented on. In some cases only a few parts of the cerebral mass are found susceptible; in others many more, or even the whole brain. "In rare instances," we are assured "that the mere pressure of inanimate substances will excite the action of the cerebral organs, and that this same action will be made manifest by positive and well-defined muscular movements, giving rise to

expressions indicative of, it may be anger, or fear, or pride, or veneration; and so on through the several primitive faculties of the human mind."

To realise the importance and value of the above discovery, it must be borne in mind that to it we are indebted for a proof, at once tangible and conclusive, of the great value of the teachings of Gall and Spurzheim. The correctness of their localisation of the functions of the brain becomes at once so plainly demonstrated that the non-acceptance of phrenology is next to impossible. However, as I have written elsewhere, "the difficulties of unlearning are great," and, as it would appear, insurmountable to even many men of the highest order of mind. This fact will I doubt not in after times be classed among the hallucinations of men of genius.

The late Mr. Uwins, R.A., was among the very first to not only recognise "phreno-mesmerism," so called, but to utilise it. As a painter he saw clearly that it may be made an important auxiliary to his art, an aid to both the brush and the chisel. In January 1843 he read a paper on the *Effects of Mesmerism upon various parts or organs of the Brain in Man*. This paper can be seen in the *Zoist* for April of the same year. From 1843 to this present time the subject has been taken up by several, and notably by Drs. Gregory and Ashburner.

But there is no real need to go back a generation for an assurance that parts of the cortical substance, the psychical basis or first starting point, of mind, in all its phases, are affected by a local stimulus of the kind named, or are rendered so highly sensitive as to furnish to the experimenter palpable and various muscular movements involving responsive changes in the "expression," the outcome of the temporary and dominant mental life, and so on; for in the early part of 1874 Mr. Serjeant Cox published the second volume of his *Popular Mental Philosophy*. In this book he treats of the *mechanism of action* of the brain and its parts; and if you look to Chapter xiii., page 172 *et seq.*, you will find described the mental phenomena which attend on *artificial somnambulism*.

The experience of Mr. Serjeant Cox with or on somnambules justifies him in asserting that "when the patient has passed from the sleep-like condition into what appears to be an active existence, all though he is unconscious and insensible, you can, by touching his head lightly with the finger excite the brain to action *in almost any manner you will*." He adds these words, viz., "This curious exhibition of cerebral excitement is not exceptional. It can be produced in the majority of somnambules on the first trial; but in all, with very rare exceptions, after half a dozen experiments."

Assuming, then, the certain and plainly demonstrated truth of the foregoing, can you doubt the great and very high claims of Gall and Spurzheim to our admiration and respect? That they should stand in the very foremost rank of the most successful contributors to physiological knowledge can in no way be well disputed.

Without doubt the discoveries of Messrs. Gardiner and Mansfield, backed up as such were by Drs. Elliottson and Gregory, and are now

by Mr. Serjeant Cox, the most recent advocate or supporter of "phreno-mesmerism," have added greatly to the reputation of both Gall and Lavater. Their united and original labours demonstrate very conclusively the "invariable relationship between outward appearances," the expression, &c., "and internal powers." Whilst Gall found in the external form or shape of the brain (in man and animals) the subjective and physical conditions necessary to individual character, the several and specific tendencies to mental power and action, Lavater may be said to have detected how and in what manner such "conditions" or such "tendencies" are indicated or expressed externally. He (Lavater) was one of the first to tell us what *are* the outward and visible signs of the internal and invisible mental attributes in the genus homo. However, to witness this close relationship and mutual dependence of the "internal powers" (Gall) and the "outward appearances" (Lavater) to be seen in the somnambule, when in the hands of a successful manipulator, is to be assured that "phrenology" and "physiognomy" are but parts of one whole—and this a most important whole. Truly did the illustrious Bacon anticipate such when he penned the annexed few words: "The lineaments of the body do disclose the disposition and inclination of the mind in general; but the motions of the countenance and parts do not only so, but do farther disclose the present humour and state of the mind or will." The late Sir C. Bell in his *Anatomy of Expression* has well illustrated the position of Bacon, although uninformed in great part of the writings of Gall and Lavater. In Darwin's *Expression of the Emotions in Man and Animals* a vast number of excellent examples are to be found of the dependence of the body on the mind, the corporeal on the physical. Mr. Bain writes: "I believe it to be a general law of the mind that, along with the fact of inward feeling or consciousness, there is a diffusive action or excitement over the bodily members."

Reverting to the discoveries in "phreno-mesmerism" it is seen that certain psychical phenomena preceded the corresponding external or bodily (muscular) movements, whether in the face or extremities; these being the direct effects of the acquired or induced mental states, as portrayed in the somnambule; but examples are within our reach of another and reverse kind—one in which the mind itself responds to muscular action, reflecting back, as it were, its own image or temporary state of being. Given a particular movement, or series of movements belonging to, or expressive of, any one especial emotion or feeling, then may we look for the mind's response to the same—a response which indicates the sure presence of the same "especial emotion or feeling" in him or her experimented on; and this irrespectively of the will, or of anything akin to it. The exponents of human feeling, to write or speak critically, are seen to a large extent in the muscular system, and in the movements of the face (expression), and hence it is the brain (mind), and not less the body, are alike necessary to the entirety of any single emotion or passion in man. The metaphysicians who will soar into the regions of cloud-land for

their poor philosophies will do well to bear the above fact in their memories.

If "physiognomy" is destined to assume a higher, a more scientific standpoint than it has yet done, such will be the outcome of "phreno-mesmerism." By the adoption of it as a means to a thoroughly practical end the teachings of Lavater, associated as they should be with those of Gall and Spurzheim, will receive an additional impetus forwards. Moreover, if the face be indeed "the index of the soul," if "the free expression by outward signs of an emotion intensifies it," if, on the other hand, "the repression of all outward signs softens our emotions" (Darwin), and if, under such circumstances, the said "expression" and "repression" are qualities to be acquired and duly exercised by the systematic and artificial excitation of the "conscientiousness," &c., and in view of what is right and just—or the exercise of our higher mental attributes to the exclusion, more or less, of the lower belongings of our nature—then indeed may this "stimulus" (phreno-mesmerism) be enlisted in the cause of education and the moral training of our youth, *i.e.* in the cause of progress, of civilization. The words of Darwin are calculated to encourage, somewhat, such a hope, for he writes thus at p. 366 of his work *On Expression*, viz., "Even the simulation of an emotion tends to arouse it in our minds." He adds "Shakespeare, who from his wonderful knowledge of the human mind ought to be an excellent judge, says :

"Is it not monstrous that this player here,
But in a fiction, in a dream of passion,
Could force his soul so to his own conceit
That, from her working, all his visage warm'd;
Tears in his eyes, distraction in's aspect,
A broken voice, and his whole function suiting
With forms to his conceit? And all for nothing!"

Hamlet, Act ii. Scene 2.

I will now proceed to the consideration of matters pathological and so conclude these "Notes." Assuming that the cortex or gray matter of the cerebral convolutions is the origin or seat of the several normal and primitive (elementary) faculties of the mind, it follows that the derangement or disease of either one or more of the same faculties will be the effect of some lesion or morbid change affecting a portion, more or less, of the gray matter of one or more of such convolutions. Now, one of the elementary mental powers or faculties is recognised as the memory of words—the function of speech or language. The seat of this power or faculty is, we know now, exactly where Gall located it three long generations since, viz., in the third frontal convolution of either hemisphere. Some fifteen years ago a case was reported by the late Mr. Norman (of Bath) of a groom who received a kick from a horse on the lower part of the forehead between the two eyes. He recovered from the immediate effects of the injury, but *ever after lost the memory of words*. The record of this case, though imperfect, is not without interest. Dr. B. J. Glisson is the author of the annexed letter which appeared in the *Lancet* (I think) in August

of 1875; it is headed *Arrest of Speech in an Infant after a Blow on the Head.*

"Sir,—A few days ago a patient consulted me for a skin affection on her son, a fine little boy four and a half years old, and told me the following about him. When he was eighteen months old he received a fall from which he had a contusion of the skin and a small tumour in the temporal region (left side). He gradually recovered. Before the accident he was just commencing to prattle a few simple monosyllables, but since then has not been able to speak, and has scarcely ever tried. If any of your readers have met with a similar case, and can recommend anything to remedy the disability, I will be glad to know of it."

In the above two cases the "organs of language" were the seats of the injury.

In the *Medical Psychology* of the late Mr. Robert Dunn, of London, are seen reported several cases bearing more or less directly on the faculty of speech as a primitive mental endowment. Mr. Dunn says truly: "Gall was the first to assign the faculty of speech to a special cerebral organ—to the anterior cerebral lobes. His allocation has found advocates in many distinguished physiologists, viz., Serres, Paul Grandchamps, Belhomme, Bouillard, and others." Mr. Dunn's first case was that of a lady, aged 66 years, who suffered from three attacks of apoplexy. "The first, which occurred in October 1844, seemed 'congestive' in its character, and passed away without any other permanent consequence than this, that she continually used one word for another, not applying appropriate names to the things or persons she desired to signify. The second attack, in May 1847, left her permanently hemiplegic on the right side, the power of voluntary motion being completely abolished; and but little sensibility being preserved, though reflex movements could be excited on the lower extremity by tickling the sole of the foot. For the rest of her life she remained altogether incapable of speech, not being able to say Yes or No in reply to a simple question, and never getting beyond the utterance of the monosyllable 'dat!' 'dat!' and yet all her senses were intact, the motions of the tongue were free, and there was no difficulty of deglutition. She did not seem to have lost any of her intellectual powers; but her emotional sensibility was certainly increased. Her general health continued good up to the time of the last fatal seizure, which occurred in April 1850, without any premonitory symptoms. At the *post-mortem* examination, the upper two-thirds of the anterior lobe of the left hemisphere was found to be in a state of complete destruction, with colourless softening; while the middle and posterior lobes were sound and healthy. To another instance I would briefly advert, as the lady died afterwards in an apoplectic seizure, but no *post-mortem* examination could be had. In her case, a day or two after a seizure, which occurred in the street, the perceptive and thinking powers were regained. She knew where she was and all the family about her, as well as myself; but the *memory of words* was for some time in abeyance. She could not recollect the name even of her own

daughter, who was constantly with her. She had a perfect recollection of past circumstances and events up to the time of her seizure; understood whatever was said to her; felt deeply conscious of her own inability to recollect names and common words when talking, and gave expression in consequence to emotional distress or feeling in tears. As I have elsewhere observed, in this case, it may be fairly inferred that the sudden shock to the nervous system in the first instance deranged the organic actions and normal correlations of the emotional and intellectual centres. The delirium was of short continuance; coherence of mind was soon regained, and the powers of thinking and reasoning were gradually, though slowly, restored. But there long remained—indeed, up to the time of her death—a manifest dislocation of the memory of words on the slightest emotional excitement or mental agitation.” . . . “I have lately had under my care a married woman of the nervous temperament and great emotional susceptibility, the mother of a large family; and who, during the latter months of her last pregnancy, met with a sudden and painful nervous shock, the effect of which was to deprive her of the power of speech, and to produce giddiness and confusion of mind. When I first saw her, some hours afterwards, she had recovered the power of articulation, and regained the integrity of her reasoning faculties; she knew everyone about her, and was perfectly sensible to what was going on around her, but had lost the memory of the names of those about her, and of words she could not recollect or give the name of the commonest article of household furniture, as a chair or table, &c.; and sensible of her inability, she frequently burst into tears. She eventually recovered.”

Mr. Dunn describes an interesting case wherein the organs of *firmness* as located by Gall and Spurzheim were found *post-mortem* in contact with a “tubercular deposit.” The self-will and obstinacy of the patient during the illness which preceded death attracted much attention, inasmuch as such was so very foreign to the little boy’s habits and tendencies. But I must ask your attention to certain details in regard to this case as given in the recital of it to be seen at pages 59 *et seq.* in Dunn’s *Medical Psychology*. Mr. Dunn has these words, viz.: “There was a peculiarity—a psychological phenomenon—in this case which is worthy of record. Both the parents of the child, for four or five months previous to his attack, had been particularly struck with a marked change in his disposition which had been gradually taking place. From being a happy, placid boy, he had become irritable, peevish, and petulant, impatient of control, very determined to have whatever he set his mind upon, and not to be driven from his purpose; in a word, to use their own language, he had become a most *self-willed* and obstinate little boy. So marked, indeed, was this change in his disposition, that it had become a subject of serious consideration with them whether it was to be attributed to some latent disease under which he might be labouring, or to mere infirmity of temper; but as the child continued to eat, drink, and sleep well, and did not appear to be suffering from any

bodily complaint, they did not take any medical opinion, but contented themselves with endeavouring to correct, by moral discipline and management, what they were induced to consider rather as an infirmity of the mind than of the body. Now, it is certainly a significant fact, and worthy of notice, that *tubercular deposit* should be found to be situated on *that part of each of the hemispheres* where Gall and Spurzheim have located their organs of Firmness; it extended a little, perhaps, beyond the boundary line, especially on the right side, and encroached upon the site of the organ of Self-esteem. In such a case as this it is but reasonable to infer that among the first of the morbid effects arising from the tubercular deposit would be an *irritating excitement* in the gray substance, which would lead to an abnormal development of its functional power; and as obstinacy is an abuse of firmness, if we associate the change of disposition which had taken place in the child with the structural disturbance induced by the tubercular deposit, we cannot resist the phrenological inference as to the site of the organ of Firmness. The attempt indeed to trace the connection between structural diseases of particular portions of the substance of the brain and deranged, impaired, or obliterated manifestations of the mind, however it may be beset with almost insuperable difficulties, is nevertheless one of vast interest and great importance; and, to this end, I cannot suppress my conviction that it is an incumbent duty upon the medical practitioner to make himself thoroughly acquainted with the principles and facts of phrenology, and with the respective sites or localities of the different organs in the cerebral convolutions; and to let no opportunity slip of bringing phrenological doctrines to the test of experience. If I am not greatly mistaken, it is to *post-mortem* examinations of the brain, and to pathological investigations, more than to any other source, that we are to look, not for the discovery of normal functions, but for evidence in support or refutation of the dogmata of phrenology. In the case I have related, while the peculiarity of the motor phenomena at the beginning of the attack led to the belief of the existence of tubercle in the brain, the psychological phenomenon, or observed change in the disposition of the child, was the *only* indication of the *local* seat of the disease."

Another mental element is represented by the capacity to recognise *time*. This faculty, or power, has its location on either hemisphere towards the outer portion of the forepart of the brain, in a direction upwards from the external angle of either eye. A lady, now residing at Clifton, fell on proceeding down stairs; in one hand she held a brass candlestick, and on this her head struck violently on reaching the ground. The force of her fall was expended on that part of the head just referred to. One humerus was dislocated. On her recovery from the immediate effects of the fall she discovered, on resuming her musical exercises, that she had lost much of her notion of "time"; she has now recovered the lost power.

The two following cases of disease, confined for the most part to *the organs of veneration*, are to be found in the *Zoist* for 1843, a journal not now in existence. The second of these cases appeared

originally in the provincial *Medical and Surgical Journal* for March 1843, and from it was copied into the *Zoist*. E.M., æt. 64, an inmate of the Hanwell Asylum, and for some time past the subject of chronic rheumatic disease, &c., expired on December 6, 1842. The examination revealed the brain and membranes apparently healthy, with the exception of old and inseparable adhesions between the surface of the convolutions, indicating the organs of veneration, and the membranous structures naturally in contact only. A nephew and niece of the deceased told me that in 1837, about when the old lady became insane, her friends were first made conscious of her disease by an extraordinary penchant she evinced for theological dispute; and which eventually became so excessive that she has been known when attending divine service to call the officiating clergyman to order for, as she said, attempting to promulgate opinions on religious matters at variance with the truth. She subsequently regarded herself as an apostle, and used to declare she was an instrument in the hands of the Almighty with which to effect great good. Such is the early history of E. M., and which, when considered in connection with the *post-mortem* appearances, is of value. During the last two years of the life of this person, during which she was under my care, it was observed only that she was a little strange and irritable, and exhibited a tendency to apply the epithet "wicked" to those about her, while she conjectured their probable fate in a future. The effects of sacred music were of a very marked character. It sent her into a thorough ecstasy, during which she talked wildly and gesticulated in no ordinary manner. The voice became at such times peculiarly shrill and tremulous. Such paroxysms occurred not unfrequently at the asylum chapel, and thus it was her attendance there was forbidden. In my record of this case in the *Zoist* I have described it as one of excessive action of small organs. The physical condition of the cranium being such as to suggest to the phrenologist "Veneration small."

For the other case we are indebted to Mr. Millar. A clergyman, after prolonged study and a total neglect of all measures calculated to preserve his health, presented some premonitory symptoms, and after a few weeks exhibited the most positive evidence of disease of the brain. "He had," writes Mr. Millar, "that morning called on a notorious drunkard of the village to read him a sermon on his besetting sin. But his parishioner received his ministerial offices so contemptuously as to resolutely order the reverend curate out of his house. This conduct had such an effect on his already excited feelings, that he rushed into the square of W—— holding his Bible in the air, and knelt down, praying God to subdue the obstinacy of the sinner's heart, and, rising up, began most vociferously to exhort people to repentance, for sin had darkened the land and the judgments of God were coming upon the earth. After much difficulty he was compelled to go home, when he ran up into his bedroom, stripping and washing himself by dashing basins of cold water over his body, and praying most earnestly 'that the waters of life he was now washing in would cleanse his soul from all sin.' This process he had

repeated thrice; and such was the intensity of his convictions respecting his own impurities, that each time he determinedly refused to be dressed in the same clothes because they were unclean. He lived twelve days, and the following is the account of the inspection of the brain: the vessels of the dura mater were tinged with blood, looking blue and prominent, and so adherent was this membrane to the cranium that it was impossible to separate it entire. The sinuses were loaded with blood; the arachnoid membrane was firm and opaque, having a fluid yellow fibrinous secretion between it and the pia mater; this was particularly manifest over the convolutions along the mesial line of each hemisphere, and on the left especially. The pia mater was gorged with blood." Mr. Millar remarks: "The character of the insanity is, I believe, sufficiently well accounted for by the nature of his studies, and the serious responsibilities of his professional avocation. And I am free to confess *that the portions of brain* to which phrenologists ascribe the functions of Veneration were precisely the seat of the *greatest vascular excitement*, the most decided opacity and firmness of the arachnoid coat, and the most effusion between that membrane and the pia mater—a most striking evidence of damaged function in connection with organic disease. . . . Many may not be aware that the pia mater is the nutrient membrane of the brain. It is excessively vascular, dips down between every convolution, and distributes multitudes of vessels to the gray substance. Here, then, we have the most conclusive evidence that a certain abnormal functional manifestation was accompanied by a certain organic change in the membranes; that one of the membranes supplies the vessels for the purpose of nourishing the convolutions, and that the inflammation was more acute in the portions covering the convolutions which cerebral phrenologists have proved to be the organs for the evolutions of a particular faculty—Veneration."

To the above illustrative cases others may be added calculated in an eminent degree to command the patient attention of all really earnest in the pursuit of pathological science. Such cases or such facts, together with the many more contained in this paper (which as I conceive so plainly demonstrates the truth, and therefore the importance, of Gall's discoveries in cerebral physiology—*i.e.* phrenology), will, it is to be hoped, so fix themselves on the minds of at least a few that the composition of these *Notes on the Psychological Pathology of the Brain* might not prove wholly in vain, or useless.

To conclude: in the *Journal of Anatomy* for July 1878 Dr. N. J. Dodds concludes his series of papers, *On the Localisation of the Functions of the Brain*, with these words, viz.: "The evidence of anatomy, as a whole, while it lends support in many ways to the localisation of centres held by Hitzig, Ferrier, and others, points to a localisation and interconnection of centres very much more complicated than any yet indicated by physiological experiment."

This evidence of Dr. Dodds I would venture to recommend to Dr. Ferrier's attention, asking him at the same time to bear well in mind the truism conveyed in this very significant couplet—

Errors, like straws, upon the surface flow;
He who would search for pearls must dive below.

THE FACE AS INDICATIVE OF CHARACTER.

A CHAPTER ON NOSES (*continued*).

In the last three traits we have been dealing with the downward projection of the septum: in the next organ it is the breadth we have to do with. The breadth of the middle portion indicates the faculty of Metaphor. To be seen properly the sign should be observed from below. One with it large is fond of figures of speech and all kinds of imagery.

The curving of the wing of the nostril upon the septum (Fig. 25, *q*) indicates the faculty of Analogy. When large it causes a shortening of the posterior part of the opening. The faculty of Analogy gives the ability to see minute relations existing between things, as between the life of the plant and the life of man, or the brute; between leaf and lung, wing, fin and arm; and has been the inception of many a discovery.

Comparison is indicated by the widening of the anterior part of the wing of the nose where it joins the septum (Fig. 25, *p*). It shortens the nostril opposite to Analogy. As the name implies, it indicates the faculty to compare, to put things side by side and note their resemblances and differences. One with the sign large is not satisfied with only one view of a thing or subject. It is, as a rule, larger in women than in men, and they generally judge of things relatively, rather than individually.

There are two qualities indicated by the perpendicular length of the wing of the nose, Example and Imitation. The former gives downward length to the anterior part of the wing (Fig. 25, *n*). It sometimes forms a perpendicular ridge on that part of the nose. Example is the teaching faculty. It delights to set a pattern for others to imitate.

The sign of Imitation gives downward length to the posterior part of the wing (Fig. 25, *o*). When large there is a marked depression of the part, as shown in Fig. 33.

The height of the upward curve of the wing of the nose (Fig. 34) is according to Redfield the sign of the faculty of Reasoning *à priori*, or from cause to effect. A more de-



Fig. 32.



Fig. 33.

pressed and forward projecting curve indicates, according to the same authority, the faculty of Reasoning *à posteriori*, that is from appearances to causes; not unfrequently the two signs are combined.

The student of physiognomy will ere this have noticed that the tip of some noses presents two lateral prominences, as in Fig. 35. These constitute the sign of Correspondence. When large it makes the nose appear as if divided in two. Even when not immediately perceptible to the eye, it is readily detected by the touch. Persons with this trait large are keen in their perception of the fitness of things, and severe judges of the propriety of manners, speech, and conduct.



Let us now take a front view of the nose. It will be observed that some noses are wide-nostrilled and have expanded wings or alæ (Figs. 36 and 37) while others (Fig. 38) are narrow. So some are thick while others are thin. In these features, too, it will be found corresponding traits are reflected. (Figs. 36, 37, and 38).

Take the nose represented by Fig. 36. Its foremost feature is Secretiveness. This is indicated by the breadth of the wings of the nose next to the face (Fig. 39, *a b*). This is in accordance with the physiological action of this faculty, which tends to shut the mouth and expand the nostrils. The sign is large in the Negro, the Chinese, and in the Jew. It gives a disposition to conceal, hide, and keep things secret, and when excessive in development leads to cunning, double-dealing, and equivocation. It forms a leading element in what has been called the Cogitative, but which would be better named the Shrewd nose.



Fig. 36. It is generally a marked feature in successful speculators, financiers, and merchants.

The breadth of the nose forward of Secretiveness (Fig. 39, *d*), and embracing the anterior half of the wing, indicates the faculty of Confidence. It stands, as it were, in opposition, or as a balance to, Secretiveness or Concealment, and marks a confiding disposition. Women are very frequently found with both signs large, and they show the corresponding traits, manifesting considerable power of concealment towards the world in general, but being frank and confiding towards those they love.



Fig. 35.



Fig. 37.

Acquisitiveness, or the love of gain, is indicated by the thickness of the nose above the wing and opposite to the sign of Self-defence (Fig. 25, *j*). The Jewish nose, viewed from the front (Fig. 37) generally shows it large. The portraits of Peabody, Mason, and other millionaires show this sign large. There is a certain amount of fitness in seeing the sign of this faculty near to those of the Combative or Executive faculties (Self and Relative Defence); and when these faculties are in excess and not restrained by the moral faculties, they lead to a grasping, overreaching, miserly disposition.

Above the sign of Acquisitiveness and opposite Relative Defence (Fig. 25, *k*) is that of Economy, also prominent in the Jewish race, and in the French and German more than in the English people. The disposition and ability to keep or save does not always accompany the desire to get. The one is frequently found in women without the other. A more easily recognisable sign of economy is seen in the double chin.

The Love of Dress or Clothing is said by Dr. Redfield to be indicated by the breadth of the nose immediately above Economy, and opposite the sign of Attack. The name sufficiently indicates the trait. Two more signs of the same physiognomist may be pointed out—the Love of Water, in a line with Attack and Clothing, but merging towards the cheek, giving a fulness there; and Architecture, on the ridge of the nose above Attack, forming, with a medium development of the signs of Attack, and Relative and Self Defence, the Greek nose.

A few remarks briefly summing up the qualities of a good nose may not be out of place before quitting the subject of nasology. It has been said above that a well-proportioned probosis should be about one-third the length of the face. It was also stated in a previous chapter of these articles on "The Face as Indicative of Character,"* that a well-proportioned face should be two-thirds as broad as it is long. The same proportion applies to the nose. A well-balanced nasal organ should measure in breadth (from *a* to *b*, Fig. 39) about two-thirds of its length from tip to root. If there is a falling off from these pro-

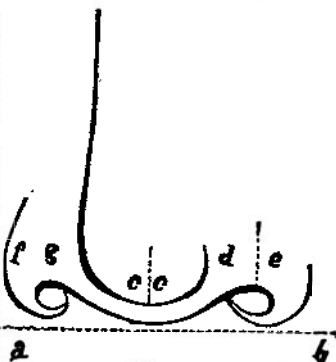


Fig. 39.

*See PHRENOLOGICAL MAGAZINE for 1880.

portions there is a corresponding lack of balance of strength. Thus, if the breadth exceeds two-thirds of the length—and in the Jew, the Negro, and the Chinaman we often see the breadth of this organ equal its length,—there is an excess of the selfish propensities (avarice, duplicity, &c.) over the higher faculties. If, on the other hand, the nose at this part be narrower than the above proportion in relation to its length, there is a corresponding weakness in regard to the prudential qualities of economy, discretion, &c.

So there should be a certain proportionateness of the tip of the nose to its length and breadth. It is less easy to define the exact proportion, but a trained eye will readily detect when a probosis projects more, or is sharper, than harmony of development would lead us to expect. When it is too projecting there is, of course, an excess of Self-defence, and a marked *noli me tangere* disposition. When it is sharp-pointed as well, indicating a nervous temperament, there is considerable asperity of temper. If the end of the nose be tinted also with varying shades of either red or blue, indicating that the stomach is in an inflamed, or otherwise morbid condition, there is an irascibility of disposition that it is not well for either man or beast to encounter.

We would advise neither young man nor maiden to wed with one so constituted nasally. There is comfort and length of days in a well-rounded nose, even though it be slightly puggish; whereas when a blue-pointed nose enters the door peace and ease of mind fly out of the window. It were better to put such a nose on the grindstone at once than to take it home with you; otherwise, provide yourself with the patience and philosophy of Socrates.

When the nose is fairly proportioned both as regards length and breadth, and when the signs of Inquiry, or Inquisitiveness, and Apprehension, or Suspicion, are about equally balanced, we have what may be designated the Shrewd nose—the nose of the statesman, politician, diplomatist, the philosopher, originator, and organiser, the planner and thinker. Among those having noses of this class may be mentioned Thomas Carlyle, Wm. Ewart Gladstone, John Bright, Charles Dickens, Thackeray, &c.

The author of "Notes on Noses" has made a class of this "shrewd" type of nasal organs, calling it the Cogitative. He regards it as indicating a mind having strong powers of thought and given to deep and close cogitation. He says:—

"This nose long puzzled us. We found it among men of all pursuits, from the warrior to the peaceful theologian. Noticing it more particularly among the latter, we were at

one time inclined to call it the religious nose ; but further observation convincing us that that term was too limited, we were compelled to abandon it. We were next, from seeing it frequent among scientific men, disposed to call it the philosophic nose ; but this was found to be too confined also, as, in the modern acceptation of the term, it seemed to exclude the theologians, and we moreover traced it accompanying other and very different conditions of mind. It soon became manifest, however, that it was noticeable only among very first-rate men (men of the very highest excellence in their several departments), and that search must be made for some common property of mind which, however directed by other causes, would always lead to eminence. It appeared to us that this properly was deep, close meditation, intense concentrated thought, eminently 'cogitative' in fact ; and, therefore, we adopted this term, which permits to have included in it all serious thinkers, whatever the subject of their cogitations."

The reader will judge in how far this idea agrees with our own. The form indicated is certainly one of the strongest (intellectually speaking) and most masculine of noses ; but it does not always "lead to eminence," being borne by many excellent men and women in very humble spheres of life.

A PLEA FOR MORE PHYSICAL EXERCISE FOR GIRLS.

Next to the importance of life itself is the importance of keeping the house of life, that is, the body, in a sound and healthy condition. It is an admitted fact that health is paramount to success in life ; therefore special attention ought to be paid to its establishment before the constitution has become formed. The gardener trains the young trees while they are still supple and yielding. So the thoughtful parent will endeavour to train and discipline the limbs and muscles of the child while still young, so that when grown he will enjoy as much perfection of health and strength as possible. I say the "thoughtful" parent, but unfortunately there is not enough thought on this subject ; children are allowed to grow up, getting such chance physical culture as comes in their way. In the case of boys this is often enough. They run and romp about, and in the majority of cases develop into some sort of rude health and strength, though it might be much improved by a little care. It is quite different, however, with girls. It seems too often to be the notion that girls do not need strength, and not unfrequently a little robust health is looked upon as vulgar.

Society says to those who have every luxury and comfort around them, that they need not exert themselves, or disturb their ease, as everything requiring physical exertion will be done for them. Thus they educate their girls to believe that it is more *comme il faut* to remain in the house, work crewels for drawing-room ornamentation, and read light literature, than it is to have some daily occupation, however trivial which would take them out of themselves, do good to others and above all, exert their physical powers as well as their mental abilities. In the gradual progress of time, however, physiology will come to stand upon a more popular basis, as this department of science has already made, and is still continuing to make, advances upon the customs and prejudices of society.

It can invariably be noticed that whatever the constitution is to begin with, the boy who takes good regular exercise lays a good physical foundation, and continues to mature his strength until he reaches manhood ; while the girl, who has been at home all her life, and has received no physical education, and has not been taught what muscles were made for, finds, as the real duties of life begin, that she has no strength to do them. Need there be any cause for wonder that her physical powers refuse to do their work, when they have been so feebly called into exercise ?

Even those ladies who do take exercise take it under conditions which would be condemned by physiology. Hunting, skating, dancing, and other similar exercises such as women indulge in are too often taken spasmodically, and in a way that reacts injuriously on the constitution. Regularity and moderation are seldom or ever thought of. In the case of dancing, an exercise that would otherwise be of a most beneficial character is in nine cases out of ten made the means of sowing the seeds of disease rather than of administering to health. It is begun late at night and continued until early morning, often in over-heated rooms, or that become so, and under a mode of dress, or undress, that is the reverse of physiological. A family dance during the day or in the early evening, and apart from unhealthy stimulus, would be one of the best regulations fathers and mothers of families could institute. But like many another good thing dancing is too often given over to the enemy.

Then there is skating that is an admirable out-door exercise for girls which becomes positively weakening through the excess that attends its use, simply because girls do not know the proper amount of exercise to take, or will not stop when they feel tired, hence result weak or sprained ankles ;

and the exercise is regarded as baneful and insecure. If girls were taught the proper use of physical exercise along with their A B C lessons there would be but little evil result accrue from such excellent exercise as dancing, skating, rowing; then we should find that instead of weakened ankles through skating, weakened backs through excessive riding, strained arms and chests by too much rowing, and exhausted bodies through dancing, we should have stronger muscles through the careful and proper use of them.

Dr. Richardson strongly insists on the necessity of more physiological knowledge among our girls. Although the system of training he advises is too thorough and expensive to at once be established, still it need cost parents but little to teach their girls the value of strong muscles, healthy lungs, and a strong beating heart. This knowledge in many cases is learned too late, and consequently is not of the same advantage it would have been had it been known earlier in life. The general practice at the present time is to cram the brain with lessons during the years when the body is maturing and developing, and to call that a good education. We do not wish to say one word against "the higher education of women" so long as they are mentally and physically balanced. But where the mind is strained at the expense of health; where a student's nervous energy has been so highly wrought that she breaks down in vital force, then we strongly deprecate such an education. Though she pass brilliant examinations, and has her hands filled with prize-books and scholarships, what benefit has she derived from her study if she goes home exhausted in vitality, and succumbs to one of the many complaints attendant upon severe mental strain, such as headache, neuralgia, hysteria, which are not only of long duration, but are with difficulty cured. Medicines can afford but little relief when the constitution has thus been broken down through excessive study, combined, perhaps, with lack of physical stamina.

It is because this state of things has become so prevalent of late that we so strongly urge parents and teachers to pay more attention to the physical culture of girls. If the bodily functions to which we are indebted for life and strength were only trained, or, in other words, educated, in an equal degree with that given to the intellect, there would be no fault to be found. It is especially interesting to learn Dr. Day's experience upon matters relating to the Marylebone Board Schools. In supporting a vote of thanks to Dr. Richardson, after a lecture by the latter on a recent occasion, Dr. Day said that he hoped Dr. Richardson, now that he was a member of the School Board, would use his influence to prevent all children.

of a certain age being taught alike irrespective of health. He said he personally had to sign from eight to ten certificates every week for such children, who from headache and tubercular complaints were unable to bear the strain of mental work put upon them, although some might not feel the strain in the least. This is what many doctors are seeing the evil results of, because the children of a certain age are made to study just *so* hard, whether they are physically able or not. Those who enforce such rules fail to see that physical energy aids mental capacity.

If, then, physical labour cannot be done with the same amount of success with an imperfect organism, we are quite sure that mental work is retarded when the body is not in full health. The difficulty in educating either the mind or body, in high schools or gymnasiums, arises from the fact that individual powers of endurance are not sufficiently studied : so that home tuition is far more preferable for the tender and weak, as they need special attention.

In no part of female education is there so much need of reform as in their physical culture. President Eliot remarked when addressing the students of Harvard University : " Everything depends with us, and in all the learned professions, upon vigour of body. The more I see of the future of young men that go out from these walls, the more it is brought home to me that professional success, and success in all the learned callings, depends largely upon vigour of body, and that men who win great professional distinction have that as the basis of their activity." And if young men are so greatly dependent upon " vigour of body " for their success in life, is it not of some importance that young girls who have to earn their daily bread, and upon whom often falls the maintenance of a family of little ones, should have healthy bodies ?

Mrs. Elizabeth Blackwell, M.D., sensibly points out that we need muscles that are strong and prompt to our will, indoors and out-of-doors, as duty and pleasure call us, not only without fatigue, but the feeling of cheerful energy ; we need strong arms that can cradle a healthy child and toss it crowing in the air ; and backs that will not break under the burden of household cares ; a frame that is not exhausted and weakened by the round of daily duties. We need muscles so well developed that shall make the human body really a divine image, a perfect form, rendering all dress graceful. Bodies that can move in dignity, in grace, in conscious strength ; bodies that are truly sovereign in their presence, expressions of a sovereign nature. Such are bodies we need, and proper exercise by means of which the muscular system may be developed.

J. A. F.

Poetry.

THE DAISY.

There is a beauteous flower indeed—
 Methinks the fairest flower that blooms—
 For it doth bloom on summer mead
 And e'en mid cold December's glooms.

Gayer there are amongst the troop
 That, countless, July's robe begem,
 But this the meekest of the troop
 Is the year's bright anadem.

For it dies not when summer's gone,
 As false friends cool in time of stress;
 But e'en 'neath borean chills blooms on
 And decks the cheerless wilderness.

Oft have I in bleak winter's time,
 When roaming 'neath the lowering sky,
 Knelt down upon the crisping rime
 To gaze into its winsome eye.

Well wert thou named the eye of day,
 Meek star-eyed daisy, by our sires,
 For thou dost close with evening gray.
 And ope with morn's ascending fires.

Yea, and to sad desponding men,
 When gloomy clouds of care prevail,
 Thou seem'st to 'lure hope's ray again,
 Though other forms of comfort fail.

When men are cold and friends not kind,
 Oh, it is sweet to see thy face
 Lone beaming 'neath the bitter wind,
 Glad in the one great Fosterer's grace.

A.

THOUGH a linguist should pride himself to have all the tongues that Babel cleft the world into, yet if he have not studied the solid things in them as well as the words and lexicons, he were nothing so much to be esteemed a learned man as any yeoman or tradesman competently wise in his mother dialect only. Hence appear the many mistakes which have made learning generally so unpleasing and so unsuccessful; and we do amiss to spend seven or eight years merely in scraping together so much miserable Latin and Greek as might be learned otherwise easily and delightfully in one year.—
Milton.

MADGE.

A TEMPERANCE TALE IN THREE CHAPTERS.

CHAPTER II.—“Clondalkin.”

Any doubts that Mrs. Madge might have had on awaking the morning after the newcomer's advent were speedily dissipated by the sound of that young hero's voice and the sight of him sitting jubilant among her own children. If confirmation were needed it was immediately found in the presence of the ten coetaneous sovereigns placed for safety in her bosom.

These circumstances were a renewed surprise to the matron; but there was a third which occasioned her still greater astonishment: it was the sound of her husband's voice, trolling out something meant for a song to the accompaniment of his hammer. Many a day had sped since the good woman had heard such a labour-chorus from her breadwinner's throat. In the earlier days of their marriage Madge was remarkable for his matin notes; but, like the nightingale, he had left off early, and the songless autumn of their love had already been long. What wonder, then, that she should listen with astonishment to the reawakened strain? For nothing makes a woman so forgiving of arid years of wedded wretchedness as an echo out of the springtime and early summer of love.

She looked at her husband through the half-open door; and if there was not an actual tear in her eye, there was at least an agitation of the tear-ducts threatening an overflow; not that his strain was of a melting kind—Madge's voice being something of a cross betwixt a rasped saw and a peacock's cry—but because, good or bad, it seemed to the poor woman like the inaugural song of a millennial age: for to Mother Madge, as, indeed, to many more besides, all that seemed necessary to make a millennium were daily bread and weather-tight clothing for her children; both of which seemed possibilities if only Madge could be got to begin his song and its accompaniment betimes, and be spared the temptation of the “Contented Heart.”

Although the good woman felt inclined to give her husband a good hug, she decided not to do so, but bustled about and got him some food ready, deeming that the best way in which to show her appreciation of his early rising. Madge was not slow to respond to the invitation to break his fast, nor was he at all ceremonious in his method of attacking what was placed before him. By the time he had finished feeding, the whole

of his children, including the little stranger, who appeared in the matron's arms, had assembled round or about the table, a ragged, unkempt brood, all doubly ravenous from having gone to bed supperless. When all their little jaws were at work, and the bread-giver herself had taken the edge off her appetite, the cobbler was ready to answer her questions as far as was possible, and to enter upon the question of ways and means.

The first thing was to know where the young raven came from, and all about him. In this respect all the information that Madge could communicate was of a very meagre and fragmentary kind. The child had been given to him by Sam Forman ; he was to keep it until such time as he should reclaim it, and he was to have ten pounds every half year for its support and maintenance. He understood that Sam and his wife, who like her husband was "stagey," were about to make a distant tour, he did not know where, but he thought in foreign parts, and it might be two or three years before they came back, meanwhile, however, he might depend on receiving regularly the stipulated ten pounds half-yearly.

This was about all the cobbler was clear upon, although he confessed that his friend Forman had told him a good deal more. He had an idea that Sam had said that he was married in Ireland, and that the boy was born there, but he could not be sure ; nor did he remember the youngster's name, although that too was told him—a long, queer name, said he.

"Was it Clondalkin?" asked his wife, who was proud of her superior scholarship.

"Yes, that's it!" exclaimed Madge. "Clon—, Clon—; I'm blest if I can say it!"

Both agreed that it was a very fine name.

"Quite becoming for such a fine boy," said Mother Madge.

"And such fine pay!" observed the cobbler.

"Yes," replied the matron approvingly ; "but I hope we are not expected to rear him for the stage on that.

Mrs. Madge had been brought up among the "Primitives," and her notions in many respects were primitive enough.

"No ; nothing was said about that," said the cobbler.

The matron agreed that it was a stroke of great good luck, and hoped it was the beginning of brighter days for them. She added—

"If you will only keep steadily at work, Madge, we shall be sure to do well."

Madge said he did all the work that came.

"Yes, but you do not always do it as quickly as you might ;

you often spend your time at the "Contented Heart" when you ought to be doing your work, and when you disappoint people they sometimes don't come again."

The cobbler would probably have flared up at this rebuke, gentle and true as it was, but that a very satisfactory answer, for the time being, occurred to his slow wits.

"If I had not just popped into the "Contented" last night for half-a-pint, I should, maybe, have lost this bit of luck."

His better-half felt the force of this argument, and acknowledged it, adding, however, very gently: "But you won't go in *much* now, will you Madge?" She was going to say *again* but on second thoughts substituted *much*.

Madge promised, and for that and many subsequent days he kept his promise.

The ten sovereigns were, on the whole, judiciously spent; the little Madges duly appearing coarsely but substantially clad, as well as their mother, and by reason of their father's industry matters were so changed that there was generally enough to eat, if not abundance. Mother Madge's tongue became less shrill, or perhaps we should say *less frequently* shrill, and, taking them altogether, matters in the Madgean household were progressing millennially; and nothing in the household more satisfactorily than young Clondalkin, or, as he was called for brevity's sake, "Clonny."

That little hero throve amazingly, and was a living witness to the truth of the adage that those who laugh grow fat. Never was there so good-tempered a baby. He had a smile and a crow for everybody, and especially for the unlovely Madge, whom he seemed to look upon as in some sort his special providence.

If Clondalkin looked upon the cobbler in such a light, how much more did the cobbler's wife come to regard him as the tutelary genius of the household, with whom had come its luck and light. She could hardly have made more of him had he been a king's son, twenty pounds a year being to her a regal income.

Meanwhile the first half-year expired, and expectation became rife as to when and whence the second handful of "yellow-boys" would come. The postman was watched at first with eagerness, and then with feverish anxiety. He never entered the street but one or other of the household had marked him and given the alarm; then not an eye was taken off him until he was again out of sight. But nothing came of all this vigilance. Mr. Postman was as shy as a watched bird, and seemed to knock at every door but Madge's. A month, six weeks, three months, passed by, and still no word nor coin from or of Clon's parents.

Madge did not trouble about the matter much ; or, at least, he would not have done, had his wife allowed him to take things as he liked ; but that she was not disposed to let him do. She now asked him regularly every night, and at least once a day besides, if he was going to let this kind of thing continue ; to which he as regularly replied by asking : "What kind of thing ?"

"Why this, of course," Mother Madge would say : "keeping the child and getting nothing for it."

"How can I help it ?" Madge would plead.

"Why, didn't you bring him here ? when I'm sure we had enough of our own."

Day by day the matron became more exasperated, and day after day Madge felt more keenly the flagellation of her tongue. In vain he counselled patience, and suggested various reasons why the money had not come : his better-half's reply was that it all come of his lazy stupidity and shiftlessness, that any other man would see that they were not taken in in that way, &c., &c.

So the strife went on ; and it must be acknowledged that if the addlepated cobbler relapsed into the habit of going oftener to the "Contented Heart" than he had been accustomed to do for some months past, his Zanthippe of a wife was much to blame for the relapse. The Anglo-Saxon husband is not a happily-constituted animal at best, and it is as difficult for him to be submissive under the "continual dropping" to which Solomon likens a contentious tongue, as for a horse to be trained to the rattle of a kettledrum in its ear. In either case, to be effective, the training should be begun early. Like a musical glass, Madge required to be half or three-parts full in order to be in accord with his wife, and it was thus *toned* that he now very frequently returned home of nights.

Thus Mother Madge's millennium receded further and further into the dim future, and Satan had pretty much his own way, at least in her humble domicile. No more ten pounds came to hand ; there were no more Crispinian lark-songs, no more cuckoo-notes of renewed hope ; it was the old tribulation returned, an incessant struggle to make both ends meet ; which could not, by any stretch of endeavour, be made to come anywhere near meeting. Food for the many and increasing mouths came sparingly and spasmodically, often in the form of charitable doles. Madge himself had even been known to eat of bread that had been given for the children without being choked by it, as he ought to have been had he been a properly constituted human being ; which, sorrowful to say, he was not.

It troubled him at times to see his children go ragged and half-famished looking ; and often, after a glass or two at the "Contented," he would shed penitent tears, and make vows of amendment ; but they were as insubstantial as promises "writ in water"—nay, more so, for they were writ in beer !

Year after year passed by, and nothing was heard of Clondalkin's parents, not even a rumour ; and though some circumstances were against the theory, it was generally conceded that the giving of the boy to Madge was a scheme to get rid of him. Yet the lad throve none the less for his orphanhood. He grew up strong, stout, and comely, strangely in contrast with his foster brothers and sisters, with whom nothing seemed to thrive save their rags. Not that Clondalkin was better fed or clad than they, but that his was one of those natures whose development no hardship can thwart or impoverish ; which, like the gorse, bud and blossom in the wilderness and the snow. It was a hard bringing up that he got nevertheless ; often without food, and seldom with clothing enough, and yet he was always rosy, bright-eyed, and good-tempered—a marvel of a boy!—the pride, too, of Madge, who seemed to worship the budding manliness in him. So different to anything in himself !

But the more he showed his love for the boy, the more did his wife's feeling for him turn to hate. She begrudged him every mouthful he ate, and often made him wait and take the scraps the others had left, or, if none, go without ; and he was mostly beholden to the kindness of neighbours for his clothes. Many a time Madge and his better-half quarrelled about the youngster, she desiring that he should be sent to the workhouse, he holding out against the proposition. He dared to do and say for the boy's sake what nothing else would have induced him to do or say ; even threatening what he would do should she send the boy away or lift hand against him.

Nevertheless, she did lift hand against him, and that pretty frequently when the cobbler was away ; but Clondalkin never held malice, and when the pain was gone, his tears also were gone ; and there were the brighter gleams of sunshine in his eyes when his father returned, for so he always called Madge ; though he knew well enough by the time he was seven years of age that his own father as well as his mother had forsaken him.

It would not have been so hard for the poor lad if Mother Madge had not taken to drinking too,—probably thinking that what was so good for her husband as a bringer of obliviousness of care would be good for her also ; and so, like many

more of her class, she carried a small care-allayer in her pocket in the shape of a little bottle, which often went backwards and forwards between her house and a "public" much more pretentious than the "Contented Heart," which could not supply the liquor of her predilection, the mal-odorous, and much more maleficent gin.

Clon was often the Ganymede who fetched this deadly juice; and once for his pains Mother Madge gave him a "pull" at the unrighteous bottle, which made him so ill, that his life long he never forgot it, nor could he be induced to try a second draught.

Clon had now reached his eighth year, and at the same time a crisis in his life. One day, either because she had drunk more than her usual quantity of gin, or because she was more than ordinarily irritated by his thriving looks, Mother Madge picked a quarrel with him for enjoying his food too much at the chance mid-day meal, and turned him out of doors with well-cuffed ears. The poor lad cried bitterly; for how could he help it that he had a vigorous appetite, and that his food, sparse and plain as it was, did him good? And to be told, too, that he guttled everything up from the others, when he was as generous as lad could be, never even getting a solitary apple but he shared it among his foster brothers and sisters—all six of them!

He was still standing at the door, with his tears but half-dried on his cheeks, when the virago came out and administered another box on the ear, bidding him go and seek a home elsewhere, for she would have no more of him there.

For a moment Clon stood irresolute, looked up and down the street, and at the house that had so long been his home. Then he walked to a distance, and leaned up against a wall, as aimless, purposeless men do. He remained so for several hours; then weariness and hunger coming upon him, he crawled back to the house, as he had done so often before after a beating, but not daring to enter, he sat upon the doorstep. There his foster-mother presently discovered him, and poured upon him all the vials of her wrath, bidding him begone and never show his face there again, for he had already brought enough misery upon the house.

With heart as full as ever child-boy had Clon went away. He took the first streets that came, and went on and on, until at length he was at the end of the town. It was still light, and he continued to go on, his little heart and brain in a whirl. He did not think—he only felt. When evening began to merge into night, and the golden glow of sunset was followed by a rush of stars, the little fellow's heart almost failed him,

and he looked longingly back upon the town, with its flickering lights. Then a thought came to him—a childlike thought maybe, but one which has made bigger, and perhaps better than he brave ere now. It was that God saw him and had him in charge. If He willed, no harm could come to him, even in the midst of harms. So much Clon had learned from his occasional visits with Mother Madge to the Primitive Bethel.

So after going a bit further he crept through a hedge, and lay down beside a hay-stack. Before trusting himself to sleep however, he bent down on his knees. His notions of prayer were very childish, as are, perhaps, those of some of older growth. His prayer was: "Please, little stars, tell God I am here, and ask him to take care of me, and I'll be good and say my prayers regular." As he said it his eyes glowed with undropped tears. Then he laid him down and slept in comfort.

When he awoke in the morning he did not forget his promise to "say his prayers regular," and instantly began his paternoster. It was not uttered *sotto voce*; for children, like savages, fancy the Great Spirit must be approached through one of the five great avenues of sense.

The petition brought intervention in a way the petitioner little dreamed of. On the other side of the hay-stack a wandering clown with his dog had bedded, coming long after the little wayfarer had entered the land of Nod. Both were awake betimes, and master and dog were enjoying a matutinal repast of bread and bacon when their unknown bedfellow mounted the first step of his Jacob's ladder.

"Hang me if that isn't rum!" exclaimed the clown, as suddenly premitting the masticatory process and listening, he heard Clondalkin's "Our Father."

Rising to his feet he coasted carefully round the end of the stack, followed by the dog, who was too well-breed an animal to bark without leave, and discovered Clon on his knees with eyes fast closed. The clown put his hands on his knees in true clownish fashion, and so remained staring at the lad until he opened his eyes. The effect of that unexpected apparition on the poor little fellow was such that his jaws fell apart and he shook like a scarecrow in the wind, unable to rise.

"Don't be affeared," said the motley. "Nobody here's a going to hurt thee—be they, Toby?"

Thus interrogated, Toby responded by a vigorous wagging of his tail, which is understood to be the canine way of laughing, and a noise—neither a howl nor a bark—as much like a doggish how-do-you-do as anything you could imagine.

"Come on," said the clown, patting Clon on the shoulder.

Reassured, the lad rose and followed him to the other side of the rick, where a true vagabond *ménage* presented itself to his eyes : a kettle-drum on its end served as table ; upon it were a bit of gammon of bacon, a cut loaf, and a big jack-knife. On the ground beside it lay a battered old high-crowned hat ; a dog's fancy suit, which had evidently been undergoing repairs ; and a bag containing the mountebank's stock-in-trade.

In a trice the clown had seated himself by the make-shift table and sliced off a great portion of bread and bacon, which he handed to our little hero, with the advice to put himself outside it.

"It's cut a bit ugly," he added, "but you won't mind that if you've got an honest kind of appetite. What!" he continued, turning to the dog,—"*hungry yet?*"

The little brute was sitting up, with wide-open mouth.

"You owdacious little rascal ! Would you believe it?" (turning to Clon). "That bit of a thing eats as much as a full-grown man. You'd wonder where he puts it. He's already eaten more than I have, and he wants more. He's the *owdaciousest* little cuss you ever *see*."

So the good-natured fellow rattled on—all to encourage the little stranger and put him in countenance. When Clon had put his bread and bacon out of sight, a feat that did not take long, his host helped him to another serving, which, seeing that there was very little more bread left on the loaf, he hesitated to accept.

"Take it, lad," said the clown. "There's enough here for me and Toby, and it's not far to the next village where we're going."

When the meal was finished the vagrant gathered up his traps, put the battered hat over his clown's head-gear, and prepared for the road. Hitherto he had refrained from asking Clon whence he came or whither he was bound ; but now, looking at him with a kindly glance, he said :

"I suppose you are for Coggleton?"

"No," replied Clon tremulously, "I'm going—"

"Where?" asked the man kindly.

"I wish you would let me go with you," said the child suddenly, all his trouble rushing into his eyes.

"What would your mother say?"

"I havn't got a mother," he replied in a broken voice.

"Well, your father then?"

Clondalkin shook his head. The clown seated himself on the edge of his drum and looked down thoughtfully. His face was weather-stained and battered like his hat, and the

colouring of his nose had cost a knight's ransom, but there was a faithful, dog-like expression in his eyes, and it was this that had drawn the lad to him. For a minute or two the man seemed loth to draw the child's tale from him; those of his class know too well how much of sadness is mingled in the woof and weft of lowly life, and little wonder that they sometimes try to shut their eyes to it. However, he heard the child's story, and then they three went on together.

Shortly before noon they came to a small hamlet, where the clown went through his performances, singing, playing, gambolling, tumbling, doing acrobatic tricks, putting Toby through his facings, and generally playing the Merry Andrew, to the delight and astonishment of the rustics, who in return did not stint their guerdon of small coin.

Pushing on then a little further, they came to a wayside inn, where the mountebank ordered a repast of bread and cheese and ale. Of the latter Clon declined to partake, giving as his excuse that he had never liked it, and that he had, moreover, made a vow that he would never touch it, because it had been the cause of so much trouble to his foster-parents.

The simple childish way in which this was said quite took the rough fellow's heart, and he bade him stick to his resolution, adding, that if he had made such a resolve when as young and stuck to it, he would have saved himself and others a world of trouble? Then he grew glum and taciturn, and went on his way doggedly till night, Toby and Clon trudging silently after him.

So they went on day after day, Clondalkin, in due course, learning to tumble, conjure, and play the Merry Andrew generally like his master, though not quite so to the manner born.

Meanwhile Madge became half distracted for the loss of his adopted son, and took more than ever to drinking for solace. To such an extent did the bereavement affect him that his wife accused him of having made up the story about the actor and his wife: he himself being all the time the real actor. She even told her neighbours so; but they only laughed at her, averring that there were at least a score generations betwixt her cobbler mate and Clon, with his rich wavy hair and ruddy cheeks; for they were all insensed against her for her conduct towards the boy, whom they all loved for his comeliness and good nature.

They helped Madge, too, to find the boy so long as there was any hope of success; and vowed that they would contribute towards his support rather than see him want. But after

awhile all search was given up, even by Madge himself, who became possessed of the fixed idea that the lad had been drowned in the mill-stream, a neighbour's child having stated that she saw Clon going along the lane leading to the mill the evening of his disappearance. In vain the dragging of the stream proved that no Clon had been drowned there; his prepossession was beyond being shaken by proof. Had he not many a time had the impression that something would befall the lad there, mill and stream always having had such a fascination to him, while the creaking of the water-wheels and the rush of the water filled him with such terror, that he dared not cross the narrow foot-bridge alone? Besides, did he not often hear the child's voice in the rushing stream?

Under this impression, which became stronger and more confirmed with years, Madge frequently found his way to the mill, especially when anything troubled him, as when his better-half had "rowed" him more than usual, or repentance had come after a hard drinking bout; for muddled as was his moral sense in general, poor Madge had spells of conscientious trouble, when it seemed to him that all would be well but for what appeared to his limited intellect a malevolent principle in creation, in the shape of a pewter pot, which was always tripping a man up when he wished most to do his duty.

(To be continued.)

Facts and Gossip.

An illustrated weekly, in a recent issue, gave a "sketch portrait" of the late "George Eliot." To say nothing of the portrait not being flattering, it could not possibly be truthful. One of the most striking features of "George Eliot's" genius was her power to clothe her ideas in forcible and expressive language; whereas, according to the reputed "sketch portrait," she had no more Language than a toucan. When an authoritative likeness is published it will be found to have a better eye than the "sketch portrait" indicates.

It is not improbable that the "character" contained in the hand may be turned to practical account by the Criminal Department of this country, although in a manner somewhat different from that described in a paragraph appearing in a recent number of this Magazine. Readers are probably aware that a rule exists that criminals must submit to have their photographs taken by the authorities, as a means of future identification. This plan has been further extended by an order from the Home Office, that the *hands* that commit the mischief should also become models for the photo-

grapher, in order that the marks of different kinds of employment may furnish additional evidence of identity. By a curious oversight, however, the prisoners are to be submitted to the camera with their hands crossed on the breast, by which means the palms are hidden. Mr. Woodbury, the eminent photographer, has pointed out that if the palm were photographed in a strong side-light, so that its ridges and furrows were clearly defined, such a picture would form a map by which any hand could be at once recognised, it being certain that no two persons agree in the configuration of these manual surface-markings.

Correspondence.

THE ORGANS OF TASTE AND SMELL.

To the Editor of THE PHRENOLOGICAL MAGAZINE.

Sir,—Some remarks made by Professor Fowler when lecturing in Feb. 1880, led me to inquire whether any part, or the whole, of the space left blank in symbolical heads, close to Alimentativeness, can be the organ of the olfactory nerves. The nerves of taste and smell being distinct, would indicate the probability of there being a distinct phrenological organ for each. The organs being so placed as to aid each other, smell would naturally find its place among the perceptive faculties: it is known frequently to dominate Alimentativeness. It is a stimulus to appetite, an aid to cooks, perfumers, and buyers of human hair (thus aiding Acquisitiveness); it guides the cat to the mouse, the pig to the truffle, and the toiling ox of Southern African deserts to the nearest water.—Yours, etc., BARR THWAITE.

January 24th, 1881.

[B.T. will find some ideas on this subject in the article "Phrenology: Old and New," page 345, vol. I. of the *Phrenological Magazine*.]

Answers to Correspondents.

F. H. W.—There is a variety of things that tend to produce a smiling face. It may generally, however, be taken as indicating a pleasant and satisfied state of mind. Friendship, Approbativeness, Benevolence, and Agreeableness large,—if combined with small or moderate Self-esteem, Destructiveness and Secretiveness,—very often produce this pleasant state of mind. A large organ of Mirthfulness frequently causes a laughing countenance, especially if the restraining powers be small.

S. B. (Accrington).—We shall in due course give the portraits and phrenological characteristics of noted women.

H. F. (Leicester).—Yes; we are glad to accept such; but they must be of unquestionable merit.

THE
Phrenological Magazine.

APRIL, 1881.

BARONESS BURDETT-COUTTS BARTLETT.

SOME are born to fortune, but show their unfitness for it by the way in which they use it. They make reckless speculations or squander their wealth by betting, gambling, horse-racing, or in the indulgence of intemperate habits; but there are others who seem to be anxious to turn their large incomes to a good account.

Generally a wise, prudent woman is more wise and prudent than a wise, prudent man, for she has more sagacity to see where conveniencies can be added and happiness increased among the needy than man. A wise woman would not build monuments for the dead while there are so many needy and ignorant among the living who need assistance.

Baroness Burdett-Coutts Bartlett is a rare specimen of humanity, of whom it may be said she goes about seeking proper objects upon whom to bestow her charities to the best advantage. She does not appear to give for the name of it, but for the sake of doing good. Some may say that she can afford to bestow alms, and that it does not distress her personally to be benevolent; but unless she had the willing mind to make others happy, she would not have manifested so much interest in the general welfare of society.

What does her organisation indicate? Her brain is characterised for length of fibre rather than for shortness and breadth; and she has a predominance of the mental and motive temperaments, rather than of the vital and animal nature. The

above conditions indicate that she is active in both body and mind, clear and distinct in her mental operations, positive in her movements, and that she prefers an active to a quiet life, and contact with society to seclusion.

The entire make-up of her organisation favours the idea that she has an elevated type of mind, and that her greatest sources of happiness are connected with exercise of the superior qualities of her nature. She has the temperament to enjoy refinement, art and literature, but her greatest pleasures are connected with the gratification of her intellectual and moral faculties. Her head is particularly high rather than broad at the base, and it is large in the coronal region rather than in the basilar. Although her body does not indicate great vital power, yet she has tenacity of life and of mind, has the rare power to resist disease, soon becomes re-invigorated when exhausted, and can endure more mental than physical exercise.

Her head indicates that she has a distinctly individual character. She is not so masculine in the type of her mind as many ladies, and yet she can more easily sympathise with masculine pursuits than with many subjects of thought and conversation which often occupy the feminine mind. The cast of her mind inclines her to be straightforward in conversation, in doing business, and in entertaining company.

She may conform to the usages of society and show all proper respect for age, rank and talent, but she is disposed to do away with red-tapeism as much as possible and come directly at her business in a forcible and practical manner. She has due regard for the ways of others, but it would be almost impossible for her to give up her own individuality in order to assume the character and manners of any one. Her Imitation is not large enough for her to lay aside her own individuality on any occasion. She acts just like herself and like no one else. She has an earnest mind and purpose in life; has no time to waste, and never has had much time for hilarity and merriment, for life to her is real. She is lively, bright, and wide-awake in company, but is not inclined to trifle. She is true to her own feelings, and speaks and acts just as she thinks and feels, and is not so mindful of mannerisms as many. There is much general uniformity in her character.

The intellectual faculties in the central portion of the forehead are distinctly developed. Her intellect is of the practical, perceptive class; she is quick to observe, to take a thought or a hint, and is alive to what is going on around her. Few things escape her attention. She has a correct eye to notice

forms and proportions and appreciates physical beauty whether in animate or inanimate nature.

The perfecting qualities of mind are distinctly manifested, giving her an uncommon amount of taste, sense of style, love of art, and not a little imagination. She should be remark-



able for her love of poetry, oratory, scenery, and indeed everything that awakens and stimulates the higher sensibilities of the mind. In one less practical these qualities might lead to dreaminess, over fastidiousness, and romance.

She can recall a great amount of varied business and much

of her past experience. Comparison is large, and it gives her the ability to adjust her plans, adapt means to ends, and to see the bearings and relations of subjects. She knows how to reduce to practice the principles she understands and the knowledge she has acquired; is intuitive in her perception of the motives and spirit of others, and, if necessary, can criticise sharply. She is very suggestive in conversation, and does not deal much in preliminaries, but comes at once upon the subject.

Her head is unusually high in the central portion of the coronal brain; Benevolence, Veneration, and Firmness are decidedly large, and Self-esteem is sufficiently strong to give dignity to her bearing. She is not benevolent because she happens to have a fortune so large that she cannot possibly enjoy the use of it all herself, nor because she receives public approbation, but because it is in her nature to be kind and tender hearted. Her benevolence takes a wide range of action. Her sympathies extend to all objects of want and distress, from an ill-treated donkey to a poor heathen or barbarian child. Who but a woman would think to give a prize for the greatest kindness and care bestowed on a donkey?

Veneration being large, she has a respectful, religious, worshipful turn of mind, and this prevents her from being unduly radical or unmindful of the "powers that be." She has great decision of character, determination of mind, and perseverance. Firmness, combined with Self-esteem, enables her to maintain her position and to be willing to take the responsibility of her own actions on herself. Approbativeness acting with the moral brain gives her sensitiveness as to character rather than love of display, also a regard for Divine favour rather than a desire to secure the approbation of the fashionable world. She would study convenience and comfort before display.

The influence of her large Cautiousness, Secretiveness, and Acquisitiveness inclines her to look to consequences, to keep her own councils, and to take care that nothing shall be wasted, lost, or squandered. She thinks and acts more than she talks, and when she does talk she says something of which others take note, but she is more condensed than copious in her conversation. She is self-possessed, and has a clear, original mind, a vast amount of experience, and a great range of reserved knowledge to use in emergency. She can, if necessary, address an audience without much preparation, in a clear, connected and forcible style, and attend to a variety of objects without confusion.

Some give the benefit of their learning, others their labour; some preach, others pray; some snatch from the fire and

water, others rescue from dens of infamy; some save men from the drunkard's grave, others pick up lost, wandering, and parentless children, and do good in their own particular way or sphere; but Lady Burdett-Coutts Bartlett extends her philanthropy far and near; with her hand in her pocket she gives right and left to a multitude of different objects. At one time it is a church and college in a foreign land; at another it is a fish-market for the poor classes; then a drinking-fountain for the benefit of the community; a school with an endowment; a church for a destitute part of the town; a prize for the kindest treatment towards animals. She has only to know that animals and children need places where they can quench their thirst, and that children require a school to attend, and a church where they can learn how to serve their Creator, when the money is forthcoming and the want is supplied. She is sure beforehand that the gift will be properly appreciated and judiciously used, for she would not scatter alms prodigally to the casual beggar. But on account of her philanthropy being wisely administered thousands of the present generation, and for ages to come, will not only be blessed, but will bless her in their hearts for the manner in which she has improved their condition.

It is not necessary here to enumerate the many ways in which she has dispensed her charities, or how much she has given to different objects; nor could it easily be summed up, for many of her benevolent deeds are done in private and are not published in the papers unless they are of a public nature, such as building a market, endowing a college and school; but it is an inherent part of her nature to relieve human suffering and to embrace every opportunity to add to the stock of human happiness.

Her responsibilities are very great, and being a lady of rank and position she has many demands upon her time and attention; but having a soul to do good rather than to lead the fashions, indulge in speculations, or gratify her ambition and selfish nature by adding to her already immense fortune, she prefers to take time to be interested in such measures as will facilitate education, extend the gospel, give the inferior classes of society a stimulus to rise, to unfold their natures, and to live more in accordance with the higher laws of their being and the requirements of their Creator.

Lady Burdett-Coutts Bartlett has set a noble example to the ladies of wealth and position to lead useful lives, and to leave behind them a monument in works of charity that shall be a lasting benefit to society.

L. N. F.

THE ZULUS AND THEIR PHRENOLOGY.

In no way, perhaps, can phrenology be tested so well as in the application of it to different races. This is a point that has not been sufficiently developed by phrenologists, and might advantageously occupy the attention of students of man in various parts of the world. They could by that means add greatly to our knowledge, and to the advancement of the science.

We have just received a Zulu skull, as well as some photographs of Zulus, brought from South Africa by a gentleman connected with the missions there, who has been making an extended tour among the native tribes. The skull is that of the brother of the chief Moshesh, who was killed in the late war, and being a fair specimen of the Kaffir cranium, some particulars about it will be interesting. But before giving those particulars, it will be well to give some data respecting these people from independent sources, so that the reader may compare their phrenology with their known characteristics. Our account is taken chiefly from the Rev. J. G. Wood's "Natural History of Man."

Over the whole of the southern portion of the African continent is spread a remarkable race of mankind. Though divided into numerous tribes, and differing in appearance, manners, and customs, they are evidently cast in the same mould, and belong to the same group of the human race. They are dark ; but not so black as the true negroes of the West. Their hair is crisp, short, and curled, but not so woolly as that of the negro ; their lips, though large when compared with those of Europeans, are small in comparison with those of the negro. The form is finely modelled, the stature tall, the limbs straight, the forehead high, the expression intelligent, and, altogether, this group of mankind affords as fine examples of the human form as can be found anywhere on the earth.

Popularly the tribes which form this group are called Kaffirs ; but that term has now been restricted to the tribes on the south-east of this Continent, between the sea and the Drakensberg Mountains. Moreover, the name Kaffir is a very inappropriate one, being simply the term which the Moslem races apply to all who do not believe with themselves, and by which they designate black and white men alike. Some ethnologists have designated them by the general name of Chuanas, the word being the root of the well-known Bechuana,

Sechuana, and similar names ; while others have preferred the name Bantu, and others Zingian.

It is evident that they are not Aborigines, but that they have descended upon Southern Africa from some other locality—probably from more northern parts of the same Continent. Some claim for them an Asiatic origin, and have a theory that in the course of their migration they mixed with the negroes, and so became possessed of the frizzled hair, thick lips, dark skin, and other peculiarities of the negro race.

Be this as it may, they have now all the characteristics of a distinct race. We shall confine our attention to those tribes occupying the long strip of country on the south-east coast between the Draakensberg Mountains and the sea, and extending from lat. 27° to 33° . Formerly a considerable number of tribes inhabited this district, and were sufficiently distinct to be almost reckoned as different nations. Now, however, these tribes are practically reduced to five ; namely, the Amatonga, in the north, followed southwards by the Amaswazi, the Amazulu, the Amapondo, and the Amakosa. The prefix "Ama" attached to all these words is one of the forms by which the plural is designated. Thus we speak of a single Tonga, Swazi, Zulu, or Pondo Kaffir ; but if we wish to speak of more than one, we should, to speak properly, prefix "Ama" to the word.

Of all the true Kaffir tribes, the Zulu is the chief type. Although spread over a considerable range of country, the Zulu tribe has its headquarters rather to the north of Natal, and there may be found the best specimens of this splendid race of men.

Their skins do not possess that dead, jetty black which is characteristic of the Western negro. It is a more transparent skin ; the layer of colouring matter does not appear to be so thick, and the ruddy hue of the blood is perceptible through the black. It is held by the Kaffirs to be the perfection of human colouring. According to their views of human beauty, the blacker a man is the handsomer he is considered, provided that some tinge of red be perceptible.

As is the case with the negro race, the newly-born infant of a Kaffir is nearly as pale as that of a European, the blackish chocolate hue becoming developed by degrees.

The hair of the Kaffir, whether of male or female, never becomes long, but envelopes the head in a close covering of crisp, woolly curls, very similar to the hair of the true negro. The lips are always large, and the mouth wide, and the nose has very wide nostrils. These peculiarities the Zulu has in common with the negro, and it now and then happens that an

individual has these three features so strongly marked that he might be mistaken for a negro at first sight. A more careful view, however, would at once detect the lofty and intellectual forehead, the prominence of the nose, and the high cheek-bones, together with a nameless but decided cast of countenance, which marks them out from all other groups of the dark-skinned natives of Africa.

The expression of the Kaffir face, especially when young, is rather pleasing; and, as a general rule, is notable when in repose for a slight plaintiveness, this expression being marked most strongly in the young, of both sexes. The dark eyes are lively and full of intellect, and a kind of cheerful good humour pervades the features.



Fig. 1.—Kveli, a Kaffir Chief.

The lofty and thoughtful forehead of the Kaffir does not belie his character, for, of all savage races, the Kaffir is perhaps the most intellectual. In acts he is honourable and straightforward, and, with one whom he can trust, his words will agree with his actions. But he delights in controversy, and has a special faculty for the Socratic mode of argument; namely, by asking a series of apparently unimportant questions, gradually hemming in his adversary, and forcing him to pronounce his own sentence of condemnation. If he suspects another of having committed a crime, and examines the supposed culprit before a council, he will not accuse him directly of the crime, but will cross-examine him with a skill worthy of any European lawyer, each question being only capable of being answered in one manner, and so eliciting successive admissions, each of which forms a step in the argument. An amusing example of this style of argument is given by Fleming.

Some Kaffirs had been detected in eating an ox, and the owner brought them before a council, demanding payment for the ox. Their defence was that they had not killed the animal, but had found it dying from a wound inflicted by another ox, and so had considered it as fair spoil. When their defence had been completed, an old Kaffir began to examine the previous speaker, and as usual commenced by a question apparently wide of the subject.

Q. "Does an ox tail grow up, down, or sideways?"

A. "Downwards."

Q. "Do its horns grow up, down, or sideways?"

A. "Up."

Q. "If an ox gores another, does he not lower his head and gore upwards?"

A. "Yes."

Q. "Could he gore downwards?"

A. "No."

The wily interrogator then forced the unwilling witness to examine the wound which he asserted to have been made by the horn of another ox, and to admit that the slain beast had been stabbed and not gored.

Argument is a Kaffir's native element, and he likes nothing better than a complicated debate where there is plenty of hair-splitting on both sides. The above instance shows that a Kaffir can appreciate a dilemma as well as the most accomplished logicians, and he is master of that great key of controversy, namely, throwing the burden of proof on the opponent.

In all his controversy he is scrupulously polite, never interrupting an opponent, and patiently awaiting his turn to speak. And when the case has been fully argued, and a conclusion arrived at, he always bows to the decision of the presiding chief, and acquiesces in the judgment, even when a penalty is inflicted upon himself.

Trained in such a school, the old and influential chief, who has owed his position as much to his intellect as to his military repute, becomes a most formidable antagonist in argument, especially when the question regards the possession of land and the boundaries to be observed. He fully recognises the celebrated axiom that language was given for the purpose of concealing the thoughts, and has recourse to every evasive subterfuge and sophism that his subtle brain can invent. He will mix truth and falsehood with such ingenuity that it is hardly possible to separate them. He will quietly "beg the question," and then proceed as composedly as if his argument were a perfectly fair one.

He will attack or defend, as best suits his own case, and often, when he seems to be yielding point after point, he makes a sudden onslaught, becomes in his turn the assailant, and marches to victory over the ruins of his opponent's arguments. As a rule, the Kaffir is not of a revengeful character, nor is he troubled with that exceeding tetchiness which characterises some races of mankind. Not that he is without a sense of dignity. On the contrary, a Kaffir can be among the most dignified of mankind when he wishes it, and when there is some object in being so.

But he is so sure of himself that, like a true gentleman, he never troubles himself about asserting his dignity. He is so sure that no real breach of respect can be wilfully committed, that a Kaffir will seldom hesitate to play a practical joke upon another; a proceeding which would be the cause of instant bloodshed among the Malays: and, provided that the joke be a clever one, no one seems to enjoy it more than the victim.

A Kaffir is essentially hospitable, and on a journey one may go to the kraal of a stranger with the certainty of being fed and lodged. These people, too, are singularly domestic, and, semi-nomad as they are, cling with great affection to their simple huts—little dome-shaped constructions as much like a bee-hive as anything else.

One might speak of their manners and customs, their love of and pride in their cattle, their superstitions, &c., did space permit; but enough has been said to clearly indicate their general characteristics.

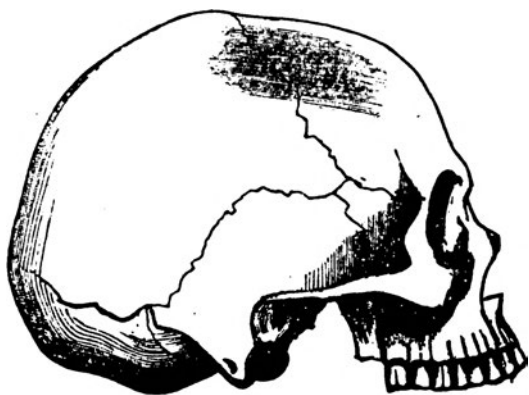


Fig. 2.—Skull of Zulu-Kaffir (side view).

How nearly their phrenological developments agree with the above description will be seen from the size of the organs

in the skull before mentioned, as given below. It should be premised that the circumference of the skull is twenty-one inches, that of the average European head being twenty-two, of course with the hair and scalp on. The measurement from the auditory meatus on one side to that on the other, over Firmness, is 13 inches, which is quite equal to the average of European heads.

THE PHRENOLOGICAL DEVELOPMENT OF A ZULU-KAFFIR.

Name of Organ	Degree.	Name of Organ.	Degree.
Amativeness	6	Constructiveness	4½
Conjugality	5	Ideality	4
Philoprogenitiveness	6	Sublimity	3½
Friendship*	6	Imitation... ..	4
Inhabitiveness... ..	5	Mirthfulness	4½
Continuity	4½	Individuality	6
Vitateness	5½	Form	6
Combateness	6	Size	6
Destructiveness	4½	Weight	6
Alimentiveness	4½	Colour	5
Acquisitiveness	4	Order	4½
Secretiveness	4½	Calculation	4
Cautiousness	5	Locality	6
Approbativeness	5½	Eventuality	5½
Self-Esteem	5	Time	4
Firmness	6	Tune	5
Conscientiousness	4	Language	5
Hope	4	Causality... ..	5
Spirituality	3½	Comparison	6
Veneration	4	Human Nature	4
Benevolence	5	Agreeableness... ..	3

This skull affords a good type of a semi-nomad pastoral people. Philoprogenitiveness, together with the other social organs gives them a great liking for animals. They are much attached to place and to home. They have moderate Constructiveness, but not enough to lead them to devote themselves very assiduously to the mechanical arts. Nor are they much stimulated to the acquisition of property for its own sake. The master races of the world, that is, those that have risen to a high state of civilisation, and acquired wealth and dominion, have ever been characterised by large Acquisitiveness



Fig. 3.—Skull of Zulu-Kaffir (front view).

* The part of the organ giving gregariousness is particularly large.

and Constructiveness, together with a good development of Ideality. The moral brain, though lacking, will compare favourably with many European heads, although not with the average European head. The intellect is a superior one, as compared with the intellect of most savage or barbarous races. The reasoning faculties are uncommonly well represented. The weakness of the Kaffir would be in order, system, arrangement, calculation, &c., and in the qualities that stimulate the desire to improve.

The skull thus described is probably a fairly representative one of the Kaffir race. It might be easily possible to find both better and worse specimens. It represents a distinctly dolichocephalic type, but one advancing towards the brachycephalic. Such a type is almost sure to give way and succumb before the advances of a more distinctly brachycephalic race like the English or Dutch; although they will hold their own longer than the negroes of the west. Perhaps, in the course of time, and in view of the constant struggle to maintain their own, they may become sufficiently brachycephalic to enable them to withstand the advances of the at present dominant race. That there are Kaffirs possessing a distinctly brachycephalic organisation is exemplified in the case of Moirosi, the chief who recently gave the Cape authorities so much trouble. Mr. Fowler has written out his leading traits from a photograph, of which the following is a condensation :

His head indicates great self-protection, energy, force, craft, cunning, tact, forethought, and disposition to look out for 'number one.' He has great perceptive power and practical ability, and an unusual amount of Order for a Kaffir; which would give him more than ordinary planning talent, and ability to understand military tactics and to make the most of his forces and the natural strength of his position. His intellect is not of a high order, but he possesses much shrewdness, sagacity, quick perception and ready wit. Ingenuity is a marked feature, joined to a strong desire to get and keep. He can be very plausible, and is an adept at diplomacy. With the power of making himself very agreeable if he likes, he combines the possibility of great cruelty. He is a master of language of the kind that is used to conceal thought, and knows how to make use of his powers to gain an end. His head is rather low in comparison with its breadth, and though he may have been under some moral restraint, he would generally forego such restraint when an end was to be attained.

Distinctly in contrast with the phrenology of Moirosi is that of the chief Kreli (Fig. 1). Of him Mr. Fowler says :

His head is one of the most remarkable I have seen in a savage. With the advantages of civilisation and culture he would rank with first-class men for general intelligence, originality of thought, and ability to take in a situation as a whole. He is particularly qualified to look far ahead and plan accordingly. His perceptive power is not equal to his capacity to plan, arrange beforehand, and to foresee the danger and avoid it. He has more moral than physical courage; he knows that bullets, shot from a gun, kill, and that when one is killed there is an end of him; so he keeps as far away from the bullets as possible. He is not wanting in force, but has sense enough not to be reckless in the use of it. He has superior qualities for a leader; has Firmness like a mountain of iron, and in a fight would be difficult to conquer. His moral brain is favourably developed, and with culture it would be a marked feature, giving integrity and disposition to do as he agrees, and deal on the square. In every-day life he is not naturally cruel, and if so at all it is to carry out his purposes and gain his ends. Such a man would bear a great deal before he turned on any one, but having turned he would be terrible. He would take a decided interest in the discussion of morals and religion, and could be rather easily influenced by their principles and doctrines. But he would be a shrewd critic, and in dealing with Christians would be likely to set practice against precept. He could be easily influenced by mild measure, while no amount of force would turn him from his purpose.

FOOD AND MIND.

It may seem at first sight as if there is little relation between a sack of flour and the soliloquies of Hamlet, or between Scotch oatmeal and "The Lay of the last Minstrel." But on closer consideration the relation is not so bad to make out. Every action of the mind is accompanied by a corresponding change in the brain. As the engine, plunging and throbbing at its work, shakes, and even rifts, the house in which it labours, so the mind, throbbing at its work, wastes and rifts the brain matter which is its basis. The statesman, rising in his place, glances at his notes. The information they contain, entering through the gates of sense, passes up to the brain and there stimulates thought. Impelled by the thought stimulated, he commences an elaborate argument, or rises into a passionate appeal, and sits down amidst the applause of his party. But in every mental operation some part of his brain substance has perished. The receipt of the information

through the tract of the nerve, the impulse to speak, the guiding train of thought, the pleading or the pathos, were all accompanied by the death of atoms. So with the poet. The fine frenzy which writhes and travails before it is cast into the mould of words, and incarnated in immortal music, plays havoc with the poet's brain. Conceptions start and grow; molecules fall and perish. Literature is permanently enriched; living particles have rendered up their life. The picture, growing under the hand of the painter, represents a ruin going on within himself. The commonest actions of life involve change and readjustment in cerebral matter. The adding of an account, the planning of a garment, the singing of a lullaby, all mean waste and decay.

Then how is this waste repaired? Primarily, of course, by food. The elements which go to make up cerebral tissue are first taken into the stomach. In the processes of digestion they are elaborated and vivified, and carried along in the blood, are built into the substance of the brain. New atoms become the ministers or menials of new thoughts. The substance, whisked yesterday from between the upper and the nether millstone, is to-day transmuted into the physical basis of kingcraft or philanthropy, emotion or worship, thus showing the immediate, if marvellous, connection between food and mind.

But more than this, the brain of the adult man is largely what it has been made by diet. Making every allowance for pre-natal conditions, hereditary transmission, the modifications of climate and residence, and for education, the brain is undoubtedly largely modified in texture and ability by the materials of its growth. Swillings may make good bacon, but it by no means follows that they will make good brain. The pampered appetite of childhood can be seen, not only in nervous affections and effeminacy of constitution, but in untempered brain substance and effeminacy of thought; while the coarse diet of the Arab, craftily hunted and irregularly obtained, assists his circumstances to ripen him into brutality and crime. It would be disappointing, if not unreasonable, to expect from the poor waif, fed at first on alcoholised milk, and afterwards on the scraps and sweepings of an early mendicancy, that refinement of mind which would fit him for an honourable position in society. The pinched mind would be too surely reflected in the pinched face, and the after life tell of the privation of his youth. We all admit that the body broken at the first, ill-nurtured and undermined, will carry the marks with it, in some form of enfeeblement, to the grave. And if the body surely the brain also. Neither the

child of want, nor the child of an unwise indulgence, can hope to escape scatheless from its unhappy circumstances.

But the relation of food to mind can also be seen in the reflex action of temperament on mind. If mind determines temperament in the first instance, temperament reacts on mind. The rounded face, the limbs plump but tapering, the full chest and copious abdomen, tell of a type of mind quick, facile, versatile, ardent even to impulsiveness, swift in its sweep of vision, but not penetrative and deep, tropical in its change of mood, and in all its aspects brilliant rather than solid. On the other hand, the gaunter form, with its prominent features, its strong, hard muscles broken by definite articulation, and general angular appearance, speaks of a class of mind characterised by force, positiveness, and tenacity. In the latter you have less brilliancy, but more depth; less ardour, but more constancy. Its long and bony hand, well knit and stable, with its powerful grasp, seems built to fall upon the helm or sword. You know that behind its bony and muscular battlements there lies a mentality in every way corresponding to its framework. And you know also that that framework can be modified, that the temperamental balance can be readjusted, and that food can be a potent factor in the change. It is not enough in developing this temperament in your somewhat obese subject that you remove him to a hilly region, and set him to breathe in a dryer atmosphere. You must engage his muscles in laborious occupations or pastimes; you must throw him into the current of active life, and especially into that part of it where he will have to breast its wave; you must yoke him with responsibility and expose him to conflict. But if you would do your work thoroughly, and not as Penelope, you must see to his diet. That, in connection with the other arrangements, will slowly but surely work the readjustment you desiderate, and working it will work also a subtle change in his mentality. Here, then, is another direct relation between food and mind.

But there is even a more abrupt and startling illustration. The brain can be momentarily affected by food. An unsuitable article of food will enter the system, strike at its organs, impair the secretion, and cloud every mental faculty. Every imperial power of the mind can be suspended by such means. Ambition or worship, avarice or philanthropy, can equally be set at rest. Or an intoxicating liquid can be taken into the mouth to steal away the brains. Then the man passes into a brute. The asphyxiated moral sense leaves him to the spur of passion. Every fine sentiment of the mind is expelled, and he becomes either a maudlin fool or an enraged madman.

The extent to which this deprivation of moral power is carried in modern society is amazing. The blood vessels, instead of being the channels of a pure commerce, are the instruments of a nefarious narcotism, and the loftiest functions of the human mind go down in an habitual overthrow. It is deplorable that the constitutional liberty of the subject should be sacrificed to the necessities of the state; but it is infinitely more deplorable that the constitutional freedom of the will should be sacrificed, not to any necessity of the nature, but to an abject animalism. In such cases it is too frequently not only temporarily arrested but permanently impaired. But in others, in whom this excess does not occur, the more limited effects of an ill-chosen diet are manifest. It would be interesting to trace, if it were possible, the connexion between the morbid in theology, poetry, and philosophy, and the physical states of the authors at the time of their inception. I am afraid that it would be too frequently found that the dolorous view of life, and the discoloured conception of God, were very intimately connected with the secretions of the writers. Heaven has suffered much at the hands of biliousness. The light of the intellect is mostly monochromatic, and communicates its own hue to all that is seen in it; and when that light is jaundiced by an outraged stomach, it is little wonder that every object appears yellow and sickly. Pure food, and a good digestion, are essential to healthy vision, pure emotion, and high hope. The platter must be clean that the food may be sweet.

And yet how we feed! The cook is the minister of the palate. We eat as if there was not the slightest connexion between body and thought. The philosophy of the table is ignored. We take no account of those silent suggestions made by conspicuous national foods and their allied mental characteristics. We see no connexion between the rice of the Hindoo and his docile disposition, between the oatmeal of the Scotchman and his attachment to logic, and between the potato of the Irishman and his excitability of temperament. Not that diet determines these characteristics, but it is a more or less potent *factor* in their determination. And illustrations that lie nearer home, the evanescent illness of the gorged child, and the indescribable sensations that sometimes follow upon a set dinner, are all lost upon us. We eat what we like. We drink because we crave. Taste is a deity in our modern pantheon. The physiological necessities of the body are shunted to make way for more or less depraved appetites. A scheme of diet is the dream of the hygienist, and in hundreds of otherwise cultivated homes there is an utter ignorance

of those nutritive elements necessary to build up flesh and force, and to recoup the marvellously compounded brain. The child is allowed to have what it likes. Its whimper is the ending of all wisdom. The cry of its present appetite drowns that far-off cry which will inevitably be heard amongst its emasculated members. The disliked portion is rejected and the innutritious dainty put in its place. And this is called feeding it. The desire is satisfied, but the stomach groans under its burden; the muscle derives no wholesome sustenance, and the nerve, pressed by its impoverishment, utters its neuralgic wail. Man-building, even on the purely physical side, is not the green and easy task that some esteem it; and those who take upon themselves the responsibilities of parentage, should know that they need to acquaint themselves with the laws of health before they can be masters in this higher masonry.

But there is another cause at the bottom of some of this mismanagement,—a false economy in the interest of feathers and fashion. The income is small and the love of approbation large. The body is stinted that it may be well dressed. The diet is lowered to tea and bread, and the vanity raised to silks and laces. And so the temple of the human mind, the holiest in which the shekinah of intelligence shines, is shaken to the instability of a barn, and desecrated by an empty pride. The economy which is compelled of poverty, of grinding poverty, although it has its ameliorations, and in the compensations of nature often eventuates in a well-knit frame, is bad to bear; but that economy, the practical starvation of the body which is enforced of vanity, is contemptible only when it is not criminal.

But there are some rays of hope in the sky, forerunners of an approaching day. The question of food is undoubtedly pressing to the front. If not within the range of practical politics as far as the kitchen is concerned, it is being debated in the parlour. Presently it will extend its influence, and take up its place in that procession of instrumentalities which are so rapidly advancing the race. Then man, distinguished by his capacity to look before and after, will advance to his future armed out of his past, and obedient to all the necessities of his present.

H. VIAN WILLIAMS.

HE who diffuses the most happiness and mitigates the most distress within his own circle is undoubtedly the best friend to his country and the world, since nothing more is necessary than for all men to imitate his conduct; to make the greatest part of the misery of the world cease in a moment.—*Robert Hall.*

THE FACE AS INDICATIVE OF CHARACTER.

THE MOUTH AND LIPS.

Whatever is in the mind, says Lavater, is communicated to the mouth, and if we consider its mobility, with the ever-changing state of the mind we shall readily grant that there is much truth in the assertion. Our mental condition sooner communicates itself to the mouth and lips than to any other organ. The character of the mouth depends chiefly on the lips, although not a little on the teeth; of which Lavater remarks that small, short teeth are observable in adults of extraordinary strength; but in such cases they are seldom of a pure white. Long teeth, he opines, are certain signs of weakness and pusillanimity.

"As are the lips so is the character," is the dictum of the Father of Phrysiognomy. Firm lips, firm character; weak lips, and quick in motion, weak and wavering character. Well-defined, large, and proportionate lips, the middle line of which is equally serpentine, though they may denote an inclination to pleasure, are never seen in a bad, mean, common, false, crouching, vicious countenance. A lipless mouth, resembling a single line, denotes coldness, industry, a lover of order, precision, housewifery; and, if drawn upwards at the two ends, affectation, pretension, vanity, and malice. Very fleshy lips must ever have to contend with sensuality and indolence; the cut-through, sharp-drawn lip, with anxiety and avarice.

Calm lips, well closed, but without constraint, and well delineated, betoken consideration, discretion, and firmness. A mild over-hanging upper lip generally signifies goodness. There are innumerable good persons also with projecting under lips, but the goodness of the latter is rather cold fidelity, and well-meaning, than warm, active friendship. A closed mouth, not sharpened nor affected, always indicates courage and fortitude; the open mouth betokens complaint, closeness, endurance.

These are some of Lavater's dicta with reference to the mouth. He is also of opinion that all disproportion between the upper and under lip is a sign of folly or wickedness, and it is very certain that the wisest and best men have well-proportioned upper and nether lips. We shall see how true these discriminations are as we proceed.



Fig. 40.

To begin with generals before going to particulars, it may be said that a large mouth denotes more character than a small one. Indeed there are few features of the face that indicate more character than a good large mouth. Of course it must not be immediately concluded from this that a big mouth is necessarily a good mouth. There are mouths and mouths. The Germans have two words for the mouth : *Mund* and *Maul*. The former indicates an organ around which play good nature, mirth, humour, modesty, dignity, patience, and all the affections ; the latter indicates an opening in the face for the reception of unlimited comestibles ; in other words the former is a distinctly human organ, while the latter is possessed in common with the lower animals.

It should be observed that the mouth is the seat of no mental faculty : it is simply a kind of registering screen whereon are written, in infallible characters, the existing state of the mind, more particularly in regard to the feelings and propensities. The more the proportions of the mouth agree with the other features of the face the better it is. Every countenance is stupid, the mouth of which, seen in profile, is so broad that the distance of the eye, measuring from the upper eyelid to the extreme corner of the mouth, is only twice that breadth. There is stupidity, too, in the countenance, the under part of which, from the nose downwards, is divided by the middle line of the mouth into two equal parts (Fig. 40). The greater the angle is which the profile of the eye forms with the mouth, seen in profile, the more dull and feeble is the understanding (Fig. 41). There is dulness and stupidity, too, in the face in which the distance from the corner of the eye to the middle of the side of the nostril is shorter than from thence to the corner of the mouth.



Fig. 41.

Mr. Alexander Walker's system of physiognomy, based on physiology, contains some general observations which will be found to agree very closely with the more minute details which we shall have to give hereafter. He starts from the assumption that the lips, together with the tongue, are the proper organs of taste, and that the former, therefore, may be considered as indicating its extent, accuracy, and delicacy, and consequently the passions which are so intimately connected with it.

Large lips indicate greater capacity in regard to taste and its associated desires. Hence in the negro, who excels in

that sense, the lips are greatly developed. Narrower lips always indicate less capacity of taste and of the associated propensities. The vertical extent of the lips denotes the intensity of these functions; their width, the permanence. Lips with coarse, irregular, and ill-defined outline always indicate a corresponding grossness and rudeness of these functions; while lips with a fine, regular, well-defined outline invariably betoken a corresponding delicacy of these functions.

From the fact that the lower jaw is moveable and therefore under the control of the will, Mr. Walker infers that the tendency of its parts to move indicate desire; hence that the under lip indicates passion. Everyone has noticed how the pouting child protrudes the lower lip. The upper lip, on the contrary, is indicative of more passive feelings. The upper lip undeveloped betokens the absence of passive gratification. When the under lip is placed over the developed portion of the upper, it substitutes active determination for passive impression.

Consequently, reasoning from the above, it will be evident that when both lips are considerably developed, a character both actively and passively voluptuous exists. On the contrary, it is evident that when both lips are but little developed, a character proportionally opposed to the preceding exists. The sensual character is most strongly expressed where, not merely the coloured portion, but the whole of the lips, to their attachment beyond the gums, protrude or hang forward. Where, on the contrary, the lips are gently held in, or drawn backwards, or towards the angles, whatever may be their expression of passion, it is under control, and a character of coolness and precision is proportionally given. This is particularly marked by a depression extending downwards and outwards from each angle of the mouth, till it is lost on each side of the chin, or rather diffused under the coloured part of the lip, and by a corresponding elevation over the depression at the angle.

Dr. Redfield gives it as his opinion that the love of animal food is indicated by the antero-posterior diameter of the grinder teeth in the upper jaw, while the love of vegetable food is indicated by the antero-posterior diameter of the grinder teeth in the lower jaw. In the carnivorous animals the sign of the love of animal substances is largest, as seen in the projection of the upper jaw beyond the lower; in the vegetable eaters the reverse is true, as seen in the sheep, goat, cow, etc. The difference would be still greater if, in the flesh-eating animals, one of the large molars in the upper jaw

were not set transversely, thus preventing the upper jaw from being projected far beyond the lower one. In the carnivorous birds, however, the upper mandible is very much longer than the lower, there not being the same necessity as in the carnivorous beasts for the apposition of the two jaws. There may be some truth in this inference, but how much we should not like to say, dietetic habits depending so much on inherited tastes and mental constitution.

PREFACE TO THE ANALYSIS OF PERCEPTION.

The whole physical process and meaning of the mind is essentially a question of perception; and all the idealisms, scepticisms, and metaphysical disputations, rest upon this: that we cannot know more than we perceive, and all we can perceive is phenomena, and the only phenomena perceived are the perceptions themselves; so that we cannot know things in themselves, nor, indeed, that there are any things to know unless with Berkeley you declare the perceptions to be the things themselves, and somehow to be distinct from the act of perception and percipient, and Herbert Spencer's "unknowable, unconditioned, Absolute behind appearances" is hardly different from Berkeley's source of all behind all, in a living personal God.

The late Mr. Carlyle professed to follow Hegel in the idea that all is thought without a personal God, or even a percipient;* and when we come to physiology and the cerebral organology of Gall, with the channels of sense, we do not alter the question that all mind is perception, or the subjective in relation to the objective; hence the analysis of perception must be first taken in hand as the primary need in the philosophy of man and mind, based upon a right method and the special class of facts essential to the particular enquiry. But then the illusions stand in the way of their own detection, and hence the eternal confusion and disputations about first principles; and yet, says Bacon, "He who hath not first, and before all, intimately explored the movements of the human mind, and therein most assuredly distinguished the course of knowledge and the seats of error, shall find all things masked, and, as it were, enchanted, and till he undo the charm, shall be

* Some one wrote to him the plain question as to whether he was not a Pantheist, and he replied: "No; nor Pottheist either."

unable to interpret"—what I will exemplify by two instances: the freedom of the will, and the still prevailing idea that the visual sense of distance is to be accounted for from an education in some way unexplained from the sense of touch and motion. But Bacon himself was contented with general assertions, and avoids particulars and the attempt at analysing what we should have found "first and before all" in his "*Novum Organum*"; but I think that he feared to give encouragement to the sceptic and metaphysician in proclaiming the illusory character of first impressions. But matters would take their natural course; and Hobbes and Locke strove to undermine the system of Descartes; Berkeley to undermine that of Hobbes and Locke; Hume to undermine that of Berkeley; Kant to undermine that of Hume; and Gall and Comte to undermine that of Kant. But to follow up Bacon, he proceeds: "For, however men may be satisfied with themselves, and rush into a blind admiration and almost adoration of the human mind, one thing is most certain, namely, that as an uneven mirror changes the rays proceeding from objects according to its own figure and position, so the mind, when affected by things through the senses, does not act in a most trustworthy manner, but inserts and mixes her own nature into that of things, whilst clearing and recollecting her notions," and more to the same effect with the celebrated doctrine of the idols, or more general sources of error—errors of the "tribe," or common to the race; errors of the den or special to individuals; of the market, or consequent upon the understanding of words in the exchange of thought; and lastly the idols of the theatre, or error from received opinions and false theories, and superstitious persuasions. Then men have striven to account for the laws and processes of nature by the supposition of a mind like their own at work constantly and universally in what are termed "final causes," or purpose and design, but what Bacon very properly ignores as more allied to man's own special nature than to the system of the universe, and that in which "they have wonderfully corrupted philosophy." And Charles Bray's phrenology has not saved him from Idealism, Pantheism, and the belief in a special providence. It is clear, then, that there is something required yet in the analysis of perception "first and before all."

It is difficult for men to understand new views even in a good illustrated work. A sketch of what is already accepted is different; for instance, phrenologists, about the functions of the cerebellum or the nerves of sense *not* proceeding to the organs of perception or of sense, all out at sea, still cling to the old planks, nor seize the force of objection. *Non e vero?*

Lock well says "The understanding like the eye, whilst it makes us see and perceive all other things, takes no notice of itself; it requires art and pains to set it at a distance, and make it its own object;" and, says Bacon, "As far as relates to the first notions of the understanding, not any of the materials which the understanding, when left to itself, has collected, are unsuspected by us, nor will we confirm them unless they themselves be put upon their trial, and be judged accordingly." Professor Barrett, of Dublin, sends me the account of a lady deaf, dumb, blind, and paralysed, who sees perfectly in the dark; and here is a little French boy who astonishes the learned by his astounding rapid mental calculation. Like the case of George Bidder, without any sense of effort or process, but simply "So or so is the result; I see it is." But such lights have been ignored or set aside, as with stupid mechanical theories they would even deny instinct! Nature is all magical, not mechanical, even the mechanical itself.

HENRY G. ATKINSON.

Poetry.

REVISITING.

I greet the young leaves' tender green,
 I hear the prattle of the brook,
 And catch, through many a sheltered nook,
 Faint glimpses of its silver sheen;

I wander down the weed-grown lane,
 O'ershadowed by the branching beech,
 And call to mind how dear was each
 Fair prospect that I meet again

In days long past, and feel the thrill
 Of ne'er-forgotten joys and pain;
 I hear the woodland songster's strain
 Re-echoed from the distant hill,

And think upon that voice whose tone
 Shall break upon mine ear no more,
 And vainly sigh, as oft before,
 That I must win my way alone.

I tread the old familiar walks,
 And marvel that so little change
 Has fallen on them, while I am strange
 To all I meet, and no one talks

Of times I knew, of friends I loved
 In that dim past, so long gone by
 That even the grave-stones where they lie—
 Those long-lost friends—decay hath moved
 Till they hang mould'ring o'er the ground
 As if they sought the silent sleep
 Of those whose memories they keep—
 Else all forgotten in the mound,
 Where many years their bones have lain
 Crumbling to dust, an emblem true
 Of mortal fame; the world once knew
 And loved their names, but now no pain
 Lives for their loss in any—save,
 Perchance, some friend of early days,
 Who moves about his childhood's ways
 And slowly totters near the grave.

F. A TOLE.

NATURE'S MUSIC.

Rippling of waters,
 Singing of birds,
 Whispering of soft winds—
 "Songs without words;"
 Nature's own voices
 Uttered for all,—
 These are the melodies
 Most musical !
 Man hath no music,
 But what, from her
 Cunningly he imitates,
 Bold copier !
 When the heart's weary
 And needeth rest,
 Nature's own voices
 Soothe it the best.

J. A. S.

TEMPERAMENT.—Temperament has much to do with health preservation. The sound and good-tempered resist disease and pass unscathed through many dangers, as the stiff craft, bending steadily to the breeze and well under the control of her helm, may thread a narrow passage among the rocks, or as the horse that bears equably on the rein grasped by a firm hand can be driven safely through a crowded thoroughfare. The variable, uncertain, irritable, and, above all, the sullen of temper are a misery to themselves and those around them; the troubles of life fret their strength, and the perils that lurk in their path can seldom be certainly and pleasantly avoided.

MADGE.

A TEMPERANCE TALE IN THREE CHAPTERS.

CHAPTER III.—“The Mill.”

The town of Coggleton was just emerging out of the Middle Ages. Although one of the great arterial lines of railway had run within some half-dozen miles of the place for nearly forty years, it was barely ten since it had consented to be put upon a branch line. The wise men of Coggleton had opined that they could not be far enough away from the new-fangled thing, the screech of which, they thought, was enough to craze the cattle in the fields, and turn all the beer in the vats. And when old Cudwit, the teetotaler—then about the only one in all Coggleton, at least with the courage of his opinion—ventured to say that it were better that all the beer *should* be turned in the vats, than that the wits of half the men should be turned by the beer, he was looked upon as a man fit only for the local Hanwell.

But light gradually penetrated even Coggleton opacity. New men arose, and with them new notions. Among other innovations, it was proposed to pull down the old barn that had for generations served as town hall and build a new one, and after much squabbling, many prophecies of evil, and a deal of heart-burning, the old hall went the way of all flesh, and the new one arose on a more commodious site. When the thing was done, and people saw that the world had not come to an end, they became gradually reconciled to the change. Moreover, they began to be proud of the monument, seeing that it was a decided embellishment to the town, and with its ornate front, growing more and more beautiful every day with the work of the sculptor and statuary, promised to become a joy for ever. Kings, counsellors, and warriors, deftly wrought in stone, stood there in airy niches; above them were bishops, leaders, holy men; then, higher still, beneath the point of the gable, a winged seraph—a man *plus* something. All the niches were not yet filled in, because all the great men had not been made yet—that is, in stone.

The lower storey of the façade consisted of an open arcade, the groined roof of which was supported by massive columns with pictured capitals, some symbolic, others descriptive of the chief arts and handicrafts of the town: such, at least, was the design, though not as yet fully carried out, several workmen being still engaged thereon. All the work on the

new edifice had been done but this, for which sculptors had been brought, it was said, all the way from London.

It was pleasant to see the sculptors at work there on their scaffolding, quietly chipping away at the stone, until it blossomed like a garden, or became storied like the page of a book. It was not often that they were without lookers-on, the younger fry especially taking delight in watching the hammer strokes, and seeing the stone smoke in response to them. One little fellow was an especially frequent visitor. He was a ragged little urchin, with tufts of hair growing through the crown of his cap, and uncleanly toes peeping from beneath his upper-leathers.

Once one of the sculptors was working at a portion of one of the walls, and gradually under his chisel had grown a tree and a man beneath it. The youth watched the operation very intently until the graven man stood forth quite distinctly beneath his tree. It was a noble form, with long flowing hair.

"Who's that?" asked the urchin, curiosity getting the better of awe.

The artist looked down at him, and said quietly :

"That's Adam."

"Who's Adam?"

"The only man that was never a boy."

"It looks like him!"—pointing to another workman, who was employed on a pillar a little aside; "Was he ne'er a boy?"

The man who had taken a part in this dialogue, broke into a hearty laugh, which rather disconcerted the little urchin, who answered, as though his character for intelligence were at stake :—

"Well, he's got long hair like him!" which was undoubtedly the case.

This reply only made the sculptor laugh the more.

"What is the fun?" asked he of the long hair, stepping to his fellow-workman's side.

"What do you think this youngster wants to know?" the latter replied.

"I can't guess. What?"

"If you are Adam, the man who was never a boy."

"Well, I was not a boy long, certainly, but I was for a short time; and one, moreover, very much like you if I mistake not," added the young man, putting his hand kindly on the lad's head. "What is your name, my man?"

"Johnny."

"Johnny what?"

"Johnny Madge."

"Madge!" exclaimed the young man. "What is your father? What does he do for a living?"

"He mends boots and shoes, and does odd jobs," replied the youth.

Then, Johnny, your father must be the very man I have been trying to find ever so long. Where do you live?"

"Down in th' Hollow."

"That's a long way from where you used to live before, isn't it?"

"I don't know; I think we've always lived there."

"Do you think I should be able to find your father at home if I went to see him this evening?"

"I don't know. He's generally out o' nights."

"Where does he go?"

"To the beerhouse *mostlings*."

"And your mother—should I be likely to find her at home?"

"Yes, 'cept she's gone to chapel."

"Well, I want very much to see your father or mother, or both; do you think you could come and meet me here at eight o'clock, and show me the way to where you live?"

The youth said he could, and went away skipping none the less lightly for the silver with which his palm had been crossed, or for the gaping condition of his shoe-leather. It wanted something like three hours and a half to the time when he was to meet the long-haired stranger; but the very abundance of time on his hands almost made him miss his appointment; for having at first raced himself out of breath, he thereupon sat down by the churchyard railings to examine the coin in his hand. This done he made an exact and deliberate examination of all the shops, especially those the contents of which were of a comestible character, in the Market Street, making a careful survey first of one side and then the other. His choice eventually fell upon a bun, the top whereof was temptingly crusted with sugar, which necessitated his return to the other end of the street to that he had reached.

It did not take him long to dispose of his bun when purchased; but then he had to retire to a quiet nook in order to count over his change, and see that his elevenpence was all right. Having satisfied himself on that point he selected the dullest-looking coin of the lot to spend on his way home, deeming himself deserving of that extra gratification for his good luck.

The selected penny was duly expended in the purchase of a dozen half-rotten apples. He might have got quite half the number of sound ones for the money; but if he was not an

economist in one sense he was in another: he knew that the very fact of his having to bite away the rotten part before he could eat the good would materially protract the enjoyment. A good many older-grown people economise in much the same way: they will keep cast-off garments until they are quite moth-eaten, and then give them away for charity.

This peripatetic meal had taken so long that when friend Johnny came to inquire the time he found it was nearly half-past seven, and he was still some distance from home. At first he thought he had better go straight back to the rendezvous, but second thoughts decided him to go home first and tell his mother that a gentleman was coming.

Arrived at the place called "home," which was situate down a court, one side of which was formed by a dead wall belonging to a brewery, and the end by a cesspool, Johnny addressed himself to three or four ragged little mortals like himself, who seemed to have tried to make up for the sparseness of their clothing by a subsidiary coating of mud.

"Is mother in?" asked Johnny almost breathless.

No, she had gone out, they said; there was nobody in but Lizzy.

"Then," said Jack, "tell mother I'm going to fetch a *genkleman*," and away he bounded.

He had half a mind, when he had gone some distance, to turn back and spare his brothers and sisters a penny out of his wealth; but second thoughts, which are said to be always the best, told him that they would probably spend it foolishly, and so he had better not. He preferred its judicious expenditure on a halfpennyworth of winkles at a kerb-stone restaurant, and sweets to the same amount by way of dessert.

It had just gone eight when the little *gourmet* arrived at the Town Hall, where he found the long-haired stranger waiting.

"So you have not forgotten your appointment," he said with a smile.

Johnny answered as well as the state of his gustatory organs would allow him, which was not very articulately.

"Is your father or mother at home? Shall we find them in?" asked the stranger.

"I don't know," answered Johnny. "Nobody was in but 'Liza when I was there."

"Who is 'Liza?"

"Sister 'Liza."

"Is 'Liza your eldest sister?" asked the stranger after a pause.

"Yes; but mother says she, perhaps, won't be with us long."

"Why?"

"'Cause she's got consumption. She hardly ever gets up now."

"How many brothers and sisters have you?"

"Seven, I think. There was more, but some's dead ; and Dick's gone away, and we don't know where he is. Dick was my biggest brother. He was bigger nor Jim."

"And where is Jim?"

"Jim's in jail for poaching. He was copt sniggling rabbits in squire Nettlecot's spinney."

These interesting family revelations were cut short by the arrival of the twain at the Hollow, and the delectable court adjoining the brewery.

It was now nearly dark, for autumn was well advanced, and the stranger found some difficulty in groping his way along the passage down which his young conductor had plunged, as it seemed, with the utmost recklessness. A few steps, however, brought him into the open court, where the guidance of a dim shimmer of light from a window was added to that of his companion's voice.

"This way!" cried young Madge, dashing up to a door and throwing it wide open. "Come in! Mother, here's a *genkleman* wants to see father!"

The "genkleman" appeared in the doorway as he was being announced. For a moment he hesitated, not knowing whether to advance or retreat. A voice bade him "Come in," and he entered a few steps, and the boy closed the door behind him.

The scene presented by the "home" before him was worthy of limning, if artist could be got to dwell upon it long enough to give it truthfully. A few penstrokes may avail somewhat to picture it to the reader.

Imagine an interior of some few yards square, the ceiling of it blackened with smoke ; the plastered walls broken here and there, displaying the bare bricks ; the stone floor dented and uneven ; the fireplace, wherein a few bits of coal were trying to burn, falling to pieces : altogether a kennel such as, you would suppose, no man would dare to avow he was owner of in a civilised land !

It was only by degress that the stranger noted these particulars, and the almost utter absence of anything that could be called furniture, his attention being at first rivetted on the family group, thrown as it was into bolder relief by the dismalness of the background. The most striking figure was a middle-aged woman—grey-haired, sallow, and hollow cheeked ; her mouth marked with vixenish lines, and her eyes with burin-marks of sorrow. Near her upon a low bed lay the pale, emaciated form of a young woman, her bright glassy

eyes telling but too plainly of the fast cbb of life. Four children—dirty, unkempt, wondering—made up the tale; Johnny, the biggest, if not the eldest of the four, taking everything in with his wide-awake, insouciant eyes. In strange contrast with these was the tall, well-knit form of the sculptor—a form that might have been cut out of the material he worked in, so noble-looking and symmetrical was it.

The young man stood for a moment, as though embarrassed, or like one who has to focus his eyes to a new light. Or was it that something in the throat would not let him speak, as something will at times? So backward, indeed, did his tongue prove, that the woman got the start of him. She observed him very narrowly; then with a start exclaimed:

“Clon! Mr. Clondalkin! Why—?”

She could not get out more. It were hard to tell whether surprise, pleasure, or shame had the ascendant in the poor woman's mind.

“Yes, I am Clon,” said the young man with a faint smile, holding out his hand.

“Can it be?” cried his foster-mother, rising and trembling. “To think—! to think—! How you have grown!”

Mother Madge vainly essayed to say more. The trial was too much for her; she bent her head down upon the edge of the table, and her frame shook with emotion.

Eliza also recognised him; for although grown so tall and broad-shouldered, it was still the Clon of years gone by—the bright sunny-eyed boy grown a kindly sunny-eyed man, the promise of his youth ripened into the full fruition of manhood. Albeit Providence had at first seemed disposed to make a tumbler and mountebank of him, she after a while came to the conclusion that there was something better worth in him, and after putting him through various experiences, at length tumbled him into a sculptor's workshop, where he stuck. His first friend the clown had proved a good master to him, except when “in his cups,” at which times he became gloomy, heavy-browed, and, in the last degree, quarrelsome. Clon obtained his last sight of him at the door of a jail, whither he had been sent for splitting a man's head with a pewter pot. For the sculptor's art Clon had shown uncommon talent: hence his visit to Coggleton.

It would be hard to say whether he recognised Eliza, his playmate of early days, so wasted was she with disease and famine. There appeared to be no substance in her hand, and her voice was like an echo from afar. She faltered, with a faint smile, that she had always thought she should see him again before she died; but Clon had to hold his ear quite close to her lips to catch her words.

Poor girl ! she was barely his age, and yet the world was sliding away from her like an insubstantial smoke. His presence seemed to revive her strength for a short time, and she asked her mother to raise her, so that she might sit upright for a few minutes. Mother Madge hastened to her side, her eyes red and tearful.

"Don't cry, mother," said Eliza, with a more audible voice. "Let bygones be bygones ; they can't be mended now."

The poor woman put her head on the pillow and sobbed.

Clondalkin walked to the window and looked up at the brewery chimney and the stars, for there was no blind, only a low curtain. The autumn wind was wailing without, and he tried to hear nothing save that ; but there was no shutting out the sound of the dying girl's voice trying to soothe her mother. It was like the crooning of a nurse over a fretful baby. Presently he went to the bedside, and putting his hand upon his foster-mother's shoulder, said that he did not come to cause trouble, but rather the opposite.

In a little while Mother Madge raised up her head and wiped her eyes, and said :—

"Forgive me, Mr. Clondalkin--"

"Call me Clon," said the young man gently.

"I will ; but you must forgive me for being so weak. The sight of you brings back everything. Oh ! if you knew how I have tried, and tried again, to do right ! And yet, in spite of all, everything has gone wrong with us !"

Mother Madge seemed to be about to burst into tears again, and probably would have done but Eliza was taken with a sudden gasping for breath, requiring her instant attention. When the dying girl had somewhat recovered, she begged that her father might be sent for, as she was afraid if he did not come soon she should not see him again in this world. Johnny was, therefore, immediately despatched to seek him. When he was gone Eliza said in a low, broken voice, with a significant look round the wretched, ill-furnished apartment :

"You know what it is. It's been no different since you went. We should have been happy but for that. When father has been steady for a bit things have looked brighter ; but it's never lasted long. How we've had to suffer because of his yielding to the drink no one knows ; I sometimes doubt whether anybody cares."

After pausing a moment or two for breath, she continued :

"It has sent four of us to the grave before their time, and before another day comes it will have done the same by me. I should have liked to live, but now I am content to go. I am only twenty—a year younger than you, Clon ; but in all

that time I have known nothing but misery. It's been there on getting up, it's been there on going to bed. If I had had but one full day's happiness, I could have died in peace."

Here the dying girl's utterance became so faint that it was inaudible. Then Mother Madge took up the strain with wet eyes.

"I, like him, was guilty for a time, as you know, but not for long. God forgive me for the ill I did!"

The poor woman here quite broke down, and could say no more.

"No; mother's not touched anything for years," said Eliza, almost inaudibly; "but brothers have taken to it, like their father. One died raving with drink; another it drove away we don't know where, and another it has sent to jail. It will bring misery to them, too (indicating her young brothers and sisters, who were crouching about the fireplace), unless a miracle happens. Oh, if I thought they had to go through what we others have gone through, I would like to see them die this night with me! I would not have them live to judge their father as I have had to judge! And yet," she said, after a pause, "God knows it is not all his fault. To one church to teach a man to go right, they open a hundred places to make him go wrong. If it is no one's concern that a man goes to the bad, why do they build churches?"

This was a question Clon could not have answered if he had had the opportunity; which he had not, for Johnny now returned, saying that he had been to the "Lord Raglan," and the "Half Moon," and that his father was at neither, but that a man at the latter had told him that half an hour before he had seen Madge, the worse for liquor, going in the direction of Cudwit's Mill.

At this announcement Mother Madge's arms were thrown up with an exclamation.

"That will be the death of him yet!" she cried. "Go and see if you can find him, Johnny," she added, "and bring him home quickly."

"I will go," said Clon; "I shall go quicker." He remembered Madge's liking of old for the mill and the stream whose waters turned it, the Swale, and knew the direction well. "I will soon be back, and bring him home if he is there," he said.

"You will find him not far from the mill-race," observed Eliza, with difficulty. "He always thought you were drowned there, and he haunts the place like a ghost. Clon," she added with an effort, putting her thin hand on his, "if anyone can save father you can; but I'm afraid it is too late. Try, and God bless you!"

Her lips moved as if she was adding something more ; then her eyes darkened, and she seemed half unconscious. There was no doubting the misery she had suffered : it was written on every lineament of her face. " If one could obliterate those marks of sorrow as easily as they are made ! " thought Clondalkin as he strode away in the direction of the mill.

The wind was rising, and as he hurried along the lane known as the Mill Lane, the *Æolian* music of the trees overhead deepened the melancholy tone of his mind. High, driving scud kept blotting out the moon, which was rounding towards the full, and shrouding everything in a gloom akin to that of his thoughts. " A fitting night for so sad a spirit to pass away," he murmured. Then he revolved Eliza's words in his mind : " If anyone can save father you can." Could he ? and those children from the misery and wretchedness the others had suffered ? Had he been led back to his old home so strangely for that purpose ?

So he cogitated, the wind moaning, and the clouds hurrying like perturbed storm-spirits overhead. Presently he came to the mill. How familiar it looked—even under the wierd light of the moon ! There was the picturesque old house with its manifold gables, its various elevations, its fantastic out-growth of chimneys, and its great elm that seemed to take the whole protectingly under its arm. Then there was the long, narrow foot-bridge, half in shadow, and half in the full glow of the moon. How well he remembered with what a tremor and trembling he used to pass the first half, because of the dark archway that yawned on one side of it, filled with the din of foaming waters, and of the groaning water-wheel, and on the other the swirling, rushing flood, just escaped from the toils ! Those few yards of plank had in youth been his *Scylla* and *Charybdis*. The great wheel was silent now, and the mill-race still. In the stream proper, however, it was different. There had been heavy rains during the last few days, and the water was rolling over the weir like a cascade, and the foaming billows were rushing beneath the bridge like sheep through a gate.

Clondalkin had noticed all this a hundred times before, and the whole boyish fantasy of the thing rushed into his mind at once, and but for the circumstance which was hurrying him he would have lingered to survey the scene once more. But now his entire thought was for the lost cobbler. He walked some distance beyond the mill, but seeing no sign of Madge, nor, indeed, of any human being, he retraced his steps to the mill.

The sky was now clearer, and the moon higher and brighter.

Everything had such a wierd look under the cold keen light that Clon could not help tarrying for a moment or two on the bridge to watch the scurrying water-sheep as they chased each other beneath him. There was something in the sound and motion to make one dream, and for just a moment he fell a dreaming. Leaning upon the slight rail for the protection of those using the bridge, the fresh breeze blowing through his hair and upon his brow, he imagined himself in the stream, carried away by the swollen flood. There was no pain, no regret in the thought : he seemed to be native to the element, and even enjoyed the rapid motion, and the flying stars and willows. As he swept in fancy along, however, the thought of Madge's distress occurred to him—so powerfully, indeed, that he seemed to see his form on the bank, and to hear his cry in the air :—

“ Clon ! Clon ! ”

There was something so real in the sound that it made him start. Was it real, or an illusion ? He looked around, but for a moment could see nought, only a bat flapping across the stream, his eyes being dazzled by the sheen of the water. Then beneath the shade of several overhanging willows by the weir he thought he saw something moving amidst a mass of tall docks. He fancied it might be a straying horse or cow, and was about to turn away when he again heard the dissyllable :—

“ Clon ! Clon ! ”

There could be no doubt this time. It was uttered by a human voice, and that voice was Madge's. No one could mistake that uncouth form and dishevelled head when illumined by the full light of the moon.

“ Clon ! Clon ! ” he again cried as he ran, reeling and swaying this way and that along the bank, like one in a trance—or drink.

The young man stood like one petrified. There was no time to rush across the bridge and bring him out of danger. There was no time for anything—hardly to shout, above the roar of the weir :—

“ Stay ! ”

Even before the word had well left his lips, the reeling man had stumbled, fallen, and, wildly clutching the bank, the air, anything, rolled headlong into the flood. One loud, piercing shriek woke the echoes of the old mill ere the waters clasped him in their chill embrace, and hurried him beneath the bridge and away.

Clon, swinging down from the bridge, made a mad clutch at the struggling man, but vainly, and nearly loosing himself

in the effort. A strong hand came timely to his aid, or it might have been all over with him.

It was Cudwit the Miller, whom Madge's wild cry had brought to the rescue. The whole household followed, men, women, and boys. Neighbours, too, were quickly on the spot, each and all giving their assistance in the search for the body, for it was scarcely possible to hope for the man's safety, especially after it was whispered about that it was Madge the cobbler, and more than likely that he was drunk when he fell in.

These fears were but too fully realised. About midnight the corpse was found, and, being not far from the mill, it was decided to convey it thither. Word was brought to that effect, and the miller's wife met the sad procession on the bridge and asked that as little noise as possible might be made, because the dead man's widow was there, doubly bereaved, and beside herself with distress and horror.

"Is, then, her daughter dead?" asked Clon.

"Yes," replied Mrs. Cudwit, "and according to what they say, she must have died almost at the very instant her father was drowned."

"Two in one night!" exclaimed the young man, solemnly.

"God grant he may be out of temptation now, and she out of pain!" said the woman piously.

"Too late, indeed!" murmured Clon, recalling Eliza's fears.

"Those were the girl's last words," said the miller's wife. "The person who came here with her mother says she suddenly half-raised herself in bed, and staring wildly as though she saw something, murmured: 'Father! father! too late! too late!' and then sank back, and hardly breathed again."

This personal contact with the great leveller was a new thing to Clondalkin. It seemed like a first voice to him out of the night of time; the first link between him and the unknown world. Withdrawing from the rest, to whom death was like the coming of a holiday, and violent death a high feast and red-letter-day, he sought the shade of the great elm, being fitter for tears than to repeat the tragic story of Madge's death to every fresh gossip that wanted to hear it first hand.

The tree, which the autumn winds had stript of a large portion of its leaves, and which, therefore, instead of a darkened chamber full of moanings, seemed like a staircase skywards with voices ascending and descending upon it, was in accord with his mood and accompanied his tears with sighs. If, as we have confessed, he wept, it must be remembered that he was still young, and that the world, though it had battered, had not hardened him. Albeit a giant in strength, he was as

tender in feeling as a woman, and through all the years of his absense he had remembered Madge's love for him, and looked forward to the day when he could in some way repay it, never even once weighing the harshness of one foster-parent against the affection of the other ; and, at last, when all the circumstances seemed to favour the wish of his heart, behold the object of it was violently snatched away in his very sight ! partly, too, as it seemed, because of an illusion grown out of his great love for him ; but in part also as a result of the bane of his life—drink ! “ Poor Madge ! ” he exclaimed, half unconsciously, “ though weak and not to be excused, thou art not wholly to blame ! ”

“ No, not wholly,” said Mr. Cudwit, approaching and putting his hand on Clon's shoulder. “ We are all more or less to blame. Since I have lived here, eleven persons have been drowned within gun-shot of the mill, and nine of the number were proved to have been in drink at the time. Someone was to blame for that. If no one got profit by the sale of the stuff few, if any, would lose their senses and their lives by drinking it. It is because men get rich by the manufacture and sale of it that we can't raise a barrier against its evil influence. If the Swale, and every stream in the country ran with it, and it could be had for the fetching, we should make it criminal to touch it, if we did not naturally eschew it as we now avoid noxious herbs. But this is no time for lecturing. I came to have a talk with you. They tell me that you are the Clon that was brought up by the Madges.”

“ So I am,” replied the young man sadly.

“ Can that be ! ” exclaimed the old man. “ Well do I remember when you went away—how poor Madge fancied you had been drowned here, and we had the river dragged to see. He seemed to haunt the spot ever after. And to think you should come back just in time to see the poor fellow drowned here himself ! ”

“ It is very sad,” replied Clon, “ and very strange—stranger perhaps than we know.”

After conversing together for a few minutes the two proceeded to the outhouse where the body had been laid. The cold, livid face of the dead man had a ghastly look, and the wide-open eyes seemed for the first time to be looking a great fact in the face. Both were silent ; the old man probably going over the tale of those whom, to his own knowledge, the same cause had brought to a similar end. To the young man the experience came more nearly home. After gazing upon the lifeless form for a minute or two, he laid his hand upon its brow, and murmured to himself :—

"I thought, dear Madge, to repay somewhat of your love to me in the old days, but since it cannot be to you personally, it shall be to those who are left. Rest in peace."

Not many days after Madge and his martyred daughter's remains were consigned to their last resting-place, Clondalkin had to leave Coggleton, being called away by the firm for which he worked; but before going he saw Mrs. Madge removed to a lodging fitter for the habitation of human beings, and promised her that neither she nor her remaining children should want so long as he had strength in his frame and cunning in his right hand. Then he went away, and, like Samson of old, he told no one what he had done.

THE END.

REMINISCENCES OF DR. SPURZHEIM.

Dr. Nahum Capen, of Boston, Mass., gives us an interesting book of his recollections of Spurzheim,* the disciple and long-time associate of Dr. Gall, the founder of phrenology, with whom he was on intimate terms of friendship during his sojourn in Boston, and to whom was confided his affairs after death. Spurzheim went to the United States in 1832, landing at New York on the 4th of August, and he died at Boston on the 10th of November following. Although his time in America was short, he did a great work there. Indeed, it appears to have been partly owing to his excessive labours that he descended to a premature grave. Mr. Capen says:—

"On the 17th of September he commenced a course of eighteen lectures on phrenology, at the Athenæum Hall, Boston, and soon after another course at the University, Cambridge. These lectures occupied six evenings in the week. He delivered, besides, in the afternoons of every other day, a course of five lectures before the medical faculty and other professional gentlemen of Boston and vicinity on the anatomy of the brain. His lectures, both in Boston and at the University, excited great and lively interest.

"His lectures in the city were generally an hour and a half in length, and at Cambridge two hours; and he often remained at the close of the lecture to answer such questions as his auditors might feel disposed to ask, and many at this time sought an introduction to him. While he remained in the hall he was generally surrounded by a crowd of admirers who seemed to lose the faculty of counting time.

* "Reminiscences of Dr. Spurzheim and George Combe," by N. Capen, LL.D.—New York: Fowler and Wells; London: L. N. Fowler.

"His time and presence were in constant demand. There was hardly an hour in the day, after nine o'clock, during which he was not engaged either in receiving company or making visits. This was not all. The little time which he had after the close of his lectures, of almost every evening of the week, was claimed, and he too often yielded to the pressing invitations of friends. He was early to rise, and much of the time he had before breakfast was given to the preparation of new editions of his works for the press."

This strain (and he had previously, that is, during 1831 and the early part of 1832, been working and lecturing in Great Britain) gradually told upon his naturally strong constitution. He began to feel symptoms of ill-health. After delivering a lecture on natural language he complained of illness, and said, "I am afraid my own natural language has been too strong for the pleasure of my hearers." Regardless of the entreaties of his friends, however, he continued to fulfil his engagements. "On the evening of his last lecture, it was very apparent that his illness had increased. . . . In his lecture he appeared grave and feeble, and did not discover that lively animation which usually lighted up his countenance and characterised his performances. He greatly exerted himself to edify his hearers, but they seemed to be more concerned for his health than interested in his subject." He returned to his lodgings never to leave them again.

"For several days after he had first complained there were no symptoms that gave rise to any serious apprehension or alarm. He considered himself as slightly indisposed, and confidently believed that his chosen physician, Nature, would heal and restore him. Had these moments been enjoyed in rest and quietude, it is possible that the fatal grasp of disease might have been avoided. But this was not to be. Receiving no relief, from his own choice he consented that I should call Dr. James Jackson. . . . This distinguished physician attended him from the 30th of October till his death, which occurred at eleven o'clock on Saturday night, November the 10th."

His remains (all but the skull, brain, and heart) were buried in Mount Auburn Cemetery, where a monument was raised by public subscription to his memory.

"It is difficult, in a few words," says Mr. Capen, "to convey to the reader the character of Spurzheim. All that was proper and exalted in man was to be found in him. What he was in character he was in practice. The semblance was true to the reality. Endowed with a powerful intellect and eminently graced by the higher sentiments, he honestly

explored the world for truth. His passions were made the servants of his reason, and by systematic culture, he literally stood before the world as a man of wisdom and strength."

Space would not permit us to attempt to estimate the influence of Spurzheim on the advancement of phrenological truth, but that it was great, greater than even that of Gall himself, few can doubt. Everywhere he went he obtained for the science a respectful hearing, and silenced the mouth of misrepresentation. Even in the United States in 1832, although the subject was discussed, "a master-mind was wanted," as Mr. Capen observes, "to combat the prejudices of the people and to undeceive the learned. If there was one man more capable than all others in the world to set forth the claims of this important science and to defend it, that man was Spurzheim." Although he did not silence criticism and root out opposition, he established phrenology on a sound basis in a soil in which it has thriven more than in any other part of the world.

Mr. Capen's book contains also some interesting recollections of George Combe, and a deal of pleasant gossip about matters phrenological in general.

AN EXTRAORDINARY CASE OF HYPNOTISM.

A contemporary recently published the following account of a scene which occurred in a French law-court. It is written by its Paris correspondent, and exemplifies in a striking manner, not only the nature of the mesmeric, or hypnotic power, as we prefer to call it, but the injurious effects that may arise from its injudicious use.

The court of appeal in Paris yesterday (says the writer) was the scene of a most curious and remarkable spectacle. Last August a young man named Didier was arrested for an offence in the Champs Elysées, and sentenced to three months' imprisonment. His friends, considering him innocent, advised him to appeal, and engaged Maître Reitlinger as his counsel. The learned gentleman at once demanded that his client should be submitted to medical examination, and the Court appointed for that purpose Drs. Mottet and Mesnet, two well known specialists in mental diseases, under whose surveillance the young man was placed for three months in the Hôpital Saint Antoine. At the end of that period the doctors made the following report:—

"Didier suffers from a most remarkable nervous affection. He lives in a state of constant somnambulism, the attacks of which can be provoked at will. The numerous doctors who have watched him at the Hospital have proved that he is entirely destitute of any will of his own, and submits to all injunctions in the most automatic manner.

When he is in a state of somnambulism he can be made to write letters and perform other things without being conscious of what he is doing. In addition these acts may be accompanied by very strange phenomena. Thus, for example, if, having two sheets of paper before him, the one on which he has begun to write is taken away, he will continue his letter on the second sheet without perceiving the change. Individuals of this category are so singular that they may remain, no matter when or where, in a state of trance, which may last three or four hours. They remain motionless, entirely unconscious of place or time. One day, while on the Place de la Bastille, he was seized with a fit of somnambulism, and his comrades had to carry him to a lodging-house for the night. A student at the Hospital saw him get out of bed one night, dress himself, and copy several pages of music. He was sleeping all the time. The next morning he was quite astonished at the work he had done. Various experiments were made on him. On two occasions he divined the secret thoughts of the doctors. One of these may be mentioned. A student said to him, in the night time, 'Look Didier; there's a pretty woman.' It was pitch dark, and, of course, there was no woman present. Didier replied, 'No, no; she is ugly; she has a child in her arms,' this remark corresponded exactly to the thoughts of the student. Didier then rushed forward to save from falling the child which he imagined he saw in the arms of the imaginary woman."

The prisoner, who is about twenty-two, appeared in Court, accompanied by his counsel and doctors. His appearance aroused great curiosity, and all eyes were turned on him as he tottered rather than walked to the bar. Maître Reitlinger, having addressed the Court in his defence, the Judges were about to withdraw to consider their verdict, when the doctors offered to confirm the statements made in their report by practical experiments on the spot. The Bench consented, and then occurred the following painful scene.

Doctor Mottet, followed by the magistrates and prisoner, retired into a side room. Here, by the usual means of rapid passes of the hands before his eyes, and a strong fixed gaze, the unhappy "subject" was mesmerised. Didier was then left in charge of two of the Municipal Guards on service, the doctors and the judges returned to the court, and the door of the room was shut. Doctor Mottet now called the prisoner by his name. The next second a fearful noise was heard. It came from the sick young man. A few minutes before a touch of the finger would have almost knocked him over, so feeble and emaciated was he. Now, under the influence of magnetism, he was like a raging lion. Upsetting the guards who held him by the wrists, he rushed at the door, broke it open, and, knocking down everybody in his path, ran up to Dr. Mottet. Here he suddenly stopped, and, fixing his eyes on his mesmeriser, trembled from head to foot in a manner terrible to see. Shrieks of horror ran through the court. The doctor then set to work. "Undress yourself," said he to the prisoner. In a few seconds Didier stripped himself of

nearly all his garments. "Dress yourself again," said the doctor, and again the prisoner obeyed with the same lightning rapidity. The experiment appeared conclusive. Doctor Mottet then awoke his "subject" by blowing on his face. Didier fell to the ground as if shot; the doctor, however, soon brought him round again. "Why did you undress yourself before these gentlemen?" asked Doctor Mottet; "That was very improper." Didier, gazing with vacant astonishment, replied, "What! undress myself; impossible." And the young man clung to the doctor for protection like a child. The Bench, however, was not convinced, and appeared to look upon the whole affair as a comedy. Doctor Mesnet, in his turn, now operated on the prisoner. Having mesmerised him, he ordered him to write from memory a letter addressed to him while in prison. Didier replied, "Cannot; because I am in prison." The doctor insisted, whereon the prisoner sat down to a table and wrote, word for word, the letter in question, without a single mistake. While he was writing it Doctor Mottet took a long needle out of his instrument case, and plunged it into the young man's neck, but he felt nothing. By this time, however, the Bench had seen enough of these painful experiments, and some of the audience crying out, "*Assez! Assez!*" the sitting came to an end. The Court, considering the prisoner was not responsible for his acts, quashed the verdict of the lower court, and the unhappy man was discharged.

Hypnotism is too often used as a plaything, to amuse and entertain, and so leads to much harm. Persons using the power or subjecting themselves to its influence cannot be too careful, for they do not know what injury may ensue. Experiments therewith should never be conducted but in the presence of experience. Judiciously used, however, hypnotism may be means of throwing a great deal of light upon the subject of psychology.

Facts and Gossip.

THE demand for the articles on "The Face as Indicative of Character" is so great that it has been found necessary to reprint the "Chapter on Noses" in pamphlet form. The price of it is sixpence.

IN order to meet the requirements of a large number of persons, Mr. Fowler has brought out a little work for beginners, entitled, "How to Learn Phrenology," the price of which, sixpence, brings it within the reach of all. From a press notice of the work we quote the following:—"The style is clear yet fascinating, rendered so by the enthusiasm and distinguished ability of the veteran phrenologist who writes it. There is not a superabundant word to be found; it is, on the contrary, a miracle how so much instructive matter can be crowded into a pamphlet at the price."

PROFESSOR LEGATE of Nevada has been experimenting with a view to ascertaining what effect the moon has upon fish, and the results of his investigations go to substantiate what old fishermen have always said, namely, that it spoils them. The rays of light, or something carried in the rays, cause the fish to decay very rapidly. Even cat-fish, all alive and kicking when exposed, were in a bad state in a few hours. Professor Legate is a firm believer in the influence of the moon on man and on all things mundane. The atmosphere being attracted by the moon the same as the waters of the ocean, only to a much greater extent, he is of the opinion that effects are produced by the aerial tide which are generally attributed to other causes. A gentleman in this city, hearing of the fish experiments, states that some years ago, while on the west coast of Africa, he one night slept on the deck of a vessel under the rays of a full moon, and the result was that he was totally blind for three days.

ACCORDING to the *Lancet*, the male children of mothers who have been distinguished for special intellectual attainments are not, as a rule, remarkable either for their brain power or the mental work they achieve; whereas the male children of mothers who have been notably characterised by general intelligence, without special talents, are commonly distinguished for intellectual ability. Experience seems to show that special brain-work, properly so called, on the part of the mother, exhausts the energy of brain-development—or reproduction—which, if conserved, would express itself in the mental perception of her male offspring. The operation of the law of “development by work”—universal in its application under normal conditions—seems to be suspended when the work done is the result of a concentration of energy, by which force is drawn off from centres other than those thrown into special activity. It follows that the higher education of women is racially—whatever it may be in the case of the individual—an economic mistake.

In a friendly notice of this publication in a recent number of the *Oracle* (a unique and useful periodical that should be known to all) the criticism was made that phrenology to be valuable should be prophetic. This is just what phrenology is being every day. Thousands of persons both in this country and America could confirm this statement from personal knowledge. An instance in point came under our notice a few days ago. A young woman who had her life all before her called upon Dr. Donovan nearly thirty years ago and sought his professional advice. He pointed out that she had artistic talent, and said she might devote herself to art with confidence, remarking, however, that, in consequence of the relative smallness of Colour, she would not excel as a colourist so much as in drawing and designing. She followed the doctor's advice, and became a successful and noted teacher of drawing. In this, as in many other cases, phrenology was decidedly prophetic.

SCIENTIFIC researches in the extensive chalk-pits of Moravia have recently brought to light many curious and interesting relics of pre-historic ages, including a fragment of what is pronounced upon high authority to be the long-sought tertiary man, whose geological resting-place had hitherto defied discovery. It appears that Professor Maschka, while excavating in a subterranean gallery branching out of the so-called Schipka pit, near Siromberg, came upon part of a human lower jaw buried under a heap of calcined bones and stone implements. He at once forwarded this remarkable object to Dr. Schaffhausen, Professor of Geology at Bonn University, who, having carefully examined the relic, pronounces it to be the jaw-bone of an eight-year old child, although by its size it might well be taken for that of a full-grown man. Not only is this very old jaw-bone of such extraordinary dimensions that the pre-historic youngster to whom it belonged must have been the scion of a race of giants, but it is characterised by certain peculiarities of conformation, indicating that the tertiary lad in question differed in more than one physical respect from boys of the present day, if the evidence of his maxillary processes may be accepted as conclusive. In Professor Schaffhausen's opinion, this more than antediluvian youth must have been to some extent pithecoïdal, or monkey-like. Of course we need not take this inference as conclusive : scientists have erred before now.

THE colour of clothes, remarks a contemporary, is not a matter of indifference. White and light-coloured clothes reflect the heat ; whilst black and dark-coloured materials absorb the heat ; hence it is that in summer we wear light-coloured dresses. But, after all, light colours are really best at all seasons ; for though black and dark substances absorb heat best, they also radiate or give it off soonest. There is no doubt that white clothing retains the heat of the body longer than dark clothing. The coachman will tell you that his white duffel coat is warmer in winter and cooler in summer than any other kind of coat, and the brewer's drayman will wear his white stockings all the year round. The true reason for our preference of dark-coloured clothing in winter and during bad weather is economy. It is a question of soap and washing, not of comfort, which decides us to choose those colours in materials which do not bear constant washing, such as wool and silk, which show the dirt least, and retain their colour longest. In the summer, when ladies wear linen and cotton fabrics which do not suffer in the wash-tub, they can indulge in their love of white and delicate tints of colour.

A GENIAL disposition, or good humour is rightly reckoned a most valuable aid to happy home life. An equally good and useful faculty is a sense of humour or the capacity to have a little fun along with the humdrum of life. We all know how it brightens up things generally to have a lively, witty companion, who sees the ridiculous points of things, and who can turn any annoyance into an occasion for laughter. It does a great deal better to laugh over

some domestic mishaps than to cry or scold over them. Many homes and lives are dull because they are allowed to become too deeply impressed with a sense of the cares and responsibilities of life to recognise its bright and especially its mirthful side. Into such a household, good, but dull, the advent of a witty, humorous friend is like sunshine to a cloudy day. While it is oppressive to hear people constantly striving to say funny things, it is comfortable, seeing what a brightner a little fun is, to make an effort to have some at home. It is well to turn off an impatient question sometimes and to regard it from a humorous point of view instead of becoming irritated about it.

THERE is a form of nervousness that leads a man to suppose himself seriously ill, when, in reality, he is only more nervous than usual. He flies to a physician for relief, and often ends by persuading himself into a severe illness. The fact is, nervous people waste a great deal of money, confidence, and worry on their nervousness. It is perhaps disagreeable to very uncomely people that they are not beautiful: adult intelligent people of defective education lament the disadvantages of their youth; persons who desire to be religious and yet are intellectually sceptical, are frequently made miserable by the conviction that they are incapable of acquiring piety. A man with a Roman nose may as well bewail his incapacity to change his organ into Grecian outline as for nervous people to lament that they cannot discharge nervousness from their physical organisation. It cannot be expelled. It is there to stay. But self-control and self-restraint will do much towards obviating the evil, and are more efficacious than the attendance of any physician.

AN interesting report upon the artificial propagation of sponges has, at the request of the Secretary of State for the Colonies, been prepared by Prof. Ray Lankester. It chiefly deals with the results obtained in some experiments initiated by Prof. Oscar Schmidt in the waters of the Adriatic during the period, 1863-72. From those experiments it has been proved that a sponge cut into small pieces will form independent masses of growth. It seems but yesterday when the sponge was regarded as a vegetable product; we now not only recognise it as an animal, but are considering schemes for its artificial nurture.

Answers to Correspondents.

E. D.—Busts such as you desire, that is, unmarked ones, can be had. The feminine type is indicated by feminine outlines. The "diploë" does not disappear during growth as you imagine. The words "cellular or sponge-like," used in the "Manual of Phrenology," do not mean that the diploë is soft like a sponge, but that it is in the form of little cells.

THE
Phrenological Magazine.

MAY, 1881.

JAMES RUSSELL LOWELL.

BALANCE of power is an element of perfection, and when training, habits, and occupation are all in favour of harmony of action and consistency of life, the character is so rounded that there is little room for extremes.

In the organisation of James Russell Lowell, who had gained a well-earned reputation in England, long before he was appointed American minister, there is harmony of the temperaments and of the various functions of the body. There is also a balance of power mentally that conduces to harmony of mental action. There appears to be less antagonism, either in mind or body, than is common among men of distinction. In a physical sense, he is inclined to take life too easily, and to devote himself too much to brain-work. When taking exercise he enjoys it immensely, if within certain limits; but his muscular power is not strong enough to continue violent exercise long. His large lungs, however, indicated by breadth of nostril, require and enjoy abundance of fresh air.

The mental and physical powers are so blended as to enable him to enjoy every moment of life. Vital power and animal life are so strongly indicated, and there are at the same time such proofs of a free, unperverted nature, that a master will and a sound, healthy, intellectual and moral sense must ever have had a controlling influence. Passion and impulse thus guided make for strength instead of weakness. The make-up of the face, and the way the head is set upon the shoulders indicate substantial power. Hence there will be more in his works than mere surface flash and glitter; there will be something to fall back upon, something to bear the fret and rub of time.

The head, so far as can be judged from the likeness, indicates uniformity of development, and an equal distribution of power. There is a good strong foundation to build upon. The whole base of the brain, from front to back, is broad, so that he is far from being top-heavy, or overbalanced with sentiment and fancy. He is capable of enjoying all that belongs to physical life—striking the full tone of all the gamut of pleasure.

Destructiveness appears to be the weakest of all the organs in the base of the brain, and there are no traces of it in his expression. When his moral sense is outraged, he may show an amount of indignation amounting to severity, but malice is a stranger to his nature, and if he fights at all it is for peace. He has a high appreciation of food, and can enjoy the delicacies of the table.

The perceptive faculties are favourably developed. He is broad between the eyes, and has a long eyebrow, hence he sees intelligently, and takes note of what he does see, and whether he is practically artistic or not, he has artistic perception, and is a lover of perfect forms and proportions, as well as of colours and the order and arrangement of things. He is able to make correct estimates of qualities, quantities, and numbers, and to systematize his plans and ideas. Few foreheads indicate so correct a perception of beauty of form and perfect symmetry and proportion; and his very large Form and Language must give him great facility as a scholar and in composition. The eyes are large, open, and projecting, and indicate a free, correct, and copious use of language—enabling him to select language suitable to his ideas, and to correctly criticise the use of language by others.

He is broad in the temples, which indicates versatility of talent, power of contrivance, and ability to do more than one thing in one way. With language it would give variety of expression; with the reasoning intellect ingenuity in reasoning; and with the imagination variety of imagery and conception.

Ideality is large, and with his temperament and developments, must have a powerful influence in all his mental operations, rendering him very impressible to new ideas, and giving great scope to his mind. It aids greatly in giving him exquisite taste, sense of the beautiful, and perception of the perfect; and, with his high culture and well-balanced organisation, his perceptions of harmony, proportion, and beauty must be more perfect than those of most cultured men. Wit is well defined, but too well balanced to make him take pride in being personal or untimely in his jokes. He is quick to see the

humorous and playful in nature. This faculty aids greatly in suggesting pleasant thoughts and happy modes of expression ; also in giving genial power of satire.

The intellectual faculties are so blended with the other powers of mind, that they help to magnify his feelings and sentiments, rather than manifest themselves as so much scientific or philosophical ability. Yet if the occasion required close observation or original research, his intellectual powers are equal to the effort.



But his highest gifts and the leading and controlling elements of his mind are manifested through the coronal brain. His whole mind is modified by their action. He is too conscious of dependence upon a higher power to be proud or ostentatious, and too mindful of his own weakness to be vain or extravagant in his pretensions : hence modesty should be a characteristic feature. The coronal brain is high, broad, and full, indicating that all the moral organs are fully developed, and enter strongly into the composition of his mind.

Whether professedly religious or not, he cannot but recognise the elements of piety and sanction their being lived up to.

His Firmness is large enough to aid in giving stability and consistency to his character, without making him unreasonably tenacious or stubborn. There is no apparent deficiency in the development of Conscientiousness, while the expression of the eye is favourable to its great activity and regulating power. Hope has a sustaining though not a controlling influence. Veneration is not large enough to lead him to idolise any one because of rank and wealth, nor to make him satisfied with a religion based on creed and ceremony. Benevolence, although large and modifying in its influences, would not so control as to give morbid sympathy as to the general condition of mankind; but he would feel keenly any act of cruelty towards helpless and inoffensive persons, or calamities that might befall the innocent.

Agreeableness, Mirthfulness, and Spirituality, are all large, and, as it were, pivotal powers of his mind. They give elevation, expansion, and suavity to the whole mind, and introduce him to the immaterial and spiritual; enable him to perceive the character and motives of mankind, and help him much in understanding the divine mind and attributes. They also aid him to amplify and beautify his thoughts and feelings. Thus he would be of great service to others who listen to his conversation, or read his productions, by expanding their conceptions of things, and giving them more elevated views.

His large Intuition and Comparison give him great facility to perceive and describe character, to make his ideas tangible and practical, to portray human nature correctly, and to take sensible views of life. For his literary and poetical talents he is indebted to his peculiar temperament and tone of mind, to his harmony of development, to the hereditary influence of his mother, and to the combined action of his moral brain, along with large Language, Comparison, and Intuition. L. N. F.

The foregoing sketch would be incomplete without a few particulars of Lowell's life and works, being, as he probably is, a stranger to many readers. James Russell Lowell was born in 1819, at Cambridge, Massachusetts, so that he is some years younger than Mr. Tennyson. He was educated at Harvard College, Cambridge, and, with the exception of two visits to Europe, never lived away from his native place, until he was appointed ambassador to Spain, and later, to England. He studied law, but never practised, preferring to devote himself to literature. In 1855 he was chosen to succeed Longfellow as Professor of Modern Literature at Harvard College.

He is, and will probably continue to be, chiefly known by his "Biglow Papers," a number of humorous poems inspired by the political atmosphere of the United States at the time they were written. Mr. Lowell's own account of how he came to write them is characteristic. "All I can say is," he says, "the book was *thar*. How it came is more than I can tell. . . I only know that I believed our war with Mexico (though we had as just ground for it as a strong nation ever had against a weak one) to be essentially a war of false pretences, and that it would result in widening the boundaries, and so prolonging the life of slavery. . . . I believed, and still believe, that slavery is the Achilles-heel of our own polity, that it is a temporary and false supremacy of the white races, sure to destroy that supremacy at last, because an enslaved people always prove themselves of more enduring fibre than their enslavers, as not suffering from social vices sure to be engendered by oppression in the governing class. Against those and many other things I thought all honest men should protest. I was born and bred in the country, and the dialect was homely to me. I tried my first "Biglow Paper" in a newspaper, and found it had a great run, so I wrote the others from time to time during the year which followed, always very rapidly." Several editions of the "Biglow Papers" have been published in England, and widely read by Englishmen, and as keenly appreciated, as, indeed, they could not help being by anyone having a taste for quaint humour, telling satire, and a mother-wit as shrewd and racy of the soil as anything native to the American continent. The only bar to their becoming as widely popular as any work in the English language is the dialect in which they are written, which is that known as the New England dialect, but is, in reality, quite old English. It is a bar, however, which would stop none but the most intellectually indolent people. The edition before us,* which is the authorised edition of 1859, together with the second series of 1862, contains a glossary—a most unnecessary addition, one would think, to anyone who has heard our English tongue in the mouth of unsophisticated English folk. So far as the dialect itself goes, the poems might have been written by one born and bred anywhere betwixt Orfordness and the Wrekin. Their most original note lies in the peculiar and forcible use that is made of the homely scriptural language common to everyday life in New England, and, it should be added, in the combination of dry, pungent humour with the

*The "Biglow Papers," by James Russell Lowell, with a preface by Thomas Hughes, Q.C. London: Trübner & Co., Ludgate Hill.

language of Scriptural history and teaching, as in the following :—

Parson Wilbur sez he never heerd in his life
Thet th' apostles rigged out in their swaller-tail coats
An' marched round in front of a drum and a fife,
To git some on 'em office, and some on 'em votes ;
But John P.
Robinson he

Sez they didn't know everythin' down in Judee.

If there is humour in that, there is humour and something more in this :—

'Taint your eppyletts an' feathers
'Make the thing a grain more right ;
'Taint a follerin your bell-wethers
Will excuse ye in His sight ;
Ef you take a sword an' dror it,
An' stick a feller thru,
Gov'ment aint to answer for it,
God'll send the bill to you.

The humour and satire are almost as unfailing as in Butler's famous work, and in proportion to their length the poems contain almost as many apt lines—apt for quotation as Hudibras. Here are a few specimens, taken at random :—

It takes a mind like Daniel's, fact, ez big ez all out-doors,
To find out thet it looks like rain arter it fairly pours.

A marciful Providence fashioned us holler
O' purpose thet we might our principles swaller.

A ginooine statesman should be on his guard,
Ef he must have beliefs, not to b'lieve 'em too hard.

To show him in another style, we quote the following from "The Courtin'" :—

He was six foot o' man, A 1,
Clean grit an' human natur' ;
None couldn't quicker pitch a ton,
Nor dror a furrer straighter.

He'd sparked it with full twenty gals,
Hed squired 'em, danced 'em, druv 'em,
Fust this one, an' then thet, by spells—
All is, he couldn't love 'em.

But long o' her his veins 'ould run
All crinkly like curled maple,
The side she breshed felt full o' sun
Ez a south slope in Ap'il.

She thought no v'ice hed sech a swing
Ez hisn in the choir.
My ! when he made Ole Hundred ring
She *knowed* the Lord was nigher.

Mr. Lowell's poems in pure literary English are quite as fresh and original, if not as naïve, as the "Biglow Papers," and equally worthy of perusal. It is no exaggeration to say that in no American poet is there more of the true metal of poetry than in the one who is now resident amongst us.

ON VISIONS.

The writer of the following pages has always been strongly attracted by what is usually called the supernatural, and has given a good deal of thought and study to the subject. His interest therein was first awakened by some curious youthful experiences, which need not be specified, and may possibly be accounted for by the explanations given below. Up to the time of being twenty years of age, however, he had never seen a ghost, although some of his friends had, or said they had. This was a matter of great disappointment to him, and he never allowed an opportunity of trying to see one pass without taking advantage of it. Nor did his diligence go unrewarded, as diligence seldom does, if guided by intelligence.

The way in which he saw his first and only ghost was as follows: A good woman of the town of Chesterfield, with whom he lodged for a time, told him that her deceased husband used to "walk" at certain times in the graveyard of the parish church. The good man had been a compositor on one of the local newspapers, and had frequently to work late at night, and, of course, to find his way home at all sorts of unseasonable hours. He appears to have been a very nervous person, besides being consumptive, and as his nearest way home lay through the churchyard, it is not wonderful that he sometimes saw, or thought he saw, ghosts. Anyhow, once he seems to have seen the ghost of his mother, and it so affected him that he told his wife that, when dead, he was sure to haunt the churchyard. And so, said his widow, he did. Here, thought the writer, was a chance that must not be lost. Like the defunct compositor, he was for the time being connected with the staff of one of the local newspapers, and so had frequent opportunities of passing near the churchyard late at night, about "the witching hour" in fact. Many times he went out

of his way to pass through the graveyard. At length, one moonlight night, he came to the church just as it was striking twelve. For a moment he stood at the gate, looking up at the cumulus clouds that were chasing each other athwart the moon, and then advanced along the churchyard path. He had not gone more than half-way, when he suddenly saw something a little aside, among the gravestones. Was it a ghost, or a trick, or what? After a moment of hesitation, or something akin to shuddering dread, he screwed up his courage and determined to see what the ghost was made of. He went a few paces, feeling more sure with each step that it was a case of trickery, and that they would know at the office in the morning that he was not to be frightened by a white sheet. But just as he thought he was about to grasp the ghost, it vanished. How he got to his lodging he never knew; he only knew that his brain was in a whirl the whole night.

After the first effects of this vision were passed, the writer began to search out its *vera causa*, and his health being at the time not good, he decided that that was the cause—that and the fact of his having had his mind full of the subject of ghost-seeing for many weeks previously. He was strengthened in this view by finding that other persons, especially women, were subject to visions, of greater or less intensity, during periods of ill-health, or when there was unusual disturbance in the system. Subsequent physiological studies confirmed these inferences. As it is important that right views should be had on this subject, it may be well to give a case or two from the text-books of physiology. One of the most striking is that of Nicolai, a well-known bookseller of Berlin, who read a carefully-prepared account of his visitations before the Berlin Academy of Sciences, from which the following account is taken.

"During the few latter months of the year 1790," says Nicolai, "I had experienced several melancholy incidents, which deeply affected me, particularly in September, from which time I suffered an almost uninterrupted series of misfortunes that affected me with the most poignant grief. I was accustomed to be bled twice a year, and this had been done once, on the 9th of July, but was omitted to be repeated at the end of the year 1790. . . . I had, in January and February of the year 1791, the additional misfortune to experience several extremely unpleasant circumstances, which were followed on February 24 by a most painful altercation. My wife and another person came into my apartment in the morning in order to console me; but I was too much agitated by a series of incidents which had most powerfully affected my moral feeling,

to be capable of attending to them. On a sudden I perceived at about the distance of ten steps, a form like that of a deceased person. I pointed at it, asking my wife if she did not see it. It was but natural that she should not see anything; my question, therefore, alarmed her very much, and she sent immediately for a physician. The phantasm continued for some minutes. I grew at length more calm, and being extremely exhausted, fell into a restless sleep, which lasted about half an hour. The physician ascribed the vision to violent mental emotion, and hoped there would be no return; but the violent agitation of my mind had in some way disordered my nerves, and produced further consequences, which deserve a more minute description.

"At four in the afternoon the form which I had seen in the morning reappeared. I was by myself when this happened, and being rather uneasy at the incident, went to my wife's apartment; but there likewise I was persecuted by the form, which, however, at intervals disappeared, and always presented itself in a standing posture. After six o'clock there appeared also several walking figures, which had no connexion with the first. After the first day the form of the deceased person no more appeared; but its place was supplied by many other phantasms, sometimes representing acquaintances, but mostly strangers: those whom I knew were composed of living and deceased persons, but the number of the latter was comparatively small. . . . When I shut my eyes these forms would sometimes vanish entirely, though there were instances when I beheld them with my eyes closed; yet when they disappeared on such occasions, they generally returned when I opened my eyes. . . . They all appeared to me in their natural size, and as distinct as if alive, exhibiting different shades of carnation in the uncovered parts, as well as different colours and fashions in their dresses, though the colours seemed somewhat paler than in real life; none of the figures appeared particularly terrible, comical, or disgusting, most of them being of an indifferent shape, and some presenting a pleasing aspect. The longer these persons continued to visit me, the more frequently did they return, while at the same time they increased in number about four weeks after they had first appeared. I also began to hear them talk; sometimes among themselves, but more frequently they addressed their discourse to me; their speeches being uncommonly short and never of an unpleasant turn. At different times there appeared to me both dear and sensible friends of both sexes, whose addresses tended to appease my grief, which had not yet wholly subsided. Their consolatory speeches were in

general addressed to me when I was alone. Sometimes, however, I was accosted by these consoling friends while I was engaged in company, and not unfrequently while real persons were speaking to me. The consolatory addresses consisted sometimes of abrupt phrases, and at other times they were regularly executed."

It will be noted that Nicolai records that he had neglected to submit at the end of 1790 to the blood-letting, which was one of the medical delusions of those days. It was finally decided to apply leeches, and on the 20th of April, 1791, at eleven o'clock in the morning, Nicolai tells us, the operation was performed. "No person," he continues, "was with me besides the surgeon; but during the operation my chamber was crowded with human visions of all descriptions. This continued uninterruptedly till about half-past four o'clock; just then my digestion commenced. I then perceived that they began to move more slowly. Soon after their colour began to fade, and at seven o'clock they were entirely white. But they moved very little, though the forms were as distinct as before; growing, however, by degrees more obscure, yet not fewer in number, as had generally been the case. . . . They now seemed to dissolve in the air, while fragments of some of them continued visible for a considerable time. About eight o'clock the room was entirely cleared of my fantastic visitors. Since that time," he adds, "I have felt two or three times a sensation as if they were going to reappear, without, however, actually seeing anything. The same sensation surprised me just before I drew up this account, while I was examining some papers relative to these phenomena, which I had drawn up in the year 1791."

The cause of these illusions is not hard to understand. They in reality are called forth by some derangement of the powers whereby we see and hear in normal conditions. Under ordinary circumstances, the eye falling on an object transfers an impression of that object to the brain through the optic nerve, which connects the eye with the part of the brain exercising the sense of sight. For it must be understood that the eye is merely an arrangement of lenses adapted to receive, focus, and otherwise adjust rays of light streaming from the objects seen. Its function is simply to adjust and correlate the conditions necessary for the production of an impression. This impression, carried to its proper brain-centre, becomes transformed into a special sensation—that of sight. Thus we in reality see, not with the eye, but with the brain, or a portion of it. The eye represents the lenses of the photographer's camera, the brain corresponding to the sensitive plate which

receives the image, and on which must be made any subsequent alteration of the image. So it is with the other senses. The external organs are only the channels leading to the real organs of sense, which are in the brain. The ear receives the waves of sound, but it is the brain which distinguishes and, as it were, registers the sounds received.

It only needs a clear appreciation of these facts to understand *many* (it would, perhaps, be rash to say *all*) of the apparitions and so-called ghosts of which we from time to time hear so much. An object that is seen, that is, the image of which is carried directly to the brain, produces what is called an *objective* impression. But it is quite possible to reverse the process, and to project out of the mind, as it were, an image that exists there, as when we recall a person or scene, and picture it so distinctly that we have it, as we say, in the "mind's eye." How near we all come at times to seeing "ghosts" can be readily understood. We get to musing; the thought of a distant friend arises; then his or her image fashions itself in the mind; the imagination becomes so vivid that it seems as though the person were present, and, looking round, we start to find it is not so. So it is with the sense of hearing. The common "ringing in the ears" is a good type of this kind of sensation. There are persons who will tell you that when in the train, the rumbling noise transforms itself into, or rather awakens, a delicious music. In other words the agitation of the auditory nerves recalls some tune which has been impressed upon the organ of hearing.

It was in this way that the phantasms of Nicolai, and the "ghost" of the writer were raised. They were caused, in short, from some disturbance of that part of the brain whose function it is to receive the impressions of sight. In the case of the former there was also an irritation of the brain-centre for hearing. Both were in a weak state of health when the apparitions occurred; and it will be found that such visitations generally take place when the health is deranged.

It does not follow, however, that there is always a marked state of ill-health. Sometimes there may simply be a slight nervous derangement. This was possibly the case in one of the most interesting instances of vision-seeing by a person of culture and intelligence on record. It is related in the *Athenæum* of January 10, 1880, by the Rev. Dr. Jessopp, who, when engaged in Lord Orford's library in copying some literary notes, saw a large white hand, and then, as he tells us, perceived "the figure of a somewhat large man, with his back to the fire, bending slightly over the table, and apparently examining the pile of books I had been at work upon." The

figure was dressed in some antique ecclesiastical garb. The figure vanished when Dr. Jessopp made a movement with his arm, but reappeared, and again vanished when the reverend narrator threw down a book with which he had been engaged. Dr. Jessopp's recital called forth considerable comment, and a letter from Dr. Andrew Wilson, of Edinburgh, presenting a theory based on the principles of subjective sensations. After detailing the fashion in which subjective sensations become projected forwards, Dr. Wilson says (*Athenæum*, January 17, 1880): "The only point concerning which any dubiety exists, concerns the exact *origin* of the specific images which appear as the result of subjective sensory action. My own idea is that almost invariably the projected image is that of a person we have seen and read about. . . . In Dr. Jessopp's case there is one fact which seems to weigh materially in favour of the idea that the vision which appeared to him in Lord Orford's library was an unconscious reproduction of some mental image or figure about which the Doctor may very likely have concerned himself in the way of antiquarian study." It is curious to observe that in the succeeding number of the *Athenæum*, a Mr. Walter Rye writes: "Dr. A. Wilson's solution 'that the "spectre" . . . was an unconscious reproduction of some mental image or figure about which Dr. Jessopp may very likely have concerned himself in the way of antiquarian study,' seems the right one, and I think I can identify the 'ghost.' The ecclesiastically-dressed large man, with closely cut reddish-brown hair, and shaved cheek, appears to me the Doctor's remembrance of the portrait of Parsons, the Jesuit Father, whom he calls in his 'One Generation of a Norfolk House,' 'the manager and moving spirit' of the Jesuit mission in England. . . . Dr. Jessopp when he thought he saw the figure, was alone in an old library, belonging to a Walpole, and Father Parsons was the leader of Henry Walpole, the hero of his just-cited book. Small wonder, therefore, if the association of ideas made him think of Parsons."

As before intimated, it is not claimed that this explanation includes all known cases of vision; nor has the writer any desire to disprove the objective possibility of apparitions; he does not mind what form truth takes, provided it be fully ascertained. But it is of the utmost weight that we are not deceived, and especially in youth, when the mind is so ready, and even eager, to receive fresh impressions, and to be influenced by them; for it is upon what we learn, or accept as fact, in our early days, that we base, consciously or unconsciously, the foundation of our subsequent beliefs and princi-

ples, which form the guides or guideposts of our conduct. Hence the importance of not mistaking a purely subjective phenomenon for an objective existence, and so finding it necessary to frame an hypothesis to explain something that is merely an unconscious creation of the mind itself. J. W.

THE FACE AS INDICATIVE OF CHARACTER.

THE MOUTH AND LIPS.

A straight middle line of the mouth denotes strength and hardness, and a somewhat sedate, unimaginative character. It is more common among men than among women, in whom waving lines take the lead. Mouths slightly open, on the contrary, generally indicate a frank, out-spoken, and trusting disposition.

It should be noted that there is a certain correspondence between the signs of the mouth and other features, as, for instance, the nose, which also has signs of frankness and confidence, and the reverse. We shall see, in the sequel, that the eye likewise has similar indications. This is in accordance with the law of harmony which prevails in the whole and its parts. Where there is a lack of such harmony the character is wanting in unity.

Self-control closes the mouth and draws the lips backwards, while impulse opens the mouth and protrudes the lips. In the former case there may be passion, but it will be under the restraint of will; in the latter, impulse is the stronger, and will have the sway. Observe the lips of childhood, which indicate pure impulse, but impulse in its sweetest and most innocent form. The same lips in older persons lose their beauty and propriety.



Fig. 42.

Disproportion between the upper and nether lips shows a want of harmony between the active and passive principles of the affections, the upper lip representing the latter and the lower the former. Figs. 42 and 43 illustrate what is meant; 42 representing a mouth where active gratification prevails. Of this type of mouth we shall have more to say anon. Fig. 43 shows harmony between the passive and



Fig. 43. active principles.

Remembering that the tongue is the proper organ of taste, and bearing in mind that the lips always bear an analogy in

form and delicacy of touch to the tongue, it becomes self-evident that the lips are indications of the extent of gustatory desire. Hence large lips denote great appetency; and the appreciation of flavours and the qualities of food will be dull and coarse or fine and delicate in accordance with the coarseness or delicacy of these organs. The large and coarse lipped Negro is noted for his gustativeness. The Germans are characterised for an appetite strong rather than delicate; the French, on the contrary, are more delicate in their taste; and the lips of the two nations are in accordance with their characteristics. Fig. 44 denotes excessive appetency, without delicacy; it indicates, moreover, lack of control. Fig. 45 shows opposite characteristics.



The lips also indicate the strength or weakness of the social affections. Fig. 44.



It is not the place here to enter into the relation between the appetites and affections: it is enough to indicate that such exists. Hence the ancients generally picture Bacchus and Silenus together, with the imp Cupid not far off. The unbent bow of Cupid not unaptly represents the ideal line of the closed mouth; and a mouth so shaped is the seat of all the loves. From such bow-mouths fly the love-arrows that pierce the deepest and leave the keenest smart.

The signs of the affections have their seat on the red part of the lips that is seen when the mouth is normally closed; those of appetite being more internal, and tending to protrude the lip, and sometimes to exhibit more of it than usual, as in Fig. 44. Dr. Redfield attributes to the upper lip the sign of fondness, to the lower, kissing. Those who are learned



Fig. 46.



in such matters will perhaps be able to decide. Anyway, it is a safe rule for a young man or a maiden, who has warmth of affection, to avoid cold, thin lips in settling upon a mate; for, apart from the coldness itself, where affection does not guard the door, there is the more chance for unsocial evils to creep in. Fig. 46 shows well-developed lips, indicating warmth of heart and a loving disposition. Fig. 47, on the contrary, indicates a decided deficiency of affectional warmth, and a cold, calculating disposition. While warning those who desire a reciprocal warmth of affec-

tion to avoid mating with one having lips like the latter, it is equally necessary to caution the unwary against the thick, gross lips of brute passion and sensuality.

Wrinkles in the red part of the lips, as in *a* Fig. 48, indicate Friendship. When the lines slightly converge they denote a high degree of the faculty; when perpendicular, a smaller degree of Friendship, but not a deficiency. A person who has a large sign of Friendship will find it less difficult to form friendships than to break them, and in the hour of danger and adversity will show himself more a friend than ever before. This antique kind of friendship is well described in the lines:—

"The tree of its leaves may be reft,
In winter alone on the hill;
But yet a fond few will be left,
To flutter and cling to it still."

Perfectly smooth lips, though they may be loving, are not to be implicitly trusted in matters of friendship. Nearly related to Friendship, though in some respects antagonistic to it, is the faculty of Hospitality, which takes pleasure in the society of a number, where Friendship would seek the company of but one or two. Hospitality is indicated by two or more perpendicular or slightly curved lines or furrows a little backwards from the corners of the mouth,



Fig. 48.

as shown at *b* in Fig. 48. This sign often shows no more than a faint line in placid faces, manifesting itself prominently only when the person smiles. It is the best sign of welcome one could receive; and when persons receive guests without showing this token, they too often entertain for mere vanity sake.

Ardent and devoted love is often accompanied by Jealousy; the green-eyed one often exists also where there is no special development of affection, as a kind of mental dog in the manger, in fact. The faculty is no doubt

legitimate enough when in due subordination to reason and moral sense. But it too often manifests itself in utter disregard of those qualities, when it gives a warp to the judgment as plain as the sign it makes on the face. That sign is an oblique fulness below the lip, as represented in Fig. 49. If you see a woman run to the corner to look after her hus-



Fig. 49.

band, as the writer did the other day, you will see this mark stand out from her lip like a little finger. Ordinarily, when it has not been brought into active exercise by circumstances, it shows as a slight swelling on both sides of the central line of the under lip towards the corners.

Not distantly allied to Jealousy is the faculty of Contempt, and the sign is not far away. Contempt protrudes the lower lip, as shown at *a* in Fig. 50. A more active manifestation of the quality is seen in the swelling of the under lip in the middle. Scorn is nearly akin to Contempt, and is indicated by the muscles which draw the integuments of the chin upwards, as in Fig. 50, *b*. Sometimes an otherwise irreproachable mouth is spoiled by the presence of scorn and contempt: but more than the spoiling of the mouth is the spoiling of the character; and this we often find is done by the indulgence of these propensities.



Fig. 50.

A youth once made pets of a couple of mice that found their way into his room. He was a lonely student, and their scampering about the floor rather pleased him than otherwise, for he had no other company. Then they were so tame that they would eat out of his hands, and he felt that it was any time within his power to put an end to them. But the trouble was that they reared a family without his knowing it, and the members of the family, other families; and then the mischief was done and there was no remedy. When they had got to his cupboard and spoiled some of his most valuable books and utterly destroyed others, he said: "I ought to have caged them up at first." So it is with these low passions. How many a man has had his books spoiled in the same way, because he did not cage them up in time.



Fig. 51.

In Fig. 51 we have a not otherwise bad mouth, but rather the contrary—marred by the Scorn which hangs upon it. Unfortunately the engraver has not succeeded in showing the curl of the nether lip as effectively as he should. In profile it is not unlike the protruding lip of Fig. 42. This pouting of the under lip is no artificial or conventional sign; for when a child feels contempt, it expresses the feeling by thrusting out the under lip. The conjunction of the sign of Scorn and Contempt frequently causes a short transverse wrinkle between the lip and chin. The faculty of contempt is a depraved kind of pride, and is manifested towards whatever is considered

low and vulgar, as the faculty of Scorn is exhibited towards whatever is looked upon as weak and pusillanimous.

The faculty of Love of Distinction is indicated by a slight curl of the upper lip. Persons with the sign large are anxious to shine in society, or to gain name and notoriety in some way, either by display or the manifestation of ability. When excessive, it creates an ambition to outshine others, and in lower types of character is often accompanied by a faculty which is somewhat antagonistic to it, namely, that of Envy. This faculty curls the under lip, and is generally combined with the sign of contempt; for the person who envies invariably tries to hide the feeling under one of contempt. With but few exceptions, however, where there is a large sign of Distinction there is a small sign of Envy, and where there is a large sign of Envy, there is a small one of Distinction. There is reason in the faculty, as there is in all—even the most depraved—of the human faculties. A person who is envious of another who gets a great name, who is distinguished above his fellows, or whose name is frequently on men's tongues, does not manifest this envy because he himself wishes a great name, or desires to be distinguished, or much talked about, but because he feels that persons are more frequently distinguished by favour than from real merit, and that deserving lights are often obscured by the shadow of a great name. Thus envy is, in a sense, one of the outposts of justice.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE I.

It gives me particular pleasure to appear once more before the English public, and to witness the progress of my favourite science; to see, from your numbers, that the prejudices which formerly prevailed against it have greatly subsided. I have to speak to you of phrenology, a term derived, as you all know, from two Greek words *φρην* mind, and *λογος* discourse or doctrine, hence it means the doctrine of the mind. As men are not endowed with the knowledge of the essential nature of mind itself, I cannot speak to you of the mind; we can, however, observe its manifestations and the conditions under which these manifestations take place. Phrenology, then, is the doctrine of the manifestations of the mind and of the relations which these manifestations bear to certain bodily conditions. Do you feel some interest in this science? If you do not, you will not study it sufficiently to know its value.

There are many persons who begin by asking—Is it useful? I am of opinion that it is impossible to understand the application of any thing without understanding the thing itself; and here let me observe that the knowledge of phrenology is the knowledge of the most important part of man—of his consciousness, his passions, his feelings, and his intellectual part; and I think we must say with many others, that of all studies man is the most important study. It is generally understood that phrenology is useful to medical men, because the moral part of man, which includes his affections and passions, has a great influence upon his corporeal part and is a great cause of many diseases, and, without a knowledge of such cause, he must find great difficulty in curing diseases. Indeed, those medical men who have to treat insane persons, find a knowledge of phrenology quite indispensable; for how can they treat the derangements of the functions of the mind without understanding first their healthy condition. To know how to manage the one, it is first necessary to know the other. All those who have studied philosophy will recollect that they can make but little application of any branch of it to practical life.* If phrenology were not applicable to life, you would take but very little interest in it. What I have to find fault with in men who profess to be studying philosophy, is their nomenclature; for it is not exact, and the consequence is, that they discourse for hours and never agree; and I think this also shows that their knowledge is not exact, and therefore their nomenclature is inexact. Medical men are interested in knowing phrenology, so also are those who have to join institutions of any kind, which ought to be founded upon the nature of man. The systems of education also should be founded upon the knowledge of the moral nature of man.

I might say that the arts individually are interested in phrenology, but the arts of sculpture and painting, especially historical and portrait painting, are particularly interested in it. Some painters pay great attention to the shape and appearance of the face, and they ask, is not this a good likeness? But they omit entirely the shape of the head, which to me appears of as much importance as the other. Now take an example, here is the likeness of a person. (Holding up a painting on pasteboard, so divi-

* In regard to so-called philosophy, those who give themselves to the study of it have not yet got away from that state of mind which caused the ancient philosophers to regard the application of their principles to practical affairs as a degradation; thus the man who first applied conic sections to mensuration was looked upon as having demeaned philosophy.

ded that the head might be separated from the face.) Now I will let the same face remain, and change the figure of the head (painted on another piece of paper). Would you not say that it was quite another man? You see that I have allowed the face to remain, but I have altered the configuration of the skull. In poetry, too, it is useful; and artists of imitation should follow poets: for when you use expressions to speak of the different moral powers, you would not wish to contradict yourself by describing a form or configuration inconsistent with the attribute you wished to describe. You would not say that a man had a villainously high forehead, although you might describe him with "a forehead villainously low." Here are two skulls, one high and large, the other small and very low. (Exhibiting them to the meeting.) Would you not say this (the smallest) represented the ignoble sentiments? Which form would you say was the most desirable, merely by intuition, so to speak, without knowing anything of the organisation? There is not a doubt which you would choose. What I have said may suffice to show, in a general way, the usefulness of phrenology.

Permit me to say a few words, to request your indulgence to the inaccuracies I may make in my pretension to use your language; and it shall be my desire to give you plain and simple facts; to compare them, to reduce, as correctly as possible, the facts to principles, and then draw inferences from them. Now as to facts, I consider there can be no differences of opinion as regards them, between us and our opponents; but as to inferences, I shall propose some. But every one must judge for himself as to inferences. The same facts exist, but the inferences drawn from them are many. I shall draw inferences, and I hope I shall to-day have the opportunity of verifying their propositions. Now I shall enter into a few general considerations on phrenology, admitted by all to be incontrovertible; and shall next come to such as are disputed.

There is an ancient doctrine that there is an influence between the mind and body; but every person does not know the meaning of the term temperament.

The ancients admitted that the temperament of the body could give rise to individual feelings; that a man of a bilious temperament is disposed to anger; that such a man might have good penetration and a sound judgment, but not a good memory. That, on the other hand, a man of the sanguineous temperament, having fair hair, a fair skin, blue eyes, and a florid countenance, having proofs of a strong activity in the circulation of the blood, that such a person might have great liveliness, great sensibility, a very good memory, but not deep

judgment. Various other sentiments were ascribed by them to the influence of the temperaments. The influence of the whole constitution, or of what has been called temperament, must be admitted to extend to phrenology, but with some restrictions. It is certain that the individual systems of digestion, nutrition, circulation, and respiration, have a great influence on the power and activity of the whole body. In phrenology we do not admit that the whole constitution of the body produces the determinate feelings; but we admit the influence of the whole constitution, as far as the different degrees of activity depend upon the temperament. If we see a man of a lymphatic temperament, without activity in the external senses, the motion of the muscles being very



THACKERAY : Showing a good degree of the Lymphatic (or Vital) Temperament.

slow; and if we see another man of the same general temperament, with greater activity of the muscular power and the external senses, we conclude that there is a greater degree of activity in the brain of one than of the other. This is important for you to recollect, and I hope you will not forget, that although the constitution does not produce the determinate feelings, yet it has a very great influence on the different degrees of activity. So that when you examine the peculiarities of the head, you must always bear this in mind. In illustration of this proposition, I will refer you to the muscular power. The muscular power does not depend upon the constitution, but the greater activity of that power is influenced

by it: hence, we see that it is less active in the lymphatic than in the bilious constitution.

A doctrine which is commonly maintained, and which is to be found in all physiological books, from the most ancient times to our own days, is, that the viscera have a great influence on the feelings, and everybody knows the expressions—a bad heart, a good head, and so on. The ancients ascribed certain feelings to certain viscera; they placed joy and grief in the heart, anger in the liver, hatred in the spleen, and so on. But this manner of proceeding is not physiological, and it seems strange that such opinions should have continued, since physiologists know that these several parts have particular functions; and if we speak of organs,



LINCOLN : Showing a high degree of the Bilious (or Motive) Temperament.

we know that they have functions. If we go into the study of nature, we find that animals have ears, and many of the mammiferous animals have larger hearts than man, more perfect organs, larger livers, and larger lungs, but you cannot ascribe moral feelings to them. It seems to me that this doctrine has been propagated on this account—when man is the subject of certain passions he feels certain affections about the viscera. Whenever a man is much elated by feeling the circulation is somewhat decayed, the heart palpitates, and there is oppression of the respiration, and pain in the head and other parts; and it is probable that these sensations, produced in individual organs by excitements or depressions of mind, induced the ancients to think that these organs were the seat of their sensations. Would you draw this inference

after what I have said on the functions of these parts? We know, by physiology, that the different parts have a great communication, and that derangement in the function of one causes derangement in the functions of others. There is a great communication between the brain and different parts of the body, and everyone has experienced, that after having taken too much food or drink into his stomach, he cannot reflect; he goes to bed, and in the morning his mind is stronger, and he can then reflect. Yet you could not say that a man thinks by the stomach! Oh, no, it is by the brain that we think. In animals, we see the same viscera and the various kinds of temperaments, but without any manifestations of mind: but have you ever seen any being showing mental powers without any brain? Throughout all nature, if you admit the existence of some intelligence, there you will find brain.

I think you will admit that, and I will come now to the more perfect class of animals—to man.

I shall be able to show you that a person having a very small brain does not and cannot display much mental power. Have you ever seen an individual brain so small as this? (Showing a very small brain to the audience.) Would you expect that such a development of brain could manifest superior talents? Here is another of just the same size, and these models were taken from two persons who were complete idiots; the one died at the age of 19, at Cork, the other at 25, at Amsterdam. Many observations prove that the brain, when very small, is not sufficient to show great talents; and, on the other hand, you will never find that those men who excel in mental powers have very small brains. Lord Bacon had not such a brain as that idiot, as you may now see (showing a mask and forehead supposed to be Bacon's), that he had an immense organisation of brain. Moreover, if we come nearer, if we come to the feelings, we observe certainly a difference in the feelings of women and the feelings of men. Females often say to us, that we do not feel like them; and we reply that they do not think like us. The powers of both sexes, however, are greatly modified by circumstances. Now, if we look to the configuration of the heads of each sex, we find that the heads of men are thicker on the sides than the heads of females, and longer from the ear to the top of the forehead; whilst the heads of females are flatter on the sides, and there is a larger portion of brain from the ear to the occiput than in males. Seeing these great differences, we admit the influence of the brain on the manifestations of the mind; and admitting this influence it has been attempted to ascertain how far the development of particular parts of the brain gives rise to particular feelings.

I shall not speak long on the objections to these propositions, as, by doing so, I should anticipate my subject. I am in the habit of saying that never do any manifestations of mind take place without brain. Is this true? What objection is made to the second part of the proposition? They say that the brain has been injured, and parts of it even removed, and yet the manifestations of mind continue. This objection is made in a very general way; but they have not determined, they have not ascertained, whether the same parts of the brain have been taken away on both sides, and whether the functions assigned by phrenologists to these parts have been then destroyed; the brain being double, would admit of the removal of a part, on one side, without destroying the function of the other. We may lose one eye, and yet see with the other; we may lose one ear, and yet not be deaf. The question to be answered is, whether the function ascribed by phrenologists to a part of the brain, will continue when that part is removed on both sides of the brain? and unless this can be answered in the affirmative, the objection is not forcible. In hydrocephalic heads, the water is either in the interior of the brain, in the ventricles, or it is external to the brain. When it is within the ventricles, I shall be able to show you that the cerebral mass may become very much distended without having its functions destroyed. I had the opportunity of seeing this extraordinary case at Guy's Hospital very lately. (The cast of an immense head was shown.) The head measures thirty-three inches and a half in circumference; it contained nine pints of water, but the brain was situated at the bottom of the skull, and weighed two pounds fourteen ounces and a half. The patient was about thirty years old when he died, and he could write and speak sensibly. Hydrocephalic heads have brains, but you will seldom find the brain at the bottom and the water on the top.

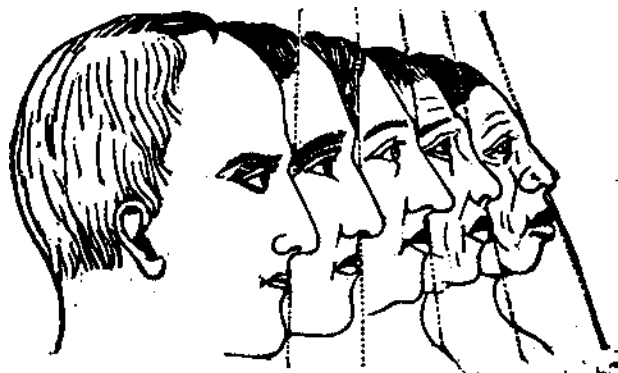
I will now just mention a metaphysical objection which has been made to phrenology; it is said, how can you speak of the influence of bodily conditions on the mind, since the mind does not know them? We may answer, that the mind certainly, in this sense, has no knowledge of them. The eye sees; it is the organ of vision: there are two optic nerves in the brain, yet the impression made on the mind is single; there are two nerves of smell, yet the effect is the same; and I should like to know whether the mind has any knowledge of the instruments which it makes use of. So we admit that the mind does not know the individual parts of the brain, but they are to the mind as the eye and the ear—they are the instruments of the mind.

Well, shall we draw some general inferences, and say, since no manifestations of mind take place without brain, since idiots having small brains cannot manifest the mental powers; and since men of great talents have larger heads than idiots, cannot we measure the powers of the mind by the size of the head, and cannot this be done by phrenology? In speaking of different individuals of different capacities, you must not judge of them by the absolute size of the head. Here, for example, is the head of a turtle, it can scarcely contain an ounce of brain; here is the head of the horse, you see that it can contain more brain than the turtle, and therefore has more capacities; but here is the head of a poodle, a little dog, and shall we not allow that the poodle, in proportion to the size of his brain, shows more powers than the horse? You cannot then, by the absolute size of the brain, judge of the qualifications of mind. You often see that smaller people of the sanguineous temperament can fight larger men of the lymphatic temperament, although the muscles of the latter are much larger, yet they are not so active; you must admit, then, that the constitution has considerable influence. You see this in the muscular power, you see it in the five senses, and you may see it in the brain: hence it would be impossible to judge of the mental qualifications from the absolute size of the brain. Besides, all elephants and whales have, if this doctrine were admitted, larger capacities than men, because their brains are larger.

Physiologists who have studied this subject have adopted another opinion: they have adopted this—that in order to arrive at the knowledge of individuals' powers of mind, it is necessary to consider the head in proportion to the size of the body. There must certainly be a proportion between the head and the body to produce a fine form; but if we draw a small body, we must not make the head too small. Here is a model of the head of the *Venus de Medicis*, which is of too diminutive a size; for if you remove the hair, the scalp, and the bone, there remains but a very little room for the brain; and if you find, in society, an individual with such a head, you will find that he has little sense. You will observe that large persons have sometimes small heads, and very little men the largest heads; therefore this inference cannot be held.

Camper drew a line from the ear to the upper lip, and another from the top of the forehead to the upper lip, and these two lines formed an angle which he called the facial angle, and he thought he could measure the faculties by this angle. The statue of Apollo, measured in this way, would present an obtuse angle, whilst the head of a negro would afford an acute angle; but the objection to this is the promi-

nence of the jaw-bones of the negro, for in them they are more prominent than in Europeans, and would interfere in the accuracy of the angle. Size must be considered in the examination of the head. It is really curious to see that the ancient artists gave different configurations to the head for different talents. If you look at the busts of the gladiators,



Grades of Intelligence. Showing Camper's Facial Angle.

and to the bust of Socrates, your attention is immediately drawn to the different configurations. In the one, the head is more developed before the ear; in the others, the greatest portion of brain is situated behind it. On the next evening I shall proceed to speak of the head more particularly.

ANALYSIS OF PERCEPTION.

Light is not an entity, a something darting away from objects, but an influence and action in a subtle elastic medium filling space and penetrating all bodies—even those not translucent; the action proceeding in direct lines at the rate of 200,000 miles a second, and even travelling at this enormous speed it has taken thousands of years in reaching this earth from visible distant stars. A direct line of light comes from every point of a visible object to every point on which it shines; and in a point in space—in one's room, for instance—a line of light comes from every point of the exposed objects and the surrounding walls, and passing that point from all directions without interference, as the sense tells us and photography shows us; and if light had not a magnetic principle we should see nothing that is even in the presence of a

luminous body like the sun. All objects, even the particles of the air itself, are invested with a light-diffusing property, somewhat as the nails are influenced by the magnet, and become, for the time, magnets in a secondary degree. And thus it is that I have the light interfused within this chamber, and the objects, as it were, all exhibiting themselves to me, though the sun itself is out of sight ; but it requires careful thought and attention to realise this wondrous fact, but which is recognised as essential and fundamental when once clearly conceived. Then any power can only pass from body to body at a distance apart by a medium of communication : as the universal ether in respect of light, and air in respect to sound, &c. ; but there is no sensible light or sound outside, or objective to, the sense or mental impression. That space is invested with light and sound is illusory—all without us is universal silence and absolute darkness, even the seeming shining sun itself, so bright that we are unable to look in its face ; and this brings us up to the law common to all sense perception, that the mental impression is in every instance transferred in effect to its objective cause and source ; hence the light seeming to fill space and shine in the sun, the sound to be in the distance, the pain in the look, the cold in the hand, the feeling in the fingers, the taste in the mouth, the scent in the nose, and so on throughout, we find a common rule of transfer, and the illusory sense of the subjective transferences to the object, but giving intuitively the sense of place, disunion, and distance : and we at once recognise the mistake in accounting for the visual sense of distance by another sense whose special sense of distance is equally to be accounted for, all showing that the common law of transference, as a part of all sense perception in the analysis of perception, is not yet recognised ; and the sense of freedom in the will falls within the common law, the sense of freedom to act being cast back upon its cause, and hence the illusion of a freedom from determining causes, in the cerebral action of which the sense of freedom to act is the consequence and mental concomitant. The subjective thus creates its objective by a true correspondence, true when carefully examined and analysed, and we come to see that this illusory transference is essential to the life of all creatures having perception : to the dog and the cat, the mouse, and to the little fly darting about with such fine instinctive measure of the force requisite, and accuracy in aim throughout all its dance and dartings about over my head, and in all and always. And we find this great law of perception to be general, and not an imperfection ; but what we could not exist without, and but for which I would not perceive the

essentials and pen these lines. And further, that it is by these illusions that all knowledge is acquired, and the notion of a fundamental freedom of the will is banished for ever, and for the first time philosophically explained and disproved ; and in the visual perception the sense of distance is intuitively estimated. And this is the length the line of light has traversed within a marginal range essential to life and action ; so that in seeing yourself in the glass you seem as far behind as you are before the glass : the sense taking account of the whole distance to and from the glass, and hence the reason of the illusion and appearance. And we have an explanation of the remarkable law of the sense of distance, and a reply to Berkeley's idealism in the analysis of the perceptions of external nature.

After considering the primary law of perception of the transfer of the sense to its objective cause, we are brought to recognise what we directly and what we do but indirectly perceive. For instance, the form and size of the table is directly or actually perceived, but the colour is not in or on the surface of the table any more than the sensible light is in the room, or in the fire and flame ; but colours indicate differences in conditions, and the conditions indicate natures and properties, and which is all we practically require either for the life of man or animal, bird or insect. Were the sense not transferred to the object we might be burnt to death without knowing what was taking place. "The subtlety of Nature," says Bacon, "is far beyond the power of sense or understanding," and the conditions causing the sense of colour are as imperceptible in themselves, as the physical action of light in the ethereal medium is, and as invisible as the atoms of the material mass or compound, and as the sense produces the sensible light, so it does colours under definite laws of existence and of action. Were the condition of colours to be recognised by the sense, that would be perceived and not its representative in colours, but the effects are precise in all the differences and indications, as much so as the tones of musical instruments. The same observation, of course, applies equally to taste, smell, touch, &c., &c., as to colour and sound. The genesis of the mind is very simple as perception—each perception or idea having its objective relation ; and, in recognising the common law of the transfer of the mental impression to the objective cause, can we be surprised at the idea of mind in nature, or, indeed, that all nature is mind. Under the expressive idealistic Pantheism, in the endeavour to make the incomprehensible and wondrous, and, therefore, "divine," conceivable to the human intellect as a reflex of its

comparatively limited self, quite incompetent in respect to what it can only contemplate with wonder, and as truly magical; or, in Prof. Tyndall's words, mystical and transcendental in its subtle action, correlations, and interdependence. What we do actually and directly perceive in one way or another is form, size, number, weight, solidity, fluidity, difference, similitude, order, harmony, conditions, and consequences, growth, decay, process, dependence, subjective and objective, and colours and light, indicating conditions, &c., and soon and all based on mathematical principles, even mind itself, and both in its prose and poetry, music, and logic. And, instead of the idea that we can know nothing of external nature, the fact is that all knowledge concerns external nature, and whose "natura naturam," or nature of its nature, is exhibited in all it does and is, and all we know of it, and all we call knowledge. And then we see that beauty is "in the eye of the beholder," wonder is knowledge broken off, and human design simply imitation with an application, and to suppose which of Nature itself must be mere childish and uncritical anthropomorphism.

And here I must pause in deference to those great and supreme deities fundamental to all things and infinite both, even the God-time, Author of authors, and the all-containing God-space, and will next proceed, with permission of the editor, to explain the difference in general function of the two brains, and my reason for believing that the so-called nerves or channels of sense are not so in fact. And lastly, I will endeavour to explain, so far as explanation goes, the nature and different phases and characters of clairvoyance, and how utterly beside the facts is the theory of instincts by accumulated and inherited experience, and following out the Duke of Argyll's view of the unity of nature in diversity, showing a real correspondence in mind, instinct, and the formative principle, animate and inanimate, running through the whole.

HENRY G. ATKINSON.

Poetry.

SPRING.

Swiftly from the southern zone,
Come, sweet Spring !
And mind thou com'st not all alone,
But from the o'er-sea with thee bring
Tenants for our woods and dells
To charm us with their mingled spells,
Beauteous Spring !

Quickly haste from tropic lands,
 Lovely Spring !
 Haste with verdure in thy hands,
 And with fragrance on thy wing,
 And let come thy train among,
 Choirs to cheer our hearts with song,
 Fair, sweet Spring !

Long it seems since thou art gone,
 Gladsome Spring !
 Long since thy bright weeds have shone,
 Long since thy bird-choirs did sing
 Songs of love in hedgerows green,
 Each to his own heart's fond queen,
 Joyous Spring !

Night by night I seek the star,
 Lovely Spring !
 That is e'er thy harbinger ;
 And my heart shall gladly sing
 When at eve that gentle beam
 O'er the eastern hill shall gleam—
 Star of Spring !

A.

THE LARK.

Green are the fields and the forests ;
 The lark warbles over the height ;
 The springtime is come in its beauty,
 With odour and colour and light.

The song of the lark again softens
 The hardness that winter did bring,
 And out from the depths of the bosom
 A sorrowful ditty we sing.

The skylark it singeth most sweetly :
 "What sing'st thou in trouble and fear ?
 "That is a carol, oh, darling,
 I've warbled for many a year."

"That sing I in beautiful meadow,
 My heart by no sorrow bestirred :
 Thy grandmother often, oh, darling !
 The song that I utter hath heard."

HEINE.

MARION'S TURN:
AN ENGLISH GIRL'S ROMANCE.

BY A. S. JAMES.

CHAPTER I.

I am Marion; and so "Marion's Turn" means my turn. At first, when I thought I would write this little story, I intended to call it "Marion's Romance"; but, after all, though it seems quite romantic to me, it may not seem so to other people; and, therefore, it is to be "Marion's Turn."

Now, to make you understand my story, I must tell you that Anastasia Gray, Emily Traynor, and myself were at school together; and as we all lived in the same village of Hazel, we became and remained very intimate friends. Anastasia is the daughter of the Rev. Silas Gray, the rector of Hazel; Emily is the daughter of Mr. Traynor, a farmer; and I am the only daughter of Mr. Layton. My father was a doctor. He practised in a neighbouring town for some years; but died, while I was still young, leaving my mother and myself in possession of a small annuity, which enabled us to live in a very modest way in the little cottage, that we took possession of, in the village of Hazel.

As I said, we three girls were very good friends. We were in the same class at school, and studied the same lessons together. As we grew older, we read the same romances, and built all sorts of castles in the air together. According to our prognostications we were all to be the heroines of astonishing romances in real life. Futures of the most marvellous sort pictured themselves to our imaginations. Anastasia's ideas generally took an especially startling form. Her hero was to be some Eastern prince, who had left his gorgeous palaces and submissive slaves to seek in the West a consort worthy of his love. He was to travel *incognito*, and to search city after city and court after court in vain; until, chancing to pass through the village of Hazel, he should become the captive of Anastasia's charms. Yet she was to be no easy conquest even for a prince: only after marvellous proofs of love and devotion was he to be permitted to bear his bride away to his Eastern home.

Emily Traynor's notions were rather warlike. Her lover was to come in the form of a victorious general, whose praises were to be the theme of all, and whose reward was to be the smiles and the love of Emily. I was more humble in my

thoughts. My darling idea was, that some renowned traveller should make me his bride, and take me with him on his journeys by land and sea. I revelled in the thoughts of the wondrous scenes I was to visit. The lordly Nile, the Amazon, the mighty forests and the boundless prairies expanded themselves before my imagination, and filled me with delight.

But we grew older and older, and though the heroines were ready, the heroes did not come. We were all at last in a fair way for becoming old maids. Each of us had reached the age of twenty-five, and not one of us was yet married.

At last Anastasia's prince made his appearance in the disguise of a new curate of her father's. Mr. Hope was a grave, sedate gentleman; and his somewhat grizzled hair showed that he had already reached the period of middle life. Anastasia became Mrs. Hope, and is now the mother of several little Hopes. She lives in the neighbouring village of Willows, the rectorship of which was obtained for her husband through her father's influence. Mr. Hope is a good, kind-hearted man. He is an affectionate husband to Anastasia; who would, probably, not have been so happy in the palace of an Eastern prince, as she is in the rectory of Willows.

The excitement of the wedding was over, two more years had passed by, and Emily and I were beginning to be almost reconciled to our lot, when a second hero made his appearance. Mr. Dawson was a merchant, who, having retired from business, came to reside in our village. He was at least fifty years of age when he changed the monotonous counting-house for the pleasures of rural life. Here he met with Emily, and determined to lay siege to her heart. She yielded to his persistent attacks, and he bore her away to his home—the prize of his victory.

Poor me! Year after year went by. Everybody looked upon me as quite resigned to my lot of old maid; and yet I was not resigned. Anastasia and Emily even, in the consciousness of their own triumphs, had ceased to hope for me; yet I had not ceased to hope for myself. Why should not my turn come as well as theirs? My turn did come. My hero, though he had so long delayed, came at last; and to tell how he came,—that is the purpose of my tale.

CHAPTER II.

One morning I was going into the village to do some domestic business. It was one of the first bright days of Spring, and I was noticing the budding trees and hedge-rows as I passed. I had not gone more than some two hundred

yards from our cottage, when I saw approaching me a gentleman, who appeared about thirty-five years of age, and a very pretty girl of about six. The gentleman seemed in bad health, and his face wore a sad expression. He was considerably above the middle height. His eyes and hair were dark; but the little girl, though she otherwise much resembled him, had blue eyes and light hair—like myself. They were both dressed in black.

When we met, the gentleman stood and, raising his hat, inquired the way to Rose Cottage. I noticed a strange look of surprise pass over his face, when he caught my eyes, though it was quickly repressed; and I was myself taken aback, for Rose Cottage was our home. I directed him to it, and he thanked me and passed on, while I proceeded to the village. But I overheard the little girl say, as they turned from me, "Oh, papa, is not that lady like poor mamma?"

These words, and the fact that they were going to our cottage, set my imagination at work. I should be denying my sex, if I were to say, I was not full of curiosity about them. Who could these strangers be? And what could they be coming for? My business in the village did not detain me long that morning. My shopping was soon done, and I was hurrying home again. When I arrived, instead of entering the cottage from the front, I went round by the little garden to the back of the house. I glanced in at the window of the front parlour as I passed, and saw that the two strangers were there with my mother. As I entered the kitchen, my mother met me, and told me, that we had visitors; a piece of quite unnecessary information to me of course. But she told me more. Her visitors were my cousin Henry and his daughter. To tell the story briefly, my mother's only brother, Frederick Hilton (for my mother had been Miss Hilton before her marriage), had early imbibed a passion for the sea, and to sea he went. He had afterwards settled in America, and married there. All his children had died young, except my cousin Henry, our visitor. He had entered into mercantile pursuits, and, while still a young man, had become a partner in the firm of his employers, and had married the daughter of the senior partner. About twelve months before his arrival at Rose Cottage he had become a widower, left with an only child, the second of our visitors. Grief, occasioned by his sad loss, and a serious illness, had broken down both his health and his spirits; and at last—being now wealthy through the death of his father-in-law—he had come to England, hoping that the change of scene and society would restore him to health. Of course we did not know all these circumstances. There

had been no correspondence after the death of my uncle Frederick ; and all we knew was that he had left one son, who was a merchant, and married. All the rest our visitor explained to us, partly on that day, and partly later. We were his only near kinsfolk in England ; and that is why he had come to visit us. He had arrived the evening before, and had put up at the village inn ; but not feeling well, he had delayed his visit until the following day.

Of course my cousin was invited to stay with us, and he accepted the invitation. But I am going on too fast, and must return. My cousin started when I entered the room, and looked quite astonished.

"Oh, we have met before !" he said, recovering himself, when my mother introduced me. "I little thought it was my cousin herself I was asking to show me the way to her home."

We all laughed very much at our odd meeting. Little Amy was delighted at the adventure. She made friends with me at once. I took her upon my knee, and she was soon as much at home with me, as if she had known me all her life. Moreover she had soon informed me that I was "so like her poor mamma." These words of course explained to me my cousin's look of surprise on first meeting me.

Before evening their luggage had been brought from the inn, and Henry and his daughter were installed as our guests

CHAPTER III.

I do not know how it was, but after a few days had passed over, it seemed to me, as if we had lived together all our lives ; and it required some effort on my part to realise the fact, that until so recently we had been quite unknown to each other. Henry was of a sedate and reserved disposition. He threw off his reserve with very few of those of our friends to whom we introduced him ; yet, when he did throw it off, he won the esteem of all. There was an attractiveness in his character and in his ways, that all who knew him well strongly felt. With his aunt and myself, from the first, he seemed naturally to take the place of a son and a brother.

We lived all together very quietly, yet, it seemed to me, very happily, for some months. Amy was a very affectionate and amiable child, and added much to the cheerfulness of our home. From the first she attached herself strongly to me ; whether from the resemblance she said I bore to her "poor mamma," as she always called her, or as an instinctive return for the affection I had conceived for her, I do not know. She clung to me more and more day by day, until at length we

became almost inseparable companions. She was never happier than when she could sit upon my lap, and talk to me in her childlike way. She would tell me of her old home, and of her mamma, who was gone to heaven "to live with the good God," she said. I perceived from her simple way of talking about her mother that Henry had been very careful to keep from her mind any of those dreadful ideas of death so common among children. And so she would prattle to me about her mamma, just as if she had gone away to a distant land, and as if the separation were quite a matter of course, to be followed by a very happy reunion. It seemed, too, as if I filled up in her mind, to a great extent, the blank occasioned by the loss of her mother.

"Would you like to stay always with me here in England, Amy," I said to her one day; "or would you rather return to America?"

"I should like best to stay with you, Aunt Marion," she replied, "if papa will stay too; and if papa goes back, you must come too. I will ask him to take you."

It seemed to me, that our affection for one another pleased Henry; at least his eyes seemed to express a quiet satisfaction, when he saw Amy so happy with me, as if he were grateful to me for the love I showed for her.

It was in the early Spring, early in April, when they arrived, and the weather being favourable, we were all of us very much out of doors taking walks in the pretty country district around our village. Of course Henry had been introduced to my two particular friends, Anastasia and Emily. They were delighted with him. One day Mrs. Dawson had accompanied us on a visit to the rectory of Willows. We had spent a very pleasant day there, and were preparing to return, when my two friends and myself were alone together for a few minutes in Mrs. Hope's room, while Henry was talking with Mr. Hope in the library.

"I think Marion's turn has come at last," said Mrs. Hope, looking slyly at Mrs. Dawson.

"Yes, indeed!" said Mrs. Dawson; "it looks like it."

For some moments I did not understand to what they alluded; but their meaning soon dawned upon me. At first the idea seemed preposterous. Such a thought had not hitherto at least entered my mind.

"Oh, Anastasia," I said, "how can you think of such a thing? Why it is barely a year since my cousin lost his wife, for whom he grieves so much! How could you think of anything so extraordinary?"

"Things more extraordinary than that have happened, Marion," said Mrs. Dawson, knowingly.

Here the conversation ended ; for we were ready to go, and Henry was waiting for us below.

As we walked homewards I was very silent. I could not help thinking of what Mrs. Hope had said. It caused my heart to flutter a little, I cannot deny. I did love Henry already, I knew ; but as my cousin, and as a good and amiable cousin too ; and to think of him as my husband seemed strange.

I was so occupied with my thoughts that I hardly noticed anything during our walk, until we came to Mrs. Dawson's home, which was about half a mile out of the village. We said good-bye to her, and were soon home.

CHAPTER IV.

What happy evenings we spent together, sitting by the fire-side, for the nights were still chilly ; or, later on, when the summer had fairly come, sitting in the little garden among the laburnums and the lilacs ! Amy went early to bed, so that we three grown-up people were alone together. And then Henry would interest us by telling of the places he had seen, or of the events of his life ; or he would talk of the authors he admired ; for he was a great and a discriminating reader. Sometimes he would read to us passages from his favourite authors. He possessed the art, which is not a common one, of reading well, though with a slightly American accent. Sometimes we followed the adventures of the amiable Pickwick, or we endured the miseries of the workhouse with *Oliver Twist*, or were on the tramp with *David Copperfield* ; at another time we were in the spirit-haunted island with *Prospero*, and *Mirando*, and *Frederick* ; or were listening to the passionate invectives of *Shylock*, or the sad, despairing soliloquies of *Hamlet*. Whatever he read, he carried us away to the scenes he was describing ; so entirely did he identify himself with his author.

At times, too, Henry would explain to us his ideas on political, social, and religious questions ; and though his ideas were often new and strange to us, they were always striking and interesting.

His opinions on the war between the Northern and the Southern States of the Union were very decided. My mother and I, like many people in our village, had sympathised with the South during the struggle ; but when Henry spoke of the curse that slavery was to the country, of the degradation and infamy of the system, and told us of the resolve, that had filled the hearts of all the best and noblest in the country,

that the blot should be washed away from their escutcheon at whatever cost, whatever sacrifice, the very strength of his feelings upon the subject carried us away with him. Though generally so quiet, and apparently so impassive, his feelings were deep and strong, and in this matter his whole heart was engaged. He had held the command of a volunteer regiment in the war, and he described to us very graphically many of the events in which he had taken a part. One incident interested us greatly. There was in his regiment an Irishman, to whom, when in trouble, Henry had shown some kindness. During a skirmish, a Southern soldier, unperceived by my cousin, was about to pierce him with his bayonet, when the Irishman rushed forward and saved his benefactor, but at the cost of his own life; for the bayonet aimed at Henry pierced his own breast. All he could say before he died was—

"You'll look after Mary and the childer a bit, your honour!"

The tears stood in Henry's eyes as he related this act of devotion; and in mine too.

(To be continued.)

NOTES ON DR. GALL'S SKULL.

BY L. N. FOWLER.

In the year 1867, while in Paris, I visited the phrenological collection made by the discoverer of phrenology, and given by him to the institution in whose keeping it now is. Among the skulls was his own—bequeathed along with the rest. The skull is average in size, measuring about 22 inches in circumference above the ears. It is firmly knit together by the sutures, and strongly marked though very uneven in form. It is large at the base, and rather broad through from ear to ear. The cerebellum must have been particularly large. The head was short but high, and much longer from the orifice of the ear forward, than from that point backward. His social brain was not, according to the form of his skull, so strongly marked in his character, as his intellectual or moral brain. Amativeness must have been a strong impulse, but he was not particularly domestic and social in an ordinary way. Continuity was weak. He could not have been particularly plodding or connected in his thoughts and feelings; yet, with his predominant Firmness and Causality, he could hardly help being persevering, and, when necessary, abstract in his power of reasoning.

His broad head indicates great force and energy of mind, good appetite and capacity to enjoy life. Acquisitiveness and Secretiveness were not among his strongest qualities of mind, but Cautiousness was larger and had more influence, and, together with his large Causality, must have aided him much in giving prudence and carefulness to his movements. Approbativeness was rather large, giving a due amount of ambition, desire to please, and sense of character. Self-esteem was not so large. He could only have had the dignity which his moral sense and philosophical intellect gave him. He could not have been very dignified, proud, or dictatorial in his ordinary intercourse with society. Firmness and Conscientiousness were very marked in development. His head was high and broad over the ears. These two organs must have had a powerful influence on his character, rendering him very tenacious in adhering to what he considered right, and making him very careful to be just in his observations and correct in his statements. They would also aid to give him honesty in dealing with others and integrity of speech, as well as general stability of character.

Hope was fully developed, and must have stimulated him to action, and sustained him in times of trial and opposition. Spirituality and Veneration were the least of the moral organs, and had a secondary or third rate influence. He may not have been a sceptic, yet he preferred to follow his observation and reason rather than to believe without them.

Constructiveness, Ideality, and Imitation were fully developed, but not large or leading faculties. Sublimity, however, was large, and helped to give him a sense of the grand and sublime. He could not be an expert either in the use of tools or in writing poetry, but must have shown considerable skill in argument, his reasoning brain being so strongly developed. He had a full development of Mirthfulness, and no doubt could enjoy wit of the kind that illustrates an idea, but must have been rather a clumsy joker. The more natural and spontaneous the wit the better he could have appreciated it.

The skull indicates height and breadth of head, especially in the upper portion. His reasoning brain greatly predominated, and Causality being the largest of all the intellectual organs, must have had a leading influence; consequently he was able to think, originate, understand, explain, and go to the foundation of things, and, as far as possible, deal with first principles. His observations were guided by his powers of investigation; hence he saw intelligently what he saw at all.

Eventuality, Time, Tune, Order, Colour, Calculation, and Locality were the most defective organs of the intellect, as

indicated by the skull, hence he would be defective in memory of events, places, dates, colours, and figures, and careless in his mode of doing things. His whole mind must have been led captive by his powers of investigation, and he must have become so thoroughly in love with abstract ideas as to detract from his practical, manipulating, arranging, and systematizing powers. He had not so much intuition as investigating power, and would have more confidence in his reason than in his other unaided powers. In speech he must have been direct, forcible, and to the point, rather than fluent and ornate, being more anxious to speak the truth than as to the way of speaking it.

JACK AND GILL.

This is a tale to show how true it is that cats and simpletons often fall on their feet where clever ones would fall—otherwise. It is about a lad called Jack, who was a shrewd sort of fellow in his way, and a damsel, not so shrewd, as you will presently see, who was shortly to become his wife. One day while Gill was milking the kine, for she was a farmer's daughter, one of the thoughtless things upset the pail upon her clean apron, and she started crying. Hearing the to-do Jack came in and asked her what was the matter.

"Th' kēa's nastied me brat, an' a'm vext," she answered.

Then her mother and father came in, and seeing Gill crying, they set to work and cried too. It so annoyed Jack to see the three of them blubbering about such a trifle that he said he would not wed Gill until he could find three sillier folk.

Now the lad liked the girl, and so he set off at once to seek three greater simpletons. Presently he came to a man who was catching sunshine in his hands and running into the barn with it, and he asked him what he was doing. The man answered:—

"A'm carryn' sunshoin into th' bern to droy me corn."

Jack said he could tell him a better way than that: he was to bring his corn into the sunshine and it would soon dry. The man scratched his poll as though something was tickling him, and said he had never thought of that before. He began to express his thanks, but Jack said he needn't do that, as he had done him a good turn too, although he did not tell him in what way. So he went on his way with a lighter heart than formerly, for he saw there were more silly people in the world than he had thought.

One day, being very tired, he sat down in front of a farm house. Now it was a thatched house, and there was some grass growing out of the thatch. By and by a man came out of the shippen with a cow, and tried to get it on to the house to eat the grass, but the cow was too heavy for him to lift, and he was in a fix.

Jack "chunk" a bit, as they say in his part of the country, that is he laughed internally, and then said to the man that if he would

climb on to the roof himself, he might throw down the grass to the cow, and so get out of his difficulty. The man did not seem to be very thankful for the suggestion, and said he might have thought of it himself if he'd only been to school.

Jack trudged on his way, light of heart, and after some days' journeying, came to a house where, being dry, he thought he would ask for a drink of water. As he was drinking it, he saw a man trying to jump into a pair of breeches that were hung up to a beam. Every time he jumped he banged his head against the ceiling. Jack laughed outright at this thick-head, but as soon as he could get his wind he said :—

"A dunno' moind tellin' thee a gainer wëa t'an that'n : just sit thee dain in a cheer and poo 'em on."

The clown rubbed his head for a minute or two, and then said :—

"That'll be a deal gainer, lad ! Why didn't tell'un afore ?"

Having now found three sillier folk than Gill and her father and mother, Jack set off home, and married the girl, and took the farm of the old folk. When he had bought everything needed, he had ten shillings left ; so he said to Gill :—

"Put this bye agenst oud Winter comes," and set off to work.

While Gill was busy about the house, an old beggar came to the door ; and she asked him if his name was "Oud Winter," and he said "Aye" it was. So Gill gave him the ten shillings.

When Jack came home from work, his better half told him that "Oud Winter" had been, and that she had given him the money. Jack was vexed and told her she was the biggest simpleton that he had yet seen ; but he could not help laughing for all that.

In due course the cow calved, and Jack told Gill to rear it, and set off to his work. When he came home he found the calf reared on a pitchfork against the barn door. You may fancy how angry he was, and how he put Gill down for all the silly things he could lay his tongue to. Then he said :

"Anyhow, a'll hev a bit wi' every cabbitch i' th' garden" (meaning to salt it).

When he came home from work again, he saw a lot of dogs about, and asked Gill what they were doing there. She said they had come after the calf, which she had cut up, and put a piece of on every cabbage in the garden. Jack, as you may imagine, was pretty well beside himself with vexation ; and the worst of it was that he went and got drunk, which, of course, did not mend matters.

But he liked Gill all the same, and so, when he had come round a bit, he said :—

"Ne'er moind, wench ! we've getten a pig yet ; an' we'll fatten it on mēal and waiter."

Thus saying he went to his work, and worked as hard as ever, and when it was time, he went home, as glad as ever to see Gill again. But fancy his mortification when she came running to meet him, and said :—

"Jack, a've put th' mēal i' th' well an' put th' pig in too ; an' it'll soon be fat !"

Jack didn't say much this time, but made straight for the ale-house, and as Gill prepared to follow him, he said :—

"Poo th' door after thee;" and she pulled the door off its hinges, and dragged it after her.

Now Jack meant to run away and leave his simpleton of a wife, but she stuck to him. At night, no better lodging offering itself, they climbed up a big tree out of harm's way; Gill pulling the door up too. Then, as they were lying upon the door resting, some robbers came under the tree to count their money, and one of them said :—

"If it wor to thunner a shud be reet skeered;" and the others said they would too.

So Jack and Gill began jumping on the door, and frightened the robbers away. Then they came down the tree, and found that the robbers had left them a nice handful of money, which made up for all their losings, and so they were able to go home and live happy ever afterwards.

THE "JUMPERS" OF MAINE.

Dr. George M. Beard, in a paper read before the American Neurological Association, records some curious facts in regard to a singular class of persons whom he met in the region of the Moose-head Lake, Maine, and who are known in the language of that region as "Jumpers," or "Jumping Frenchmen." These individuals are afflicted with a peculiar nervous affection which manifests itself by sudden and explosive movements of the body under the influence of external excitation, by a passive submission to orders authoritatively given them, and by an irresistible desire to imitate the action of others. The person thus afflicted jumps at the slightest sudden touch, and when an order is given him in a loud, quick tone he repeats the order and at once obeys. If, for instance, on the shore of a river he be ordered to jump into the water, he exclaims "Jump in," and at once executes the order. If he is told to strike one of his companions, he exclaims "Strike him," and the act follows the words.

Dr. Beard made the following experiments with one of these persons, who was twenty-seven years of age :—While sitting in a chair with a knife in his hand, about to cut some tobacco, this man was struck sharply on the shoulder and told to "throw it." Almost as quick as the explosion of a pistol the knife was thrown and stuck in a beam opposite; and at the same time he repeated the order, "Throw it," with a certain cry as of terror or alarm. A moment after, while filling his pipe, he was again slapped on the shoulder and told to "throw it." Immediately he threw the pipe and tobacco on the grass, at least a rod away, and with the same suddenness and explosiveness of movement as before. Whenever this man was struck quietly and easily, and in such a way that he could see that he was to be struck, he made only a slight jump or movement; but

when the strike was unexpected he could not restrain the jumping or jerking motion, although the cry did not always appear. Like experiments were made on other individuals of different ages with the exhibition of the same peculiar phenomena.

Dr. Beard classes this "jumping" as a psychical or mental form of nervous disease, of a functional character, its best analogue being psychical or mental hysteria—the so-called "servant-girl hysteria," as known to us in modern days, and as very widely known during the epidemics of the Middle Ages. Like mental or psychical hysteria, the jumping occurs not in the weak, or nervous, or anæmic, but in those in firm and unusual health; there are no stronger men in the woods, or anywhere, than some of these very "jumpers." Dr. Beard regards the disease as probably an evolution of *tickling*. Some, if not all, of the "jumpers" are ticklish—exceedingly so—and are easily irritated when touched in sensitive parts of the body. It would seem that in the evenings, in the woods, after the day's toil, in lieu of most other sources of amusement, the lumbermen have teased each other by tickling and playing and startling timid ones, until there has developed this jumping, which, by mental contagion, and by this practice, and by inheritance, has ripened into the full stage of the malady as it appears at the present hour. The malady is fully as hereditary as insanity, or epilepsy, or hay fever. Dr. Beard in four families found fourteen cases, and by the study of these it was possible to trace the disease back at least half a century. The malady seems to be endemic, confined mainly to the north woods of Maine and to persons of French descent, and it is psycho-contagious, that is, can be caught by personal contact, like chorea and hysteria.

Facts and Gossip.

THE note in last month's issue respecting the prophetic power of phrenology has created not a little interest. Here is another fact equally striking. When Mr. Fowler was in Sunderland nine years ago, he examined a boy of twelve, and described him as possessing extra gifts for accountancy. He was put to that as a profession; and the other day, when Mr. Fowler was again in Sunderland, the father called upon him and told him that his son was noted as the best accountant in that town.

AN American correspondent gives the following instance of animal reasoning:—"A lady, a friend of mine, was at one time matron of a hospital for poor women and children, which was maintained by subscription. One of the inmates was a blind girl, who had learned to feed herself, and at meal times a tray containing her dinner was placed on her knees as she sat in a comfortable chair for her special convenience in feeding herself. One day while she was eating, the pet cat of the establishment placed herself before the girl and looked

long and earnestly at her—so earnestly, that the matron, fearing the animal meditated some mischief to the girl, took her out of the room. Again the next day, at the same hour, the cat entered the room, but this time walked quietly to the girl's side, reared herself on her hind legs, and noiselessly, stealthily reached out her paw to the plate, selected and seized a morsel that pleased her, and, silently as she came, departed to enjoy her stolen meal. The girl never noticed her loss, and when told of it by her companions, laughed very heartily. It is evident that the cat had satisfied herself that the girl could not see, and by a process of reasoning decided she could steal a good dinner by this practical use of her knowledge.

By an edict of the communal council of Unterhallen, in the Swiss canton of Schaffhausen, young persons under fifteen years of age are forbidden to smoke tobacco or cigars, whether in the public streets or at home. The journal of the Society "Contre l'Abus du Tabac," in which this regulation is published, contains a marvellous story, quoted from the "Courrier de l'Escaut," of a child of only three years of age, who, being recently admitted to a London hospital, was found to be suffering from paralysis caused by a habit of smoking continually. Unfortunately neither the name of the hospital nor that of this "fumeur précoce" is given.

IMPERFECTION of vision in railway employés has formed the subject of legislation in the Massachusetts Representative Assembly, to which the Railway Company has reported a bill to the effect that "no railroad company shall employ any person in a position requiring the distinguishing of form or colour signals, unless such person within two years next preceding has been examined for colour-blindness, and other defective sight, by some competent person, and has received a certificate that he is not disqualified, by reason of any defect of vision, to perform the duties of such a position."

At a recent *soirée* in the Paris Observatory, M. Trouvé showed a live fish with its body lit up from within by the polyscope, a minute form of which, with conducting wires passing to the hands of the operator, the animal had been caused to swallow (comfortably, let us hope). The whole body became transparent in the dark, so that the vertebrae could be counted, and all details examined.

THAT "phrenology is out of fashion, and only springs up here and there under exceptionally favourable circumstances," is the dictum of one of the writers of the *Weekly Dispatch*—we will not say of that paper itself, for we usually find it truthful and trustworthy, and not accustomed to hazard opinions about things of which it is ignorant. We say "ignorant" advisedly; for the man who can make such a statement does so from simple and egregious ignorance. Phrenology numbers its millions of believers, or we should say "knowers," in this country, who apply it in every-day life, as no system of mental

philosophy was ever yet applied. But the funniest part of the assertion is that which makes it "out of fashion." Is then the *W. D.* guided by fashion? We know there are people who would as soon be out of the world as out of the fashion; but we never yet knew a man of intelligence who judged of a thing's worth or importance by its being in or out of the fashion. Some of us have heard of times when honesty, religion, and even liberty were out of fashion. Is common sense going out of fashion too?

THE lecture by Dr. Spurzheim which we give this month is the first of a course delivered in London in 1831-2. It is our intention to reproduce the whole of them, with such notes as may seem called for by the present state of our knowledge of phrenology, with a view to aiding the studies of those who are new to the subject.

FOR mothers, while nursing, to have recourse to alcohol in any form is now scientifically proved to be a mistake, it being admitted by many members of the profession that nine-tenths of the cases of convulsion are attributable to alcohol on the brain, transmitted from the parent; and though beer may have the effect of increasing the quantity, it has such a deteriorating effect on the quality of the milk as to be almost incredible. Whatever excuses may be urged for the taking of alcohol by adults there can be none for giving wine or beer to children, and all who do so are guilty of most culpable ignorance.

It is an indispensable condition of success in family education that the parent should become the first and truest friend of the child. This possibility and duty is a parent's great privilege, too often unknown, and yet it embraces the whole future of the child. It is through the love and confidence that exist between them that durable influences are exerted. If the child naturally confides its little joys and sorrows to the ever-ready sympathy of the mother, if it grows up in the habit of turning to this warm and healthful influence, the youth will come as naturally with his experiences and plans to the parent as did the little child. The evils of life, which must be gradually known, will then be encountered with the aid of experience. The form of the relation between parent and child changes not its essence. The essence of the relationship is trust—the fact that the parent's presence will always be welcomed by the child, that in work or in play, in infancy or in youth, the parent shall be the first natural friend. It is only thus that wise, permanent influence can be exerted. It is not dogmatism, nor rigid laws, nor formal instruction that is needed, but the formative power of loving insight and sympathy.

THE energy at present being displayed by food reformers is greatly needed, and cannot but be conducive of good, at least if there exists amongst the people that amount of general intelligence with which they are generally credited. In spite of the repeated attacks made

upon oleomargarine, or sham butter, it continues to increase to an enormous extent, and our large towns are so deluged with it, that it is next to impossible for poor people to get pure butter, not so much for the reason that genuine butter cannot be had, but that retail dealers make so much more profit on the filth they purchase as oleomargarine and sell as butter. In the United States, the output of sham butter is computed to reach upwards of fifty-five thousand tubs weekly, each tub averaging forty-five pounds' weight of the stuff, and the mass of it is prepared for the English market. This is one result of free trade, but it will be to the disgrace of English intellect if the thing be allowed to continue.

WE have heard much of late of the increase of Trichinosis, especially in the States, caused by eating diseased pork. But the disease may just as likely be conveyed to human beings by the gross adulterations used in the manufacture of butter and cheese. The former is adulterated with lard and grease, which, we are told, are in many cases taken from the places where hogs die of diseases. In other cases, the so-called butter is nothing but lard mixed with other greasy substances. Is it a bad thing for a country when it has to depend on other countries for its food, and we should do well to pay more attention to Mr. Ruskin's warnings, and go in for St. George, and fruit and vegetable culture.


THE notion that appetite is a low degree of hunger, and hunger an intensified form of appetite, does not seem to be borne out by facts. The two desires or longings are different in their nature. Appetite is the craving of the apparatus of taste, and sometimes of the digestive organs; while hunger is the demand of the organism as a whole or of some of its parts of food. Use the words appetite and hunger how we may, there are actually two needs to be expressed, and much mischief arises from confounding them. The one cry for food which we call appetite is an affair of habit or caprice, and may, for a time at least, be stimulated by appealing to the sense of taste, or promoted by certain cordials and stimulants; but, looking at the matter from a physiological point of view, it is difficult to see what we gain by exciting the organs of digestion to take food unless the system is in a condition to receive it. The rational mode of procedure would seem to be to await the expression of a need in the system—in short, to look to hunger rather than appetite as an incentive to the act of feeding, instead of exciting the palate and sense organs to take food when we have no organic reason to suppose that there is an inner need of it.

WATER poured down a dry pump often sets it to work to bring up water of its own, so suggestive reading sets the mind in motion on its own account.—*Spurgeon*.

THE
Phrenological Magazine.

JUNE, 1881.

ALEXANDER III., EMPEROR OF RUSSIA.

HE photograph of the new Tsar indicates a marked outline of head and a distinct character. It has fallen to his lot to be invested with the greatest political power of any man living, and to rule with more despotic sway more human beings, covering more territory, than any other man in supreme authority ; and yet there is not another man living whose life is so unsafe. He breathes as though every breath might be his last ; he dare not go out into the street alone ; his person is continually surrounded by three lines of soldiers, and yet he is not safe. And although at the head of the government, and supposed to have all power, and the desire to do what is right, and yield to the urgent demands of his people ; yet he is almost powerless to act, because to swerve at all from the course pursued by his ancestors and the rules of government hitherto pursued would be to acknowledge that the Imperial Power had been in the wrong, which is too humiliating for a Romanoff to think of. So much is needed by way of improving the government and benefiting the people, that it seems almost impossible for one man to produce the necessary change. At least Alexander III. does not appear to be equal to the task, although said to be disposed to tread the path of progress. Such a predicament as he is in does not often fall to the lot of man. It will be interesting to watch his course, and see how much he moulds, and how much he is moulded by his circumstances.

His photograph, taken by Maull and Fox, of London, indicates a man well preserved, full of physical strength and vital force, and well qualified to enjoy life and its luxuries. There is a favourable proportion of head, face, and body, with a superior physique. The fault of his bodily condition is that he has a surplus of vitality, the result, probably, of not having

enough Destructiveness and force of character to work off what his superior digestive power secures to him ; and there is always a danger, that if not used up in actual labour, mental or physical, it will run to licentiousness.

His head is particularly high over the ears, in Firmness and the crown of the head, indicating ambition, sense of position, pride of character, and desire for distinction and personal influence. His head is not as broad in proportion as it is high ; hence he has more of manliness, pride, ambition, and will-power than of the force, executiveness, energy, courage, selfishness, and hardihood to put into execution his will or properly sustain his pride and ambition. The restraining powers are naturally greater than his force and courage, so that he would prefer to avoid danger than fight his way through it. In this respect he is inferior to his ancestors, Peter the Great and his grandfather, the Emperor Nicholas ; for both had heads wide between the ears, as well as high in the crown and over the ears. Acquisitiveness and Secretiveness are not large, and cannot enter largely into his natural character. Cautiousness is larger, and must have a strong restraining influence.

The moral brain is favourably developed, and has its modifying influence, helping him to be as honest, moral, pious, and kind as his surroundings will allow. His head also indicates fair ingenuity, taste, imagination, versatility of manner, and sense of humour. The perceptive intellect is strongly developed, and must aid much in giving him practical talent and a correct perception and estimate of things and their conditions and uses. Individuality, Form, and Size are quite marked in development, and must have a distinct manifestation in art and scholarship, as a marksman, and as a close observer of men. His scientific abilities appear greater than his mathematical, and the literary qualities are quite equal to the philosophical. His conversational and linguistic talents are distinctly represented, by a full, lively eye, with large Form and Size.

The forehead is high and rather broad, a form which is favourable to great sagacity, descriptive power, practical judgment, and general comprehensiveness of mind, without special wit or ability for abstract reasoning or invention. A mind with such a brain may be willing to make all the changes necessary to be on a par with the more liberal institutions of other countries, but surrounded as he is by so many time-honoured impediments, it is beyond the power of his genius, tact, and courage to overcome them all and meet the demands of his people. The amount of reform, therefore, that takes

place in Russia during the present Tsar's reign will depend a great deal on the pressure that is brought to bear upon him.

There is no physiognomical indication of any lack of affection and love of family, but the indications are rather the other way, and he will probably be characterised for more than ordinary domesticity.



ALEXANDER III., EMPEROR OF RUSSIA.

The Romanoff head is of quite a distinct type in many respects, as I can testify from personal observation, having some years ago examined the heads of a number of the Imperial family. Among them were several of the younger members of the family, but I do not remember whether the present emperor was among the number.

L. N. F.

THE NATURAL HISTORY OF THE JEWS.

Circumstances have of late tended to bring the racial characteristics of the Jews into more than common prominence. We have seen in Germany, and, to a lesser extent, in Russia, a feeling of deep hatred move the masses against them. In the former country it was with difficulty restrained from leading to actual violence, if, indeed, the danger has yet passed. In the over-burthened Fatherland the cry is that the Jews monopolise the sources of wealth, and that they crowd the professions, and other pursuits of peace and profit. The charge is undoubtedly true to a large extent, and the reason of their so doing is worthy of examination. We can only arrive at a thorough understanding of the character of the Jew through the study of his history. We know what that character was in ancient times: one based in that animal force and vitality which they possessed in common with all the most dominant and self-assertive races, with the superaddition of an unusually aspiring and devotional tendency. That they were a firm, unbending people we learn from the epithet of "stiff-necked" which is so frequently applied to them in the Bible. These were among their leading characteristics, and that they have retained them their history in modern times abundantly proves. No people have been more true to their racial instincts—to give them no higher name—than they have. In prosperity and in adversity they have manifested the same perseverance, persistency, and unbending adherence to purpose and principle. The purpose and the principle had in view may not always have been of the highest, although they have probably, on the whole, compared favourably with the common material of such human commodities. But this very persistence necessitated the development, or the evolution, of other, and perhaps less noble qualities. For ages they were aliens in every country in Christendom, and their activity was confined to the lowest ranks of trade and commerce. They took up the most neglected and despised industries, and because the profits accruing from them were small, they had to live meanly and spare parsimoniously. For the reason, moreover, that if they were known to possess wealth they were liable to be "bled" by their Christian sovereigns, they were, in the like manner, stimulated to avoid any ostentation of riches. Out of this inordinate development of acquisitiveness and secretiveness, together with the sharpening of the intellect incident to their life of

danger and necessary enterprise, grew the chief traits of the modern Jew.

In this way nature prepared him to take his revenge for the ages of oppression he had suffered, as nature prepares all enslaved peoples in the long-run to turn the tables on their oppressors ; because their very hardships tend to the growth of those intellectual and moral qualities that in the end ensure mastery. The Jew, by his long schooling in adversity, became avaricious, painstaking, cunning, artful, industrious, cautious, apt in judgment, versatile in talent, and exceedingly shrewd in his knowledge of men. He was obliged to be long-suffering under wrong ; no wonder if he became revengeful. Not daring to hope much, he was compelled to be more circumspect and patient. These were the self-preserving qualities which the "struggle for existence" evolved in the despised Jew ; if he did not develop much benevolence there is small blame to him : he received none.

Such is, in brief, the "natural history of the Jews," about which we may read so many learned, but, for the most part, utterly misleading articles in German publications. A treatise of the kind—one which has created more than ordinary interest—is before us. It is by the director of the Anatomical Museum of St. Petersburg, a German gentleman, bearing the familiar name of Schultze, who has discovered and accumulated an overwhelming array of facts which go to prove that the Jews (that is, the few dead Russian and Polish Jews whose bones had the honour of being thus investigated by the doctor) have "short extremities," "long trunks," "sharp noses," "lean bodies," "x-shaped legs," &c., &c.

He furthermore assures us that the Jews are cowards—more passive than active, as he adds in the way of a modifying explanation—a state of things which would not be surprising in a race that has been hunted down most cruelly, and outraged most shamefully in all "civilized" countries for eighteen centuries, and is thus treated in Asia, Eastern Europe, and anew in Germany at the present day. It should be remembered that in the last-mentioned country there are hundreds, if not thousands, of Jews, who have bravely fought for their ungrateful "fatherland" on many battle-fields, many of whom are decorated with the "Iron Cross" for their courage and bravery.

Dr. Schultze goes on with his peculiarly scientific description, and ventures the statement that, as a counterbalance to their great mental activity and ability, "they have never been productive, either in *cultivation of the soil*—which they have not been allowed to cultivate until very recently ; "or in

trades”—which they were, until lately, strictly forbidden to learn and to follow; “or in *science* and *art*.”

The last portion of this promiscuous statement is so false, that we cannot acquit the author of the charge of being wilfully deceitful. Apart from the many living artists, physicians, composers, and authors (so illustrious an example whereof has just passed away), and eminent men in general, we need only mention the names of Spinoza and Moses Mendelssohn, the philosophers; Felix Mendelssohn and Meyerbeer, the composers; and Ricardo, the political economist, to show how utterly misleading is Herr Schultze's statement. Any shortcomings they exhibit in this respect may be accounted for by the fact that they have until very lately lacked the full liberty and freedom from the adverse influence of race prejudice, to give us their due proportion of great teachers of humanity. That they have produced eminent financiers—money-lenders—out of all proportion to great names in other departments, is explained by a contrary reason: it was for generations the only really remunerative sphere wherein they could exercise their talents, and at the same time secure power.

Professor Karl Vogt, of Geneva, the eminent naturalist, has cleverly illustrated the prejudices now taking such ugly practical expression in Germany, the land inhabited by a “people of thinkers.” He remarks:

“It is said:

“‘Jews cheat!’ Well, if they do, why are you stupid enough to let yourselves be cheated?

“Further:

“‘The Jews have absolute control of the public press!’ May be, it is so; but why have you been foolish and simple-minded enough to let it pass into their hands?

“Again:

“‘Jews reign supreme in commerce, on exchange, and in money-matters generally!’ Very probably this is exactly as you say; but how could such a small minority do that, if they were not men of superior intelligence, quick-eyed, and sharp, and if they did not work with enormous energy and assiduity?

“And again:

“‘The Jews control more offices, count among their ranks more members of the professions (lawyers, physicians, artists, journalists, &c.) than they should in proportion to their number!’ No doubt that is so; but, considering how much they are disliked by some governments, is this not the most conclusive proof that they are more capable, or, at least, know how to employ their abilities to better advantages, than others?

“And lastly:

"The wealth of the people will pass into their hands exclusively in a short time!"

"Very likely it will. For they are temperate and saving; they work and transact business with unremitting diligence, day and night; they are very fond of their families, and, as a rule, lead a happy, domestic life. Why should they therefore not grow and prosper?"

"Go and do likewise!"

The great *savant* concludes by declaring that the agitation in Germany is nothing but a manifestation of rage, emanating from those who are on a lower level intellectually than the race attacked—because they are civilised for many generations less than their victims.

It is doubtful whether the latter argument is fully justified, but that the former is true is best proved by the fact that all the enlightened men prominent in sciences and arts, in politics, and in the professions generally, have strongly denounced the persecution of the Jews in Germany in unequivocal terms. It may be safely said that only the *plebs*, high and low, stupid and malevolent, promote this most contemptible agitation.

There is nothing more disgraceful, especially to Christian people, than these race hatreds and national antagonisms. They retard progress, and put back the millennial age; if such age there is to be. So long as it is necessary to offset greed by greed, cunning by cunning, force by force, and to repay hatred with hate, so long will the "thousand years of peace" be the futile dream of poets, whose more highly-developed brains foretell the possibility rather than their songs the present prospect of such a state of perfection. Future millenniums are in the blood of humanity, and they will probably remain there until less stimulus is given to the development of the selfish propensities, and more to the moral faculties. While people are obliged to throw the whole energy of their natures into self-preservation, they will manifest those faculties that minister to self-preservation in a pre-eminent degree, while those that make for universal brotherhood will stand less chance. You cannot make the lion into the lamb in one generation; nor can you change that mental bias of the Jew which ages of oppression have given him in the same period. Gradually, as he feels the odds less against him in the race for life, his phrenology will change, and benevolence, principle, and trust may take the lead of acquisitiveness, policy, and timidity, and indomitable will and perseverance be directed in higher channels than those of mere self-aggrandisement.

E. P. M.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE II.

You will perhaps forgive me for bringing again before your notice some points which I mentioned on the former evening, but as they are important I am anxious they should be well understood. I spoke of the constitution of the body, or the temperament, and its influence on the manifestations of the mind ; but that in phrenology we admit the influence of the temperaments only as far as they affect the degree of activity of the intellectual powers, not as giving origin to them. I have only spoken of the brain in a general way—that it is the organ of the manifestations of the mind. I hope you do not think that I admit the brain to be the organ of the mind from the few proofs I have already adduced ; many more will hereafter be brought before you. However, let it be understood that in phrenology we consider the brain not only as necessary to the existence of the intellectual faculties, but also that its degree of development exercises a considerable influence on the manifestations of the mind. You will recollect what I said on this subject, that the brain, as to its absolute size, is not sufficient to measure the talents. You cannot go from one individual to another, and say, your head is larger than your neighbour's, hence you have more talents. Nor is the proportionate size of the brain to that of the body indicative of the strength of the intellect ; and I also said that the measurement of the forehead with the face failed in its object, for we cannot by it indicate the different degrees of talent.

I shall proceed now to another principle in phrenology, namely, that there is a plurality of mental powers, and that every faculty is manifested by a peculiar organic apparatus.

The doctrine of the plurality of powers is very ancient. I do not know any system of philosophy which has been satisfied with one single power of the mind ; all the founders of such systems have thought it necessary to admit several powers. All of you know that the understanding and the will are commonly spoken of in treating of the mind ; hence we find two general powers at least. Have philosophers been satisfied with the understanding and the will ? No. They have subdivided these into memory, judgment, imagination the association of ideas, &c. ; therefore, I repeat, that the idea of the plurality of the mental powers is not new, but as ancient as philosophy. Physiologists have also, in observing the

functions of various organs of the body, assigned certain feelings to these organs, and to the brain they have assigned some as well as to the rest. Even so early as in the twelfth century, and particularly in the fifteenth, we find individual powers not only ascribed to the brain, but marked upon the head, according to the prevailing doctrine of the schools—as common sense, memory, and so on. My object is here to mention that the doctrine of the plurality of the powers of the mind had been adopted by ancient philosophers, but no determinate powers had been assigned by them.

How shall we proceed now to ascertain the functions of the several parts? I am sure that every one who reflects upon the mental manifestations must feel convinced that it is impossible to ascribe them all to one power of the mind. Do you think that one person is capable of doing everything with the same degree of perfection? The mind requires the medium of the external senses by which to hold communication with the external world; there are eyes to see, ears to hear. Now we see that sometimes individuals are deprived of one or more of these senses, yet the others remain; a man may become blind, yet he will continue to hear, and may we not from these occurrences infer that there is a division of the senses? We see also that the mind, in like manner, is sometimes deprived of certain of its manifestations, and yet the others remain; a man may, for instance, be insane on some points and yet remain in full exercise of the intellect on all other subjects;* hence, I think, that we must allow, not only a plurality of powers, but also that these powers are dependent on a plurality of organic parts. Shall we turn to the dissection of the brain to explain its functions? we certainly know more of the structure of the brain than was formerly known: can we learn the functions of the brain by that dissection? I have seen many individuals extremely anxious to know the structure of the brain; but a knowledge of that alone cannot teach the cerebral functions. Can anatomy show the functions of any part? Look at the olfactory nerve; can you recognise its function? You may see the optic nerve as it passes to the eye; you may see its figure, its colour, its density, but can you learn from this observation that it is destined to receive the impressions of light? Look again at the muscular fibre:

* The development of the various faculties in children, too, exemplifies in a striking manner the plurality of powers. The infant early begins to observe, but it is some time before it learns to distinguish the difference between objects and persons. But soon it begins to notice differences of form and size, and even colour, but this later. It is some time before it takes cognisance of numbers; and all know how much various intelligence a child displays before it learns to talk. If the mind were all one organ there could not be this difference.

you may observe its vascularity, its colour, but can you learn from these qualities that the muscle is contractile? No; it is to physiology we must look for the knowledge of functions, however accurate our knowledge of structure may be. Anatomy is useful to physiology, but anatomy without physiology is dead. Anatomy can no more show the functions of the brain than it can those of other parts of the body; these can only be arrived at by a careful observation of nature. Anatomy, however, can never be in contradiction with physiology. If I could show that the structure of the brain is in contradiction to the functions ascribed to it by physiologists, then I would say phrenology is altogether destroyed. You will recollect in the last of the hydrocephalic heads which I showed to you on the last evening there was an immense development of skull, but it was distended by water, and the brain lay at the bottom. In some other cases the brain is distended like a bladder, the water being within the ventricles. Now, if anatomy could not show that the structure of the brain admitted of such a change, there would be a great imperfection in our knowledge; but when anatomy does show that such a change can take place, anatomy will be in harmony with physiology. To arrive at a knowledge of the functions of the brain we must observe them during life, as well as the functions of other parts of the body.

Persons have proposed to mutilate the different parts of the brain to obtain a knowledge of the offices of these parts, and in former times the same means have been resorted to. Many poor animals have been tormented without ascertaining this point. Particular parts of the brain have been cut away and other parts of the brain injured, to observe the effects of these injuries on the feelings of the animals; and this method of investigation has been extensively employed in France, and is to this day. Among other experiments, they have pricked the *corpora striata*, which are bands of fibres passing to the anterior parts of the brain, and they have observed that the animal has run forward; they have injured in the same way the *cerebellum* or the little brain, and the animal has run backward; so by destroying particular parts they have found that the motions of animals have been destroyed.* I grant this, as far as the facts go: but shall we draw this inference and say

* We have seen the same method pursued, with somewhat different implements, in our own day, with the result that quite a different set of theories has been started. Dr. Ferrier and his school have put animals to extreme torture by uncovering their brains and electrifying the parts, and the various resulting contortions of pain have been set down as indicating the "centres" of various powers. And this is called science, while Dr. Spurzheim's method of watching natural developments is termed "unscientific." Men formerly used the word "heretical" as some now use the word unscientific: it designates the thing they do not like.

that these parts of the brain have no other functions? I cannot be satisfied with such an inference. My manner of judging as to the truth of any physiological doctrine is this: if I see anatomy in harmony with physiology, and anatomy and physiology with pathology, and pathology with the former sciences, and that they all harmonise with each other, then I admit the doctrine to be true; but if I find anatomy at variance with physiology or pathology, then I cannot admit it to be true. You must always value facts although you may not completely understand their import; but you must distinguish between facts and inferences. You must have observed that voluntary motion is destroyed when serious injury is done to the head, but you would not infer that the whole brain is destined to give the power of voluntary motion.

I come now to another mode which we have recourse to for ascertaining the functions of the several parts, namely, the size. Here I must request you to attend to the distinction between the means we employ to ascertain the nature of the cerebral functions and the causes which produce the different degrees of activity of the primitive functions. I repeat, that it is an essential thing in phrenology to understand these two sorts of ideas, for if any man confounds them, he can never become a good practical phrenologist. We employ the size of the cerebral parts as means to ascertain the nature of their functions, but different degrees of activity cannot be measured by the size alone. A muscle is destined to voluntary motion, and we may observe the muscles when in action; but do the different degrees of voluntary motion depend upon the size of the muscles alone? Can we be satisfied with saying that? If this were true, we should find that large muscles have more strength than small ones, and that the large are more active than the small; but daily experience teaches us the contrary. The same may be said of the brain; the size is sufficient to determine the nature of the function of the brain, but the size is not the only condition which contributes to the activity of the brain. The study of determining the nature of a function is more easy than it is to determine the degree of activity of a function. We speak first of the nature, and then of the degree of a function; and the second is more difficult than the first. Bodily constitution, exercise of the individual parts destined to certain offices, will produce a greater degree of activity in them; we see this every day. We must also consider the mutual influence of the powers; one power is excited by another, and one part prevented from performing its office by injury done to another. Every one who practises phrenology is too much inclined to measure the different degrees of

activity by the size alone, and I therefore never forget to insist so much on its inaccuracy in my lectures ; hence I hope you will not impute to me errors committed in this way. Is the size of heads different ? Look, in a general way, to the heads of persons and you will be astonished to see what a difference there is between them ; and it is only surprising how this difference has been overlooked. Yet you will hear some anatomists now say, "Oh, all brains are alike !" We know each other by the shape of the face—no two are to be found alike, yet the parts are essentially the same ; and if people wore masks to conceal their faces, I am sure they would soon know each other by the shape of their heads. There are small heads and large heads, narrow heads and

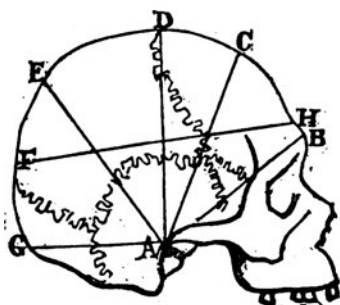


Different Shapes of Heads. 1—Alexander VI. 2—Zeno, the Stoic.
3—Oberlin. 4—Philip II. of Spain.

broad heads, short ones and long ones. Look at these casts, you will see all the shapes I have mentioned (showing several casts) ; every one of them is different. By habit, or experience, you would soon be able to distinguish heads by less striking differences of formation than in those I have shown you, and you would be able to apply that knowledge to practical purposes. (See the annexed outlines.)

How, in a general way, do you proceed to ascertain the size of the head ? Proceed in this way : you draw a line from the external opening of the ear to the middle of that part where, in children, the fontanel is observed ; or, to those who are not acquainted with anatomy, I may say, the middle of the head,

and continue it to the opposite ear. This line divides the head into two regions, the one towards the forehead being called the frontal region, and the other towards the occiput, or back part of the head, being called the occipital region. Be now attentive to individuals and you will find the greatest difference in the size of the two regions; you will find some who have almost all the brain in the frontal, and others also have the greatest portion of brain in the occipital region. These are facts; what use we can make of them remains to be shown. In looking at individuals, be attentive to the direction in which the brain is most elevated. Draw lines from the ear to the centre of the elevated parts, and see which radii are the longest. I mention this for the following reason: in anatomy we shall find that the different cerebral parts are concentrated more or less toward the middle of the base of the brain; speaking to anatomists, I should say, we must look at the



The Skull. Showing the proportion of the parts.

occipital foramen, and as we know that the brain begins a little in front of the occipital hole, and as the ear is in a line with that point, so in measuring from the ear, we come as near as possible to the centre; and from this point the different parts of the brain take different directions. Hence, in a head of this kind (showing a cast), the longest radius goes over the back part, and we know by it that the occipital region contains more brain than the frontal. Here are others (showing some casts) which have more brain in the frontal than in the occipital region. At the same time observe in what portion of the transverse line the head is most prominent. You must become accustomed to the degrees of elevation of the head, and you will discover great differences; some are flat at the top and broad at the sides, others flat on the sides and expanded on the upper part. Divide the head again into two regions, by carrying a line horizontally from the middle of the

forehead to the upper edge of the occipital bone, and you will find that in many individuals the greatest portion of brain will be situated below this line toward the base of the skull, which may be called the basilar region ; whilst in others the greatest quantity of brain will be found above this line toward the top of the head, and which may be called the syncipital region. Here are specimens, in some of which you see that the greatest portion of brain is situated above this line, and in others below it. In looking at heads generally you will find that in the greatest number the occipital and basilar regions are very large—much larger than the syncipital and frontal regions.

I wish to make one general observation on this point ; look to the elevation in proportion to the breadth : see these heads (showing two casts) ; this is certainly narrower on the sides than the other, but it is higher, so that this may be said to be less broad than high ; the other, on the contrary, is much broader than it is high. You must be convinced that in every individual some such differences exist, and therefore that there are modifications of the mental powers.

You may ask me what is the reason for such difference—what is the cause rather ? This question is physiological and philosophical. I might, for example, examine the influence of the brain, in its form and size, during the period of development and its influence on the skull ; and that it does influence the shape of the skull there can be no doubt. We might also mention the effect of artificial pressure, but it would be tedious to go into all the particulars here. With respect to artificial pressure, I have only here three skulls of Caribs, but each of them is flat on the forehead and very much elongated behind. I have been informed that there are some tribes in whom the posterior part of the head is flattened instead of the front part, and that these depressions and flattenings of the head are produced by such artificial pressure. Our information is not so precise on this point as it should be ; I am not satisfied with these few observations ; I wish it may prove possible to prevent the development of certain parts of the brain ; certainly if this could be done it would be a great benefit to mankind. It is necessary to ascertain whether the children among the Caribs have such depressed foreheads, or whether their foreheads are like those of European children, and are flattened afterwards by artificial pressure ; and it would be satisfactory to know how the machinery is applied and how long it is continued. Some have informed me that the pressure is used from the age of six weeks to two years ; but I have observed that persons

who have been in that country circulate very vague reports. Besides, it is well known that the heads of children undergo great changes, and that certain changes continue to take place even until a person reaches twenty years of age, and if they continue the pressure only two years, would that be sufficient to prevent any future development? Then, again, if there be pressure applied to the forehead, I should like to know how the apparatus is applied without producing counter pressure. I find the anterior part of the head much depressed, and I find the posterior part very much developed; now if a string were tied all round the head it must prevent the development all round. I cannot conceive of there being pressure without there being counter pressure.

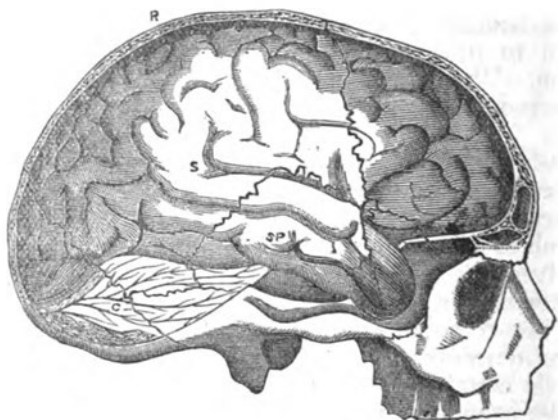
Those who have the opportunity of examining such brains might render great service to phrenology by attending to these particulars. I suppose that it is possible by determinate pressure to prevent the development of the brain in that direction. Would they find the development of the internal parts prevented, or would they be found only pushed on one side?

We admit the influence of different causes in producing this effect; and certainly the brain has a great influence on the configuration of the head, but it is not the only cause. Those who wish to enter into this point must study it attentively for themselves; it would not suit you to proceed further at present with this branch of the subject.

Now we come to another point: is it possible, seeing the different developments in different individuals, that they are greater in certain parts than in others? Is it possible to discover the cerebral functions attached to the different developments? It is certain that the size of the brain contained in the skull is not the same as that of the whole head. You must be aware that the hair is greater in quantity in some individuals than in others, that the skin is thicker in some than in others; and, therefore, when you wish to arrive at the real size of the brain you must make these allowances and observation soon sets us right. How is the size then to be ascertained? By the sight or by the touch: our object is to ascertain the size of the cerebral parts, whether by touch or by inspection. I could tell from mere inspection whether the skin was thick or thin, and an anatomist could do the same. Moreover, there are muscles on both sides of the head, and these muscles are very different in size in different persons, and you judge of the size of the muscles there by looking at the size of the muscles of the face. If you see a man with a muscular face and a chubby cheek you may conclude that

the temporal muscles, for so they are called, are also large; if the muscles of the cheek be thin, you draw the inference that these muscles are thin also. It is therefore of importance in the study of phrenology to attend to this circumstance. In all sciences certain individuals will experience difficulties, and so they will in acquiring a knowledge of phrenology, as well as in mathematics or in chemistry; but by observation and perseverance many difficulties may be removed.

The general form of the brain is always similar to the general form of the skull. Now if you will look at these brains and skulls you will see that it is so. (The Doctor showed many brains and skulls in which the correspondence was perfect.) This is the way in which we ascertain that the



The Brain and Skull.

development of the brain is in proportion to the configuration of the head. In speaking of these similarities you must not think that we are attentive to minute differences or of mere lines,* they would be useless; no, we look to generalities, and we see that they correspond.

Some persons have said that you cannot discover the size of the brain from the configuration of the skull, because there is no parallelism between the two tables of the cranium. Any anatomist must know that in opening skulls there is no parallelism between any two tables, but does he not find that the brain corresponds to the general size of the skull? Those who have made this objection have never, I am sure, looked

* A line is an expression much used on the Continent; it means in measure about one-twelfth of an inch.

to nature. Differences of form always indicate differences in the development of the several parts of the brain. I am certain that it is possible to ascertain the development of the parts of the brain from the external configuration of the skull from the birth of children to the time at which the brain begins to diminish and shrink in age; the brain becomes more perfect in its organisation, as other parts of the body; it is still in the middle period of life, and in old age the brain diminishes in size as the muscles and other soft parts of the body decrease. From the period of birth, then, to the period when the brain begins to diminish, when the individual begins to complain of a defect in his intellectual powers, when the memory goes away, and the other powers go away, it is certain that, till then, the brain does bear a correct proportion to the configuration of the head; but after this period the brain shrinks, while the external circumference remains the same. In children the skull is very thin, and does not become considerably thicker until after about fifteen years of age; at thirty it is of the common size, and remains so until the decline of life, but in old persons it becomes frequently thicker, although the natural form is retained. The bones of the head are often also very much thickened in chronic insanity. The thickest I ever saw is this, the skull is one inch and a half thick; the person died at the age of sixty-five, and was idiotic for ten years previously to her death. Is it necessary to ascertain the function of the brain to make our observations in old age and in the diseased state? The important thing is to make our observations on persons who are in healthy activity, and in whom the functions are all healthy; and in such persons, up to the middle age, and even beyond it, we can with certainty tell the shape of the brain by the configuration of the head. We are often asked by persons who have not studied the subject about the import of trifling sprouts of bone on the skull and little projections and depressions of bone. They mean nothing, they are irregularities of the bone only, we pay no attention to them, but to the greater development of different parts in various directions.

GEORGE STEPHENSON.

Times and circumstances greatly aid in bringing some men to the front, and giving them great notoriety, without having any more than an ordinary genius, but as soon as the times change, or their friends cease to support them, they come to naught. Some have the force of mind to create circumstances, and for the time being carry all before them, which makes

them more feared than honoured and respected. Others take the advantage of circumstances, meet the emergency, do what is necessary, and sustain themselves in the hour of difficulty and danger. More lasting worth and permanent good is connected with the last condition than with the two former.

George Stephenson belonged to the latter class. He was neither brought forward by his friends, nor kept before the public by them, nor did he create circumstances, dazzle by his brilliancy, or create terror by his force. He simply did what was necessary to be done. He had a strong mind, not biased by wrong training, nor lumbered up with useless learning. What he did know he turned to the best account, and he had occasion to use all the knowledge he had, and put a severe tax on his native genius. He was a good specimen of a man who had never trifled with himself; hence he had all the strength and virtue of nature at his command. He was thoroughly industrious, and did not know how to get his living in any other way than by working and doing what came to hand.

He had a strong, hardy constitution, good health, and a well-compacted, vigorous, bony, and muscular organisation. He was a harmonious man; there appears to have been an equal degree of physical and mental force. His brain was well formed, as shown by a very correct marble bust of him in the library at Newcastle which I examined a few months ago. The bust indicates force, industry, economy, and prudence. He was not specially high in the crown of the head, nor was he noted for his pride or ambition; he simply minded his own business, and did whatever he did as well as he could, because he was honest, and did not know any other way, whether he got praise or not.

The moral faculties were large, as indicated by his high, full coronal brain, which, joined to his large Firmness, gave him stability of character, honesty of purpose, gentleness of disposition, and consciousness of a higher power, which had a modifying influence on his whole life and character.

The bust represents his frontal lobe to have been long and full in the centre, from the root of the nose to the top of the forehead, and from the root of the nose to the terminus at the outer corner of the eyebrow, indicating that the perceptive powers were largely developed, giving him much positive knowledge and practical talent. Individuality was large, which gave him great and accurate powers of observation. He was a close observer of men and things, and was able to take in the whole situation at a glance. Form, Size, Weight, and Locality were extra large, and helped him to see the exact fitness of parts, and to adjust one thing to another accurately.

His large Order and Calculation gave him great facility in making complete arrangements and correct estimates, and in proceeding systematically in all his operations.

Individuality and Eventuality being both large enabled him to see in his mind's eye from the beginning to the end of any work he was about to enter upon, and all necessary steps to be taken to bring about his ends.

Comparison and Intuition being very large, gave point and a practical bearing to his intellect, enabling him to apply principles and turn all his ideas to account, and to act with reference to definite results. His Imagination, Causality, and Constructiveness are fully indicated, and powerful enough to be of ser-



vice, but not so large as to prevent his practical, engineering intellect from operating to the best advantage. Had they been very large he would have attempted extravagant mechanical operations, and thus been much less practical and useful. His intuitive power to see into things, and to get correct impressions from first sight was very great. This talent made him an apt student of nature, disposing him to regulate his actions, establish his philosophy, and modify his theology by what he saw in nature. He was quick to take a hint; the moving straw told him the way the wind blew, and the fresh track told him that some one had just been along: so in all other things, he learnt much from a little.

Being in youth a stranger to luxury, fashion, and fast life, and having no money to spend on deranging habits, nor the opportunity to go into company, he was thrown upon his own resources to earn his living, and secure a scanty education. Hence he grew up a true child of nature, seeing things as they were, and doing the things that were necessary, and it became necessary for him to do his best every time, for he could not afford to make mistakes. He was pre-eminently a modest man; hence he could sympathize with the poor and ignorant, and never forgot the struggles he had to go through in order to reach an elevated position. Firmness was one of the largest organs of his head, and he owed much of his success to his plodding perseverance, that would not let him give up the task he had once commenced. He never stopped for applause, never sought titles, never domineered over others, never meddled with other men's affairs, and never assumed positions or arrogated gifts he was not fully entitled to. Few men have passed through the world so quietly, done so much, and left so honourable and unsullied a name behind them as George Stephenson.

L. N. F.

The centenary of George Stephenson's birth—he was born on the 9th of June, 1781—affords a fitting occasion to note down a few particulars about him, phrenologically and otherwise. We cannot too often revert to such workers and benefactors of humanity, and draw the lesson that their lives enforce. The honest worker is always a benefactor; it is the idlers who everywhere make the mischief, and before the world becomes what it should be all will have to be workers. Stephenson began in the lowest rank of workers, but he was a hard and persevering student, and in every way used excellent powers to a good advantage, and so won the reward of effort. He was accustomed, when addressing young men, to sum up his best advice to them in the words "Do as I have done—persevere." Feeling the deficiency of his education, he taught himself arithmetic and mensuration during the night shifts, while working as a colliery engineman, and studied mechanics during his spare hours at home, thus preparing himself for his great work—the invention of the passenger locomotive. He worked at the improvement of his locomotive for some fifteen years before achieving his decisive victory at Rainhill.

THOSE who never retract their opinions love themselves more than they love truth.—*Joubert.*

THE FACE AS INDICATIVE OF CHARACTER.

THE MOUTH AND LIPS.

A very important faculty has its sign in the middle of the upper lip: we call it Self-esteem for want of a better name. It is the faculty which gives pride, self-possession, dignity, decision. Will-power, as we shall see, has its sign elsewhere; but decision—the ability to make up the mind quickly—is closely allied to the quality which gives self-reliance, namely, Self-esteem. This faculty is indicated by a short muscle which acts upon the upper lip, causing generally a fulness and stiffness in the centre, as indicated in the accompanying outline (Fig. 52). Hardly any other single mental power tends in an equal degree to give poise to the character as Self-esteem. It does not of necessity follow that a person with this faculty large is proud, haughty, and domineering; it depends on its relation to other faculties, to what extent these unamiable qualities are developed. But a character without this trait is weak, vacillating, and too much subject to the control of others.



Fig. 52.

In the next figure (No. 53) we have the outline of one who is somewhat subject to this infirmity. The lifting of the upper lip and exposure of the teeth denotes the Love of Approbation, or, to use the phrenological designation, Approbativeness. Sometimes there is no exposure of the teeth, but simply a lifting of the lip. This faculty is a powerful element in human nature, and is of the greatest importance in the social economy. The desire to be approved and to approve others aids most powerfully in binding people together, and thus forming the basis of the social state. If it were not for Approbativeness and the various qualities that arise out of it, such as vanity, love of display, &c., there would be hardly coherence enough in society to hold it together for a day.



Fig. 53.

Closely connected with the Love of Approbation is the faculty of Complacency, which is indicated by a long muscle passing from under the corner of the mouth to the arch of the cheek bone, drawing the mouth upwards towards the sign of Affectation (to be noticed further on). Dr. Redfield says of this quality: "In one who exercises affectation benevo-

lently, as in assuming a character of inferior dignity for the sake of putting a common person at his ease, the sign of which we speak is the *smile of complacency*; in one who exercises affectation in assuming theatrical characters and characters superior to his own, it is a *smile of self-complacency*; and in one who hypocritically assumes a character, and wears an air of wisdom or of goodness which does not belong to him, the sign of complacency is a hypocritical smile of good nature, merging into a smile of self-gratulation, and even of malignity." Which is another way of saying that the faculty may act with good or bad qualities, according as the one or the other predominate.

The faculty of Dissatisfaction is the opposite of that of Complacency, and its sign is the drawing of the under lip backwards and a little downwards. A person with this faculty never assumes a character that does not belong to him; he is above all things natural—sometimes disagreeably so.

Cheerfulness is indicated by a muscle extending from above the corner of the mouth to the cheek bone, in front of the sign of Complacency. It draws the corners of the mouth upwards somewhat obliquely (See *c*, Fig. 54), and is generally accompanied by wrinkles curving downwards from the outer corner of the eyes. It gives a pleasing and often joyous expression to the face. The opposite of cheerfulness is gloom, and an oblique depression of the corners of the mouth denotes the quality of Gloominess. The expression of sadness, dejection, and melancholy, produced by the downward inclination of the corners of the mouth, is no more difficult of identification than that of cheerfulness.

Gloominess may be said to be a heightening or exaggeration of the faculty of Gravity, which draws the corners of the mouth downwards and lengthens the upper lip over the angle, as represented in Fig. 55. Its position on the upper lip is indicated in the diagram numbered 54. The portraits of Mr. Gladstone show a marked development of this sign, and the trait is no less marked in his character. The tendency of

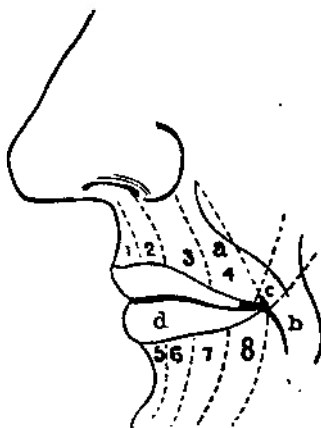


Fig. 54.

- | | |
|-----------------------|---------------------|
| 1. Concentrativeness. | 7. Patriotism. |
| 2. Comprehension. | 8. Cosmopolitanism. |
| 3. Application. | a. Clearness. |
| 4. Gravity. | b. Precision. |
| 5. Love of Travel. | c. Cheerfulness. |
| 6. Love of Home. | d. Love. |

the faculty is to give seriousness and a feeling of responsibility. A person with Gravity large is disposed to look upon life as no light matter, but as something of the weightiest moment. The faculty is generally larger in man than in woman.



Fig. 55.

natural interpretation. It may often be seen in many men and women of distinguished simplicity of character.

Concentrativeness, a most important faculty, is indicated by the length of the white part of the upper lip in the centre, as at *a* in Fig. 57. It sometimes causes a "drop" on the red part of the lip. The sign is oftener seen in woman than in man. Concentrativeness gives the ability to observe minutely and to bring the mind to bear upon the so-called little things of



Fig. 57.

men than in women.

Outward of Comprehension is the sign of Application. It is indicated by the length of the upper lip below the opening of the nostril. See Fig. 54, also the accompanying outline, Fig. 59. The faculty gives the ability to apply the

There is another trait indicated by the corners of the mouth which ought to be noted here; namely, that of Simplicity. It is indicated by a gentle curving of the corners of the mouth, as if they were drawn upwards and forwards towards the nose, as they really are (See Fig. 56). It is seen in simple-hearted children, who are disposed to understand everything literally and according to the most



Fig. 56.

life. It is an element in patience.

The length of the upper lip on either side of Concentrativeness (2, Fig. 54) indicates the faculty of Comprehension. The sign is figured in the annexed outline (Fig. 58, *a*). As the name indicates, the faculty gives the ability to take large and extended views of things and their relations. The presence of this sign gives a masculine form to the mouth, and is generally more prominent in

mind steadily and continuously to study or labour. It is generally a marked feature in the faces of artists and scientific men.

Love of Travel is indicated by the length or fulness of the under lip from the swell of the chin, at point 5, Fig. 54. When large it indicates a wandering disposition. Love of Home has its sign on each side of the latter, as indicated in Fig. 54. A person with this faculty large desires above all things to have a home, if it be only a single room, in which to con-



Fig. 59.

concentrate, as it were, his life and affections. Somewhat akin to Love of Home is the faculty of Love of Country, or Patriotism, which is indicated by the length or fulness of the under lip next to the last-mentioned sign and opposite Application (7, Fig. 54). Cosmopolitanism (8, Fig. 54) has its sign in the length or fulness of the lower lip at the angle of the mouth and opposite Gravity.

Cosmopolitanism is the name given to this sign by Dr. Redfield; it is a question whether Magnanimity would not be a better name. The presence of the sign gives to the mouth a magnanimous character, which only needs to be seen to be appreciated. It is strikingly exemplified in the portrait of Mr. John Bright. One with this sign large—and when it is large there is a compression of the lower against the upper lip towards the corner of the mouth, and extending half way towards the centre—cannot easily do a mean action, though he may do a rash one. A similar compression of the nether against the upper lip indicates (according to Dr. Redfield) the quality of Purity. It is most frequently seen in children, but it is not rare to find it in the aged, to whom it gives a particular sweetness of expression.

The faculty of Parental Love is indicated by two small dimples at the lower part of the under lip, near the middle line. The existence of this sign always indicates a strong degree of the faculty. It may generally be seen in little girls particularly fond of dolls.

There are two signs indicated in the diagram numbered 54 which need a word of explanation. They are noted by the letters *a* and *b*, and Dr. Redfield names them respectively Clearness and Precision. The fact is that when the faculties which have been indicated as appertaining to the upper lip, namely, Self-esteem, Concentration, Comprehension, Application, and Gravity are duly represented, the lip appears to be



Fig. 58.

gently held in or drawn back, and a corresponding fulness terminates the corners of the mouth, communicating an expression of poise, self-possession, and clearness not easily mistaken. It may therefore be taken as the combined effect of the whole of the signs of the upper lip, and not as indicating any special signs.

It remains to say a word or two about the furrow or furrows which descend from the wings of the nose, and pass obliquely towards the corner of the mouth, as shown in the annexed outline (Fig. 60). It belongs more particularly to the cheek signs, but may not improperly be referred to here. Mr. Walker seems to think that they indicate the capacity for enjoyment. He says: "They are increased when pleasurable sensation everts the upper lip, or laughter extends it, and therefore indicate capacity for such sensation." The furrows really denote lung-power, and of course in proportion to the vitalising power of the lungs is the capacity to look upon life pleasantly and enjoy agreeable sensations. Hence Mr. Walker is, though somewhat indirectly, right. But more will be said on this subject in a future chapter.



Fig. 60.

THE TWO BRAINS AND NERVES OF SENSE.

Things cannot act where they are not, or one body upon another, except by an intervening medium. There is the ethereal, elastic medium for light and heat from the sun and all other common bodies, and as much an absolute necessity as the wire that unites the bell with the bell-pull. To communicate with New York we must have the cable under the sea uniting the two continents. There is no sound from an exhausted space, as exhibited in the air-pump. Were there no ether filling space we should receive neither light nor heat from the sun, and which subtle medium penetrates all things, and everywhere, solid, liquid, the air, all alike; and the more solid the transparent substance, the more perfect the passage of the rays of light through it. We very properly regard the air as the medium of sound; yet a log of wood, an iron rod, or other solid bodies form better conductors of sound than the air. Hence the inference that the real subtle medium is attracted by the solid, and thus more condensed and efficient within the body than in space. Now it was the opinion of Lord Bacon that this spiritual investment in all bodies was the source of

all power, and substance or basis of mind ; and Newton held the same view, but neither were aware of the universality of the medium, and of the conveyance of all influence from body to body. Then it was shown by Newton that bodies do not absolutely touch, not even the component particles of bodies, so that when I push the table I do not actually touch it, but the spirit-action within my hand passes by an intervening medium, and so influences the spirit investment of the body moved ; and remember that both Bacon and Newton warned us of the danger of hypothetical ideas ; but after the recognised fact and need of the mediums for light, heat, and sound, the necessity of extending the principle to all powers, and the transfer of such powers by requisite means and mediums become apparent to all as an essential law and common rule. But whether the intelligent reader will readily and easily follow me I am not sure, remembering the labour and thought it has required with myself to recognise the spirit as the source of all power, and basis of all instinct, and of perception, and thought, and that the whole universe is bathed in an ocean of this subtle, ethereal matter, that we must term spiritual to distinguish it from the gross and mechanical, for the passage of light through solids, and the active and infinite lines of the luminous force from every direction in a point in space without the slightest hindrance or interference is incomprehensible and therein differing from what we call mechanical. But we are treading upon delicate ground, and must beware lest we lose our footing on the actual, reliable, and true ; but all which is preliminary and essential to the question of perception, and the view we are about to consider, and no doubt sufficiently novel to startle our prejudices in the beginning. Some have accounted for the fact of our vital and mental nature by two souls, one relating to the physical man, the other to the mental, and there was some reason for the thought. Anyhow we have two separate brains, united as all the body is, but distinct in character and position. My long-conducted and varied experiments in what was discovered by myself and called phreno-mesmerism, lately re-discovered by Prof. Bassett, of Dublin, and who tells me that French investigators have satisfactorily confirmed my conclusions in respect to the cerebellum, or under and lesser brain as the central organ relating to all the physical man, as distinguished from the upper and larger brain, the organ of conscious perception and thought, or the mind proper. The particulars in respect to this matter will be found in the opening letters on methods and means in respect to the science of man and mind, addressed to Miss Martineau, at her request, and published so far back as 1851,

and which is of course made much of in Miss Martineau's autobiography, published in 1877. That the attention of investigators was diverted to the newer question of the so-called "spiritism," is the chief reason of the neglect of mesmeric experiments up to this time, but to which inquiry new interest has been recently given from Germany.

Dr. Carpenter, and the anatomists in general, suppose that perception takes place at the back of the brain, because the nerve channel of the senses proceed to that region to masses of grey matter at the back of the brain, in close relation with the cerebellum, and what has been the stumbling-block to phrenology all along. But in my letters to Miss M., I suggested what I now fully believe to be the fact, that the nerves of sense are not channels of sensation at all, but efficient agents of physical supply or demand to maintain the receptive and corresponding conditions of the sensitive regions as must be requisite. Of the retina, for instance, engaged in active operation and attention the whole day through, and often without any sensible fatigue or ache. Then again, if the tooth is in pain, or hand cold, or the foot is trodden upon, where is the direct communication with the cerebrum, or from the bowels, kidneys, or other parts? and in my last I have shown how the mental sense is, in effect, on the instant, cast back to the injured part, or objective cause, and have shown the value of the illusions, and how they are essential to all that has animal life. The view is that from the sensitive part, be it the retina, or a corn on the toe, the condition has its sympathetic relation and responding condition and location in the brain, the passage from part to part effected in the spirit-investment now explained, and hence the instantaneous sense in the brain of a prick in any spot of the body, and the equally instantaneous reference to the injured part. I know how difficult the matter is, but what I am asserting now is the result of forty years' patient investigation and reflection. Space here bids me stop.

But the reader will find some reference to the above statements in Mr. Charles Bray's admirable little work, the "Manual of Anthropology," so full and complete in its way, and after Ferrier's foolish experiments by a misleading means it will be soon recognised how the subject under mesmeric influence, made sensitive, individual parts and organs can be acted upon without the general or partial interference by narcotics, and thus man's physiology may be read off letter by letter, and word by word, and a reliable means attained besides Gall's, to the study of man and mind. Objections have been urged in respect to thought-reading; my cases were not so influenced, but the objection must be kept in view.

HENRY G. ATKINSON.

WHAT WE ARE MADE OF.

In the Book of Genesis we read that "the Lord God formed man of the dust of the ground." Josephus more explicitly informs us that Adam was made of red clay. Grecian mythology declares that Prometheus compounded the first man of clay and particles taken from various animals. The Moham-medans say that God made Adam of seven handfuls of earth, from different depths, and of different colours, collected by the angel Azrail. The early alchemists and astrologers, in their vague but grand speculations, have much to say of the human body as the microcosm, or little world, supposed to be made up of every element to be found in the three kingdoms of nature; that is, in the macrocosm, or great world. The modern ingenious and beautiful theory of evolution,—recognising the kinship of man with all that lies below him—is it not symbolized and foreshadowed by the old philosophies? Francis Bacon, commenting on the belief of the alchemists, curiously remarks that "the body of man is all existing things, the most mixed and the most organic," and that "this, indeed, is the reason it is capable of such wonderful powers and faculties, . . . abundance and excellence of power reside in mixture and composition."

Modern science enables us to determine with accuracy the kind of material of which the body is made. About twenty simple substances have been detected by the qualitative analysis of human tissues; these combine to form between eighty and ninety physically different components technically called "immediate principles." The immediate principles make "structural elements," such as cells and fibres, and from "structural elements" are developed all the tissues, such as fat, muscle, nerve, and bone. Of tissues are fashioned the numerous organs of motion, digestion, circulation, respiration, sensation, &c., that are severally called systems, and that collectively make a complex mechanism named the system. System is an inadequate name for a structure so wonderful.

The human body comprises about 200 bones—rods, plates, levers, shields, we may denominate them—deftly articulated, bound together by silvery bands called ligaments; 400 red elastic muscles—lithe, half-reasoning labourers that serve King Brain; veins pulsing with purple currents, and arteries conducting crimson streams—the bright brooks that water the little world, and purify themselves in their own swift-running, innumerable pearly rivers—the telegraphic wires of the little

world ; hundreds of millions of these wires run from the brain ; by their means any part of the "skin of the hand is in connection with, perhaps, 200 muscles."

HOW BREAD IS TURNED TO BLOOD.

Within the body, by mysterious apparatus, bread is transformed to blood, and blood to flesh and bone and brain ; fluids of subtile quality thread their intricate way through a thousand "natural gates and alleys," building and destroying alike for our good ; vital air permeates minutest vessels, diffusing heat and energy to every fibre. A man requires 3,000 pounds, or a ton and a half, of food a year—call it fuel or call it building material—to keep his body in repair, and to keep it alive and warm. Twenty millions of blood cells are born, and as many die, at each beat of pulse. In the lungs are 600,000,000 air cells, presenting an aggregate surface of 7,400 square feet with which oxygen comes in contact. We use in a lifetime about one million cubic feet of air—enough, literally, to form an air-castle a hundred feet square and a hundred feet high.

Why, even the surface drain-pipes of the body, the sweat tubes of the skin, are, taken together, as Carpenter computes, twenty-eight miles in length ! What extents ! What forces ! What effects ! Is the delicate body of yonder slight school-girl the store-house of so much material ? Is it the theatre of such enormous activity ? Is it such a power-hall ? Yes ; the physical means which we unconsciously employ are vastly greater than those controlled by the will.

The stark, cold corpse of man, the cadaver, awakens in the reflective mind admiration and reverence. The surgeon dissects it with ever-increasing interest. He is never weary of inspecting its parts, and contemplating its structure. It presents a field of investigation inexhaustible, and always new. The prying microscope, the delicate knife and probe, the searching chemical test—all the fine appliances of science, are employed in the study of anatomy and physiology. But how much is there imperfectly known, how much undiscovered in the mysterious "little world" even after the incessant explorations of thousands of years !

THE VITAL AND THINKING PARTS.

It is usual to regard the body as divided into extremities, trunk, and head ; or as Alexander Walker expresses it, into locomotive, vital, and thinking organs. It will aid us to form a conception of the perfect and admirable structure of man if we make a brief examination of a single representative in each

of the divisions named. No more interesting member of the locomotive or mechanical group of organs can be named than the hand. So suggestive a subject is the hand, and so prolific in "proofs of design," that Sir Charles Bell made it the topic of one of the Bridgewater treatises, devoting over 200 pages to an account of its mechanism and vital endowment. Bell and many other writers define the hand as belonging exclusively to man, and, from comparing it with the paw or other prehensile instrument of the brute creation, are deduced some of the most convincing proofs of the essential superiority of man. The number, form, and adjustment of its parts; the freedom, variety, and celerity of its movements; the firmness of its texture; the peculiar power it possesses of resisting the injurious action of poisonous or corrosive substances; its exquisite sensibility, all tend to make the hand the most perfect instrument conceivable for the purposes to which it is applied.

"THE CITY OF THE BLOOD."

Should we survey the group of organs termed vital, we would at once single out the heart—that "metropolitan city of the blood," as it has been poetically called. The heart is strong and tough, and yet smooth, soft, and elastic. Its muscular coats consist of seven layers, each made up of an incredible number of fibres twisted, inwound, and woven together in the most compact and intricate way; its partitioned cavities, each of peculiar form, communicate by various openings with one another and with the great veins and arteries; its curious valves open and close with a rhythmic precision that the skill of mechanic art cannot imitate. Even after the brain and spinal cord have ceased to act—when life is extinct—the heart will sometimes beat (faithful servant, beating the march of life to the end—yea, and even the funeral march of dead life). We are, when in good health, almost unconscious of the action or presence of the heart in our breast, so gently and noiselessly it performs its unceasing labour. And what a mighty labour it performs, small as it is, and light—being only about five inches in length, and not more than ten or eleven ounces in weight, it yet pumps eighteen pounds of blood from itself to itself in less than two minutes' time! Calculations made by Professor Houghton demonstrate that "the daily work of the human heart is 124 tons lifted through one foot." In other words the heart exerts one-third as much muscle power in one day as does a stout man engaged in hard labour. Or, to employ another of Professor Houghton's illustrations, "if we suppose the heart expends its entire force in lifting its own weight vertically, then the total height to which it could

lift itself in one hour is 19,754 feet," and that is twenty times as high as an active pedestrian can lift himself in ascending a mountain.

THE BRAIN IS KING.

Sovereign in the highest group of bodily organs is the brain. No brief description can convey an adequate idea of this. Occupying the highest place in the structure, the dome of the temple, it is the medium through which the soul acts and enjoys. To reason and to will, are its supreme functions. Chemistry and microscopy have laboured diligently to dissect, magnify, and analyze the fine forms, textures, and substances of this extremely interesting organ. After all, it remains, in many respects, a puzzle to the scientific investigator. To those unacquainted with anatomy, a mere enumeration of the terms used in a description of the brain is bewildering. A thorough and exact knowledge of the complicated organ itself is only to be acquired by years of industrious and scrutinizing application. Its several parts, the medulla oblongata, the glands, the cerebellum and cerebrum, are each great chapters of a greater volume. The brain is composed of several peculiar substances, differing in consistency, colour, and texture. It is massed in hemispheres, lobes, and convolutions; and cut up by ventricles, fissures, and sinuses. The brain of a man is absolutely larger and heavier than the brain of the elephant.

THE HUMAN BRAIN.

The average weight of the human brain is three pounds. The exterior surface, owing to the numerous convolutions, presents an area of about five square feet to the action of the blood. Some physiologists believe that intellectual forces are generated upon this brain surface, in a manner analogous to that in which electric currents are developed upon metallic plates. The brain is hence regarded as a great galvanic battery of thought. Wilkinson, in his book, "The Human Body, and its Connection with Man," sums up a discourse on the brain by the declaration that "it is the heart of hearts, for it receives from the body and the universe spiritual blood, which its cortices pulse out in infinite streams throughout the brain;" that "it is the lung of lungs, for its animation is the breathing of the soul in the all-communicable æther;" that "it is the stomach of stomachs because of its bold chemistry in the preparation of the food of foods, which is the nerve-spirit; aye, and it is the primal womb of life and thought."

Hand, heart, brain; foot, lung, eye; any organ, every organ of the body, is a marvel of perfection.

Consider the organs of sense, the instrument by which the mind perceives the world. We cannot linger to describe even one of these organs, but will merely state a few facts showing the delicacy of human sensations. The acuteness of sight and hearing is so often spoken of that it needs no illustration. The lower senses—feeling, taste, and smell—are not so much studied or so well appreciated as their nobler sisters. By the touch, the blind not only read, but they have been known to model portrait busts, to distinguish genuine coins and medals from spurious ones, to recognise the different specimens in a large conchological cabinet, and even to distinguish the colours of woven fabrics. A blind man of Indianapolis, in the United States, turned aside to avoid a wood-pile which, unknown to him, had been placed in the way of his usual walk. When asked how he knew there was an obstruction before him, he replied, "I felt it." Perhaps he should have said he heard it.

THE DELICACY OF THE SENSES.

The sense of pressure enables a man to use his hand as an accurate balance. Experiment proves that we are able to distinguish nineteen and one-half from twenty ounces by muscular sensibility. Exact calculations also show that the finger can perceive a difference of temperature of about one-fourth degree Centigrade; a sensibility, says Bernstein, "greater than we should have expected, since it is greater than that of an ordinary thermometer."

By the sense of taste we can detect "one part of sulphuric acid in 1,000 parts of water." Carpenter states that "the experienced wine-taster can distinguish differences in age, purity, place of growth, &c., between liquors that to ordinary judgments are alike; and the epicure can exactly determine the spices that are combined in a particular sauce, or the manner in which the animal on which he is feeding was killed."

Bernstein asserts that the sense of smell has a delicacy surpassing that of all the other senses. He says: "No chemical reaction can detect such minute particles as those which we perceive in the sense of smell, and even spectrum analysis, which can recognise fifteen-millionths of a grain, is far surpassed in delicacy by our organ of smell."

But it is not by examining the body piece-meal, or its functions separately, that we obtain a just conception of that consummate thing. Each part and part of part is indeed excellent. Each organ is complete—finished with the utmost nicety, beautiful, exactly fitted to its use. Conceive now of all the perfect fractions of man, compacted together in one

perfect whole ! What aggregation of wonders ! If the organs severally seem worthy of admiration, how much more worthy do they seem when viewed in their relations to one another, and to the symmetrical unit which together they form ! And how worthy of patient and reverent study is the whole, both in its physical and in its mental relation ! W. H. V.

MARION'S TURN:

AN ENGLISH GIRL'S ROMANCE.

BY A. S. JAMES.

CHAPTER V.

I had noticed that Henry never spoke much with us of the wife he had lost. It seemed as if he avoided the subject, as being too painful. Although he had thrown off, to a great extent, his habitual sadness, I often imagined that his mind was occupied with memories of his lost one ; and one day he at last spoke to me about her.

It was a beautiful day ; rather warm. He was sitting alone in our garden, on our favourite seat under the laburnums and the lilacs. I had been to the village ; and when I returned I saw him there. Amy was with my mother in the house.

As I said, it was rather warm, and I had put on for the first time that year a light blue dress. Of course Henry had not seen me in this dress before. He was so occupied with his thoughts that he did not notice me, as I drew near ; until, when I was standing quite in front of him, he looked up suddenly ; but he gave such a start when he saw me ! He seemed very sad too, for his eyes were full of tears.

"Oh, Henry !" I said, "why do you start so ?"

"I was thinking of my lost Amy, Marion, so that I did not notice your approach ; and when I looked up and saw you, I thought it was she who stood before me ; you resemble her so much. The dress you have on makes the likeness more striking ; for that was her favourite colour."

And then he made me sit down by him, and told me the story of his love. He and Amy, his wife, had known each other from childhood. They were neighbours, and their parents were intimate friends, and so the children had been constantly together. They had gone to the same school, and neither of them having either brother or sister, they had grown up as brother and sister to one another. Their parents

had encouraged their affection in every way ; and when they were married, it seemed as if they were only consolidating a union, which had taken place long before. They had been very happy during their years of married life. But Amy took a sudden cold ; fever supervened, and she was dead in a few days. The blow seemed to stun Henry ; I cannot tell you how fondly he described his wife. She must have been very amiable to have obtained such a hold upon the affections of a man like Henry.

After that day Henry often spoke to me of his wife ; and I think the very act of speaking about his loss, and finding sympathy in it, helped more than anything else to assuage his sorrow. And the more he opened his heart to me, the more noble I found it, and the more I loved and revered him. I had not forgotten Anastasia's words ; had I wished to do so, she would not have permitted me, for they were often repeated, whether in jest or in earnest I could not tell. But though I felt Henry was becoming more and more dear to me, I did not dare to think he could ever be my husband ; and yet I often thought what a treasure she would win, who could gain such a heart as his. I was, however, very happy in his society, and our home-life had become so pleasant to me since his and little Amy's arrival, that it seemed to me, as if I could hardly hope for any greater happiness, than that things should continue as they were.

I once expressed myself somewhat to this effect to Anastasia, when she had been talking of my "turn," as she called it.

"Ah!" she said, "you do not know yourself, Marion ; but your cousin may return to America—he can hardly think of staying with you altogether."

"Return to America!" The idea took me by surprise ; and yet it was such a probable event. Ah! then I felt that I could not bear to lose him.

CHAPTER VI.

More than a year had thus passed by, and, as I said, we were very happy, although the thought of Henry's return to America, at times, cast a shadow over my heart. But at length an event happened which threw a gloom over our little household. One evening little Amy complained of her head ; she was put to bed, but continued hot and restless ; and so the village doctor was sent for. He came, and pronounced it a case of fever. The symptoms were more decided and more serious on the morrow. All was now anxiety in our hitherto happy

home. Henry and myself were constituted nurses of the little sufferer, and both of us were heavily taxed; for my mother was unfit, from the infirmities of age, to share in the task. But neither of us grew weary; Amy was too dear to both of us for any such feelings to arise. Henry, though much improved in health since his arrival, seemed ill fitted for such a task; but he would not be persuaded to resign it to other hands; and he could not have resigned it to better ones. He would, if he could have persuaded me, have prevented me from taking so large a share as I did in our task of love.

After a day or two Amy was delirious. In her delirium she was continually talking to her mamma, as though she were there; and sometimes she called me mamma, and talked to me in that strain. One day, when she was talking to me in this way, and I was humouring her fancy, and caressing and soothing her as best I could, Henry came in and heard us. I cannot forget the look of mingled sorrow and tenderness, with which he regarded us; but it was only afterwards that I learned to interpret it rightly.

Thanks to our care, the crisis was safely passed, and our patient began slowly to amend. The fever had already quite left her, when I, myself, succumbed to an attack of the same disease. I soon became unconscious of what passed around me. As I learned afterwards, Mrs. Dawson came to nurse me, and thanks to her care, I also successfully resisted the attack. I remember that, when I came to myself again, Mrs. Dawson and my mother were sitting on one side of my bed, and Henry, with Amy on his knees, was at the other side. When I opened my eyes, and recognised them all, what a strange joy thrilled through me! I caught Henry's eyes; they were looking upon me with that strange look of tenderness, and my own filled with tears. I felt, that if I were to lose him, I should lose all.

They all kissed me, Henry too; and as he kissed me, it seemed as if it were more than the kiss of a cousin.

CHAPTER VII.

I gathered strength day by day. When we were strong enough, Henry took Amy and myself out, every fine day, in a carriage he had procured. He was very kind and attentive to me; and Amy clung to me even more than she had done before. Happiness was now quite restored to our little home. Towards the end of May we shut up the house, and all went to the sea-side, to the little town of Rockby. The weather

was exceptionally favourable; and we enjoyed our visit very much. We spent almost all our time on the beach, or wandering among the rocks, sometimes varying our pleasures by a sail, when the sea was calm. We met with an accident, however, one day, which, though its only result was a fright, yet put an end to our sea excursions. We were sailing along quietly enough, for the sea was very calm, when Amy, reaching out to grasp a sea-weed that was floating by, lost her balance and fell over. I saw her falling and started forward to grasp her; but our combined weight upset our little bark, and we were all three in the water. Luckily I managed to grasp the boat, and Henry, being a good swimmer, caught Amy. As it was, our danger would have been very great, had not a fishing-boat been close at hand to rescue us. We got home as soon as possible, and changed our wet clothes; and, as it fortunately happened, suffered no ill effects from our involuntary bath.

We stayed at Rockby two months. Henry seemed to think of nothing but how to make the rest of us happy. Amy and myself soon grew quite strong, and Henry too, improved in health wonderfully. He was now very much altered from what he was on his first arrival; he never seemed sad now, and though never gay, appeared quite cheerful and happy. I saw that he paid great attention to me, but how to interpret his attentions, I did not know. Were they but the result of his cousinly affection, heightened by gratefulness for the devotion I had shewn for Amy? Or was it something more? For me, with my whole heart, I was in love with Henry. He occupied my thoughts by day and my dreams by night. If he were away from me, even for a short time, I was restless and uneasy. In his presence I was perfectly happy. Yet I did not reveal this. I am rather secretive naturally, and whatever Henry's own feelings were, I felt sure, he had no idea, how deeply I loved him.

He himself, though so kind and attentive to me, was so in his own quiet way. He had never kissed me again, since that time, when I first became conscious after my illness. Yet I often saw in his eyes that same look which I had not yet learned to interpret.

CHAPTER VIII.

We had returned from our visit to Rockby, and had resumed our former life at Hazel. It was a beautiful day in August. Our friends, the Hopes and the Dawsons, had paid us a visit. In the afternoon we three ladies were sitting

in the shade chatting together, while the gentlemen were strolling about the garden.

"Well, Marion," said Mrs. Dawson, "has it not nearly come at last?"

I felt the blood mount to my temples. "Oh, nonsense, Emily," I said, "of course not!"

"Oh yes, it has, Marion," put in Mrs. Hope. "It has indeed! Why everybody can see that your cousin is in love with you!"

Just then the post-boy came in at the garden gate, and handed me a letter. It was for Henry, and came from America. Then that old fear came over me, on seeing the stamp, and I was so overcome that I almost felt as if I should fall. I sank down upon the seat. My two friends were alarmed. "Please get me a little water Emily," I asked. Mrs. Dawson hastened for it. The cold water restored me, though I felt ill, and looked rather pale, as my friends told me.

The gentlemen presently came up, and my cousin, having received his letter, excused himself, and retired a moment or two to read it.

On his return I noticed he looked rather more serious than usual; and several times, when addressed, his mind was evidently occupied with something else. I watched him very attentively, without letting him see that I was doing so. My heart sank within me, when I observed his distraction. I felt that my presentiment was a true one. He was going to leave us. My habitual self-control, however, enabled me to conceal my feelings. It was the suddenness of the shock, that had made me give way before.

Evening came, and our friends were going. Henry and I agreed to accompany them a part of the way. We ladies were putting on our things in my room, when the morning's conversation was resumed.

"Ah! we know the state of Marion's heart now, do we not, Emily?" said Mrs. Hope. "That face of yours told a tale when you received the letter from America, Marion."

"Yes," said Mrs. Dawson; "but do not be afraid, Marion; your cousin loves you too well to leave you."

"Oh! do not talk so, pray," I said. My cheeks and brow were fiery hot.

"Why not, dear Marion?" replied Mrs. Hope. "Would it not be an excellent match? You are both about the same age; and everybody says you are made for one another. I am sure he would make you a very good husband."

I did not know what to say. I cannot play the hypocrite. That I longed for their words to come true, my heart told me

too plainly. After a pause, I said : "You are building castles in the air for me, as we used to do when we were girls ; and I am afraid this one will fade away like those we built long ago."

They laughed when I said this ; and we went down stairs, for the gentlemen were getting impatient.

It was a lovely evening. The sun was just setting, as we left the house, and all the western sky was aglow. There was a good deal of merry talk, as we went along down the shady lanes and through the meadows ; and I tried to be as cheerful as the rest, in spite of my forebodings. Henry seemed quite cheerful too, whether his cheerfulness was assumed or not.

My cousin and I had parted with our friends, and had turned back. We walked along for some moments in silence. It was now beginning to darken, for the sun had set an hour ago.

We were in the shady lane that led to our home before Henry spoke.

"I have something to tell you, Marion," he said. I felt my arm tremble in his a little.

"Is it anything serious, Henry?" I said, mustering courage.

"It is to me, Marion. I have received news that my presence will be necessary in America shortly."

My heart sank within me. I said nothing. I could not speak. The tears were in my eyes. I could not keep them back.

"Marion," he continued after a few moments, "I have not spoken to my aunt about it yet, for I wanted to ask you something first. I want to speak to you about a matter that concerns my own happiness and Amy's very much. Marion, can you consent to be your cousin's wife, and a mother to Amy?"

My heart jumped for joy. The tears streamed down my cheeks ; but they were tears of gladness. I could not speak, but I threw myself upon his breast and I sobbed for very joy. I could not help it. The reaction from such fear to such happiness was too great.

He pressed me to his heart, as we stood there, under those trees in the lane, and kissed me, oh, so lovingly !

My unromantic romance is drawing to an end. We were married in a month. Mr. Gray, assisted by Mr. Hope, married us. All the village was astir that day. I never dreamt that I should ever be the cause of such a sensation. All went off happily. My two friends were especially delighted at the coming to pass of their own prognostications.

"Did we not tell you so !" said Emily.

"Yes," said Anastasia, "everybody could see how it would be, but yourself, you dear simpleton."

"Yes," chimed in Emily, "and if neither Anastasia's prince

nor my general ever came, you have got your traveller, and are going to have your wish, to see the world, fulfilled."

And it was so. It had been arranged by Henry and myself, that we two should go to America, where Henry was to settle his business affairs. We were then to visit some of the principal towns in the States, and afterwards return to England. Then, taking Amy with us, we were to spend two or three months on the Continent.

All this was done, and is now long past. Henry and I live in the village of Hazel. Our darling Amy lives with us as happy as the day is long. She is quite a big girl now, and has a little brother and a less sister to share in her affections. And a very large share they have.

Thus Marion's turn came at last.

THE END.

COLOUR BLINDNESS.

It appears from the report presented to a committee of the Ophthalmological Society by its secretary, Dr. Brailey, that out of 18,088 persons examined (including boys in Eton, Westminster, and Christ's Hospital Schools, and 5,000 members of the Metropolitan Police), the sight of upwards of 750 persons was found defective. The average of defects was twelve times as great in males as among females, or 4.76 in the former and .4 in the latter. Among women, also, any but slight cases are very rare. Among men, on the contrary, they form rather less than half of the entire number. Therefore, the pronounced cases are at least 2.5 per cent., varying from this number in Eton School and the professional class to more than 3.5 in the police and the poorer schools of London. The main defect in most of the pronounced cases, say in 2 per cent. of the whole number of males examined, is an inability to distinguish red from green. Red looks to those so affected as a very sombre colour, in all probability as some shade of dark yellowish brown. Green is somewhat similar to this. They see other colours correctly, and by contrast very strongly. Dr. Brailey thinks that those who confuse red with green see neither one colour nor the other, but in the place of both some neutral shade such as grey. Jews are more colour-blind than any other nationality, and their defects are usually of the pronounced kind. The members of the Society of Friends are rather more colour-blind than the average, though the excess of their defects is principally constituted by the slighter forms of colour-blindness—*i.e.*, an inability to distinguish from each other the paler shades of most colours. Inmates of deaf and dumb asylums are very defective as regards colours.

Of the cause of this form of optical failing, the explanation given is considered by some rather bold, although it is one advanced in this

Magazine in its first number. It is simply that those who have long been accustomed to dispense with brilliant hues and cheerful colouring in their lives really come at last to be physically incapable of telling green from yellow, or white from red. The marvellously delicate organ of sight loses its power of discriminating colours, if that power is allowed to be idle, and is never, or very rarely, employed. Darwin and other scientific authorities agree that a faculty which is permitted to fall into disuse becomes at length incapable of being used. It is an ascertained law of nature that organs and faculties really do become more or less useless from want of exercise.

Hence it is that the Quakers suffer more than other people from this defect—the followers of George Fox having for generations past eschewed gaudy dress as a sin against good manners. On the other hand women have been preserved from any material loss of power in respect to the distinguishing of colours, owing no less, perhaps, to their innate love of finery, than to the fact of the materials of their garments being more varied in colour than those with which the sterner sex adorn themselves.

Dr. Brailey is of opinion that the Jews have strengthened their defects by the inter-marriages which have always been the custom of the race. It would be curious to inquire whether anything in the Hebrew ceremonial law will account for this defect, or whether it arose from subsequent causes—the laws which, for instance, in Christian countries, made it incumbent upon them to wear a distinctive dress, and the state of mind which would naturally make them indisposed to appear in gay colours.

The report of the Ophthalmological Society also bears witness to the fact that it is among the less educated that colour-blindness is most generally found; and inmates of deaf-and-dumb asylums afford a very large percentage of individuals unable to tell a red ball of worsted from a green one. This is not to be wondered at. Poor people to a far less extent than rich are able to indulge in the luxury of gay colours, either in dress, or in the adornment of their houses. To them the first consideration is wear, not brightness or delicacy of colour.

Poetry.

THE BROOKLET.

Thou brooklet clear and silver bright,
 Thou hurriest ever from my sight;
 Upon the bank I stand and say:
 "Whence cam'st thou, whither speed'st away?"

"I issue where the dark rocks lour,
 My course is over moss and flower;
 Upon my bosom softly lies
 The image of the azure skies.

"I therefore have a child-like mind ;
I hasten on, nor look behind,
For He, I think, who bade me be
Will guide me on unceasingly."

GOETHE.

SONNET.

O lark that at heaven's azure gate dost sing !
I fain to thee one liquid line would write ;
But after all the great ones, it is quite
A task to say ought new about thy wing,
Thy melody or madness, or to fling
A brand-new trope about thee, though one feel
The joy thou utter'st, and the senses reel,
Like Bacchants, in the glory of day's king ;
And yet what matters, minstrel of the sky,
That fill'st the Zodiac with thy heartfelt song ?
Thou and I sing one tune, hymn one delight,
Wing both one course, higher and yet more high ;
Joy in one love, that thrones the stars among,
And revels in delicious fields of light.

S.

Facts and Gossip.

THE *New York Herald* states that a bill is now under consideration in Indiana requiring that any man desiring to drink shall take out a yearly license, price ten dollars, the money to go towards the support of inebriate asylums, and the licence to be cancelled the first time its holder is found drunk.

THE *Conseil d'Hygiène*, of Paris, has just issued a large quarto volume of 700 pages, recounting all the precautions taken against several so-called "*Industries Insalubres*" practised in Paris. The work of the *Conseil d'Hygiène* extends over a period of five years, from 1872 to 1877, and relates to more than 200 industries in some of their essential details. Amongst the recommendations made are a refrigerating machine for dead-houses, and a special establishment for cleansing contaminated objects with superheated vapours. Amongst the curious observations is the analysis of a parasitic vegetation developing on bread for the military. It appears the original *sporulae* were brought from Germany by soldiers taken prisoners in the Franco-German war, returning home.

A WIDELY varying importance is attached to the style of signing the name to a letter. This not unfrequently leads to considerable misapprehension. There are people who, after very long acquaintance, and having warm regard for each other, never get beyond "Yours

truly," or, at most, "Truly yours," which is, we believe, generally accepted, we know not why, as just one shade warmer. On the other hand, there are those who in a few weeks reach "Ever yours," and even "Ever affectionately yours." "Where," was once bitterly asked, "are all the 'ever affectionately yours' of ten years ago?" Has not every one who has reached middle life a number of letters hidden away in some bureau, with a signature as warm as this from some one to whom he would now neither give nor get aught warmer than a "Faithfully yours," if as much? It not seldom happens that people who have a warm manner give a cold signature, and *vice versa*. The Duke of Wellington was a case in point. The most un-Irish of Irishmen, there was a decided absence of genial cordiality about him; yet his letters are full of "Ever affectionately yours." As we get on in life there appears a decided tendency to curb any affectionate exuberance in signature. Very few of us—men, at least—sign "affectionately" to any male acquaintance made after we reach twenty-three. It is just as well to be a little careful as to this matter of signature, remembering that many do attach considerable importance to it, and see in it an emphatic indication of the measure of regard intended.

THERE is a subject of curious inquiry in the following notes. Mr. Fowler writes: "I have been more than ever struck by the difference in the size of heads between North and South. In Newcastle I found heads of both men and women, measuring on an average half an inch more than in London. I found a number of female heads varying from 23 to 23½ inches in circumference." In Scotland there is a similar preponderance of large heads. Aberdeen he found specially noted for them, and for men of large and comprehensive minds, many heads measuring over 24 inches. There is, however, such a tendency in these big-heads to drift South, that the hatters are disconsolate, because their large-sized hats do not go off so quickly as formerly.

DRS. BEDDOES says that English heads are growing smaller, having shrunk one-seventh of an inch in a quarter of a century. The reason, we may add, is not far to seek.

IN the last number of the *Popular Science Monthly*, Dr. Oswald vigorously attacks the night-air superstition. Is night air injurious? he asks. Is there a single tenable pretext for such an idea? His answer is that since the day of creation that air has been breathed with impunity by millions of different animals—tender, delicate creatures, some of them—fawns, lambs, and young birds. The moist night-air of the tropical forests is breathed with impunity by our next relatives, the anthropoid apes—the same apes that soon perish with consumption in the close though generally well-warmed atmosphere

of our northern menageries. Thousands of soldiers, hunters, and lumbermen sleep every night in tents and open sheds without the least injurious consequences; men in the last stage of consumption have recovered by adopting a semi-savage mode of life, and camping out-doors in all but the stormiest nights. Is it the draught you fear, or the contrast of temperature? Blacksmiths and railroad contractors seem to thrive under such influences. Draught? Have you never seen boys skating in the teeth of a snow-storm at the rate of fifteen miles an hour? "They counteract the effect of the cold air by vigorous exercise." Is there no other way of keeping warm? Does the north wind damage the fine lady sitting motionless in her sleigh, or the pilot and helmsman of a storm-tossed vessel? It cannot be the *inclemency* of the open-air, for, even in sweltering summer nights, the sweet south wind, blessed by all creatures that draw the breath of life, brings no relief to the victim of *aërophobia*. There is no doubt that families who have freed themselves from the curse of that superstition can live out and out healthier in the heart of a great city than its slaves on the airiest highland of the southern Apennines.

It is proposed to raise a memorial to Friedrich Froebel, the great founder of the Kindergarten system of infant education, on the centenary of his birth, the 29th of April, 1882. The memorial is to take the shape of a Kindergarten Institute to be created in the place where he opened his own first Kindergarten, Blankenburg, in Thuringia, and an appeal has been sent forth from Germany to his admirers and disciples throughout Europe to contribute towards it.

LEOPOLD LAVATER, a descendant of the famous theologian and still more famous physiognomist of Zurich, has just died in Paris. He was a pensioned staff officer of the French army, and an eminent engineer and mechanic. He had only lately patented a new system of printing. The French journals speak of him as the last male survivor of Lavater's family, but this is a mistake.

GEORGE COMBE would hardly recognise Dr. Andrew Wilson as a fitting person to be Combe lecturer on Physiology and the Laws of Health. During a recent course of lectures in the chief towns of Scotland, he took occasion to say that "Combe should be remembered, not as the phrenologist, but for his advocacy of a knowledge of the laws of physiology and health." Whatever Dr. Wilson may think, it is as a phrenologist, as well as a physiologist, that George Combe will be known to posterity. He penned not a line in which he did not recognise and teach the equal importance of a knowledge of phrenology and of the laws of health. Indeed he never separated the two; it has been reserved to his lecturer to do that, and to extol the founder of his lectureship as a physiologist, while he puts him down as a fool for his phrenology. And yet he who so takes upon

himself to judge, never had the honesty to thoroughly examine the mental system of the man whom he so lightly condemns, and to that extent is a sham.

A YOUNG man in Russia, of decided ability, was attacked by an acute disease, brought on by excessive dissipation. After his recovery he was found to have lost all his mental faculties except calculation and memory. These were increased to such a degree that he could surpass all mathematicians in power of mental calculation, and could repeat poetry which occupied several minutes in reading after hearing it only once. In all other respects he is a helpless idiot.

"THOUGHT-READING" is the latest scientific novelty, at least in London. A young American named Bishop recently called together a number of scientific men to exhibit to them phenomena which he considered of this nature. A person was allowed to hide an object in his absence; then, taking the person's hand, he led him to the spot where the object was secreted. He also pointed out the position of real or fancied pains, and accomplished other similar feats, though not without a certain percentage of failures. Although undoubtedly interesting, the experiments did not appear to partake so much of the nature of "thought" as "muscle" reading.

MUSCLE-READING is no new thing. We have all read of the prince who was incurably sick, and no one could find out the cause, until a physician, or some one, suggested it might be love, and had all the damsels about the court pass before him in turn, when "an unconscious muscular excitability," as the physiologists put it, betrayed the secret. Similarly, Sir Henry Maine has described how the most imperturbable and accomplished of Hindoo liars may be detected by the twitching of their toes. Dr. Sarmiento, late President of the Argentine Republic, in his work "Civilization and Barbarie," gives an analogous fact. "Whenever," he says, "a Gaucho tells you anything, look at his feet; if he moves them he is telling you a lie." But, although this is not exactly thought-reading, it does not follow that there is not such a thing. A scientific man of Dublin states that he has experimented with an entire family, the members of which have all the faculty of thought-reading.

Answers to Correspondents.

R. J. (Wimbledon) writes: "A person has a tender and susceptible mind—one that is easily excited and influenced. Is it possible for the individual to be able to check his too great susceptibility in any way?" The way to check it is to do away with the cause that produced it. If ill-health, by becoming robust. If shyness, by becoming less thin-skinned. If a retired and solitary life, by going out more and mixing among people in a more indifferent way.

THE
Phrenological Magazine.

JULY, 1881.

DR. MOFFAT.

UONAH'S gourd grew up in one night, but before the noonday sun of the next day shone upon it it had perished. A "big tree" of California, 300 feet in height, and 60 feet in circumference, has been growing over 3,000 years, and it has apparently sufficient vitality to last a thousand years more. Some children begin to die as soon as they begin to live. They are like the butterfly, which basks in the warm sunshine, but is chilled to death when the sun has departed; while other children start in the world with a strong constitution, and an excellent quality of organisation. They are bright, vigorous, clear-headed, and are able to continue their labours with unabated energy into old age, can endure the vicissitudes of climate with impunity, and overcome the obstacles that threaten to impede their success.

Dr. Moffat belongs to the latter type. It is interesting to study the organisation of a man who has sacrificed his home, friends, and all the refining influences of civilised life, to become a missionary among a savage people, so low in the moral scale that they had no idea of a God, or a spiritual existence, and whose only aim was to get through the world in the rudest possible manner.

Dr. Moffat has an organisation that indicates great activity of mind and body, positiveness and tenacity of will, singleness of purpose, and great individuality of character. He has more available versatile force than the majority, and greater powers of endurance than one in thousands. His muscular system is of that peculiar quality that it has enabled him to adapt himself so well to surrounding circumstances, that out of eight companions who started about the same time to labour on missionary ground, he is the sole survivor, though he had to encounter greater difficulties, and assume more responsibilities than the others. He had the power to resist foreign influences, and never lost his own individuality. He had a

good parentage, and he inherits the will and industry of his father, and the piety, honesty, and Christian devotion of his mother; hence it is not surprising that he exhibits great mildness of disposition, blended with great firmness of character.

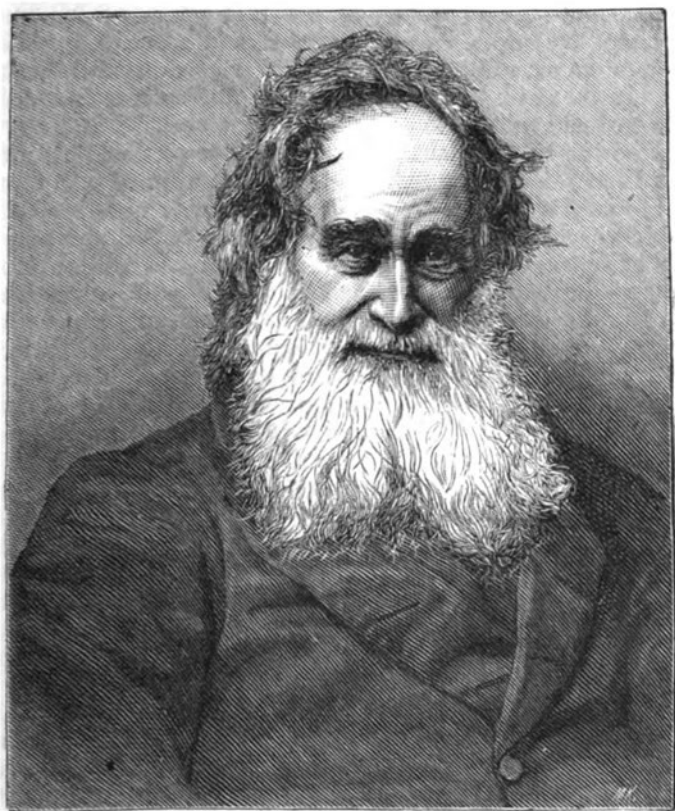
His head tells the story of his unbounded love for humanity, and his strong desire to relieve its woes. His head is long, very high, and narrow. The frontal lobe is long and full in the centre. He has a long arch to the eyebrow, and there is great height from the root of the nose to the coronal brain. This form of forehead has given him great availability of intellect, versatility of talent, and ability to acquire scientific and practical knowledge easily. He makes minute observations, has a correct eye for proportion, quickly perceives the various conditions and qualities of things, and is not only a good judge of nature, but is thoroughly in love with all her picturesque beauties. Order is one of his most prominent perceptive faculties, and it has enabled him to systematize, plan, arrange, and have everything done according to some rule in his mind.

He is well adapted to the study of the natural sciences and of human nature. His full eye and his large central forehead, with his peculiar temperament indicate that he has a literary turn of mind, an excellent command of language, a retentive memory of words, and the ability to express his ideas fully and correctly by speaking and writing. His appreciation of mirth and wit, his humour, ingenuity, taste and imagination, are also indicated. Comparison and intuition are very large and strongly marked developments, and give him great aptness in teaching, illustrating, explaining, and simplifying truth, reducing his knowledge to practice, and adapting himself to the minds of others. It was this combination of faculties that enabled him to form a written language for the savages among whom he laboured; also, subsequently, to teach the natives to read their own language from the books he had written for them.

His executive brain, strongly indicated, combined with his powerful, locomotive, bony, osseous system, gives him energy and executiveness. But Secretiveness, Acquisitiveness, and Cautiousness are not large enough to have been impediments in the way of his leading a life of personal sacrifice in the midst of continual danger. He has both moral and physical courage, pride of character, dignity, ambition to do good to his fellow-men, and to serve his Maker to the best of his abilities.

His social brain is well represented. He is specially in-

terested in children, and could have laboured for their welfare with much delight. His head is unusually high in the coronal region, and his moral faculties have exerted a controlling influence over his life and actions ; in fact, they were his impelling motives from the time he commenced his missionary labours. He felt it to be his duty to go forth and preach the Gospel to those who had no knowledge of it, and he could not have remained at home and pursued an ordinary business avocation, for his Conscientiousness pointed out the line of life



he was to take, and the message was not to be mistaken. It was enough for him to obey the call of duty, without taking into account the great difficulties with which he knew he would have to contend. From the beginning he has exhibited the spirit of the true missionary, leaving results in the hands of God ; being satisfied to labour faithfully from day to day,

without stopping to think whether he could have done better in any other sphere of activity than the one he had chosen.

It is rare to find a man in whom all the moral faculties are so evenly and fully developed as in Dr. Moffat, for frequently one or two moral attributes will rule the character. In such a case, there is often moral inconsistency according as one or other is in the ascendancy. But Dr. Moffat is conscientious, reverential, devout, zealous, exercises faith and belief in spiritual influences, and has had sympathy and beneficence sufficient to give him that love for the human race that has allowed him to devote fifty of the best years of his life to labour for its improvement, elevation, and salvation. When the moral and spiritual faculties of a vigorous and healthy man are in close alliance with the Divine mind, and derive their sustenance and support from that source, and all the other powers of the man's nature are subservient to his moral—he becomes a moral Alexander. Such a man Dr. Moffat has been. His life and organisation harmonise most perfectly. Had he remained at home he might have excelled as a scholar, linguist, orator, doctor, and been noted for his philanthropic labours; but he went to labour in the interior of Africa where no white man had been before, and settled among a barbarous, debased tribe of savages. He taught them to feel their importance as human beings, encouraged them to cultivate self-government, to repress selfishness and the spirit of tyranny, gave to them their own language in a written form, taught them to read this language, gave them ideas about building their huts, tilling the land, rearing their children, and introduced among them as many of the arts of civilisation as they could comprehend. He also endeavoured to stimulate their thinking powers, that they might provide for their future wants, and gradually emerge from their barbarous condition into a semi-civilised state, when they could begin to have some kind of an organised society, governed by laws which would protect them and give them the comforts of life.

Thus, he gradually prepared their minds to receive ideas of justice, obligation, responsibility, brotherly love, deeds of kindness, sympathy, pity, and forgiveness; finally, ideas of God, of immortality, and of a spiritual existence hereafter. To attempt the accomplishment of all this, a man must have great versatility of talent, self-reliance, also unbounded trust and confidence in a higher power. A selfish man would not have remained long among a tribe of the lowest and most undeveloped human beings, who were attached to their own modes of living, and were opposed to all other customs, who regarded the life of a friend or an enemy of but little conse-

quence, who placed no value on virtue, knew nothing of truthfulness, whose king acknowledged no one superior to himself, and wholly ignored the spirit of forgiveness or clemency.

Dr. Moffat lived with them over fifty years, and endured much persecution, great privations, hunger, thirst, fatigue, and encountered dangers from wild beasts as well as wild men. But when he left them, only a few years ago, through the influence of his labours the inhabitants were clothed and in their right mind, the bud of humanity had blossomed, civilisation had scattered its warming rays of light, and the gospel of mercy and love had developed these savages into peaceable men and women who began to respect life and property, were modestly clad and well behaved, and, more than all, were civilised and christianised, and thus they remain to this day.

What a change has taken place in sixty years in Central Africa! How much more valuable the whole country has become! The land, dwellings, food, cattle, and especially the men and women are now of some importance. Before, the king lived, ruled, and acted as a tyrant; now he serves, fears, and loves a higher power than himself. The people formerly feared their king, and enjoyed themselves only by developing their animal nature; now they regulate their conduct by intellectual and moral standards.

A man who improves stock or reclaims land is considered a great benefactor; how much more is Dr. Moffat a benefactor and philanthropist? He has not only improved the stock and land, but the human race.

He worked for neither emolument nor fame, but for the love he bears the human race, and the value he puts upon the human soul. Almost any man with a moral organisation could afford to teach and preach in civilised and christianised England, even with a moderate salary, for he is almost sure to reap a harvest from his efforts; but to go among savages and wild beasts, and unfold the mind itself, and wait patiently for any good result, requires great personal sacrifice.

Few men have greater claims to the name of philanthropist than Dr. Moffat. These can be summed up—first, fifty years of personal sacrifice, separation from home and friends, solely to benefit a savage race; secondly, the translation of a king, queen, and subjects from the lowest depths of barbarism and ignorance into a degree of intelligence which will allow them to have an organised society, the formation of a written as well as a spoken language, which they never had before, and the creating in them the disposition to read and comprehend this language, and a willingness to be civilised and christianised so that they now believe in God, immortality, and spiritual existence.

L. N. F.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE III.

(The Doctor repeated briefly what he had said in his preceding lecture on the antiquity of the doctrine which assigned to the mind a plurality of forms, and on the influence of the constitution, or temperament, in determining the degrees of activity of these powers; he also remarked, that exercise, and the mutual employment of the mental faculties, had the greatest influence in increasing their activity.)

I shall now mention how we may distinguish the nature of the different functions by the external signs. When speaking of size, Ladies and Gentlemen, you will recollect what I said of the different dimensions; you must not attend merely to an elongation of the cerebral part, but regard also the breadths: the cerebral parts may be long and narrow, or short and broad; or they may be short and narrow, or long and broad. Experience shows that these differences of size exercise an influence on the manifestations of the mind; and I certainly prefer cerebral parts which are thick, to those which are merely narrow and elongated. Moreover, in considering the size, you must not confound protuberances with development; you must form a clear idea of what is called a protuberance in phrenology. Protuberances do exist, and we must see how they exist: if a given cerebral part be more developed than the neighbouring parts, then there is a corresponding protuberance of bone over that part. Yet recollect, that the development may remain equally full in that part, and the neighbouring parts being as well developed, the whole surface will be smooth, and you will not have a protuberance. (The distinctions between protruberances and development were then illustrated by referring to two casts.) The development of these parts is the same in both skulls, but the other surrounding cerebral parts are larger in the one than in the other; therefore, in judging of the influence of size on the manifestations of the mind, you must take this into account. The protuberance is more conspicuous in the first, because the neighbouring parts are all small. Look at these skulls, the one has a more marked protuberance than the other posteriorly; yet if you were to draw a line over the middle of the head, you would find more brain in the occipital region of that head on which the protuberance is least apparent, because there is a greater development of the surrounding parts. The finest

heads may have no protuberances whatever, and the smaller heads have certain parts larger, apparently, than the same part in the finest heads.*

These distinctions being admitted, we come now to the question—which are the fundamental powers? Can we ascertain these fundamental powers of the mind by the degree of the cerebral development? We admit that it is difficult, but, like other difficulties in phrenology, it must be overcome by an observation of nature. Can we discover them by reasoning? No, it is impossible. We must also admit, that the reasonings of the schools have, so far from accelerating, prevented the discovery of the functions of the brain. Men shut themselves up in their closets; they take partial views of a science, and they try to make nature bend to their opinions, but nature goes on unaltered. In all systems of philosophy, if you trace them from the most ancient times to the present, you will find that there is a peculiar tendency to generalize ideas, and the explanation given of the mental operations is also general; and here I must say, that all general notions are vague. Go to the animal kingdom, and ask philosophers, why animals do various actions? their



WARREN HASTINGS.



HORNE TOOKE.

* The Doctor's meaning is not very clear. What he means is that it is necessary to judge of the actual as well as the relative size of an organ. Thus, if Philoprogenitiveness be large, and the surrounding organs small or moderate in development, the former will appear to be relatively larger than it would if the adjoining organs were of equal size. The same may be the case as regards the organs of the intellect. If a person has large perceptive organs and small reflective, the former will appear to be relatively larger than in the case of one who has perceptive equally large, but has also large reflective faculties. The annexed cuts will illustrate the point. In both Firmness is about equally large, but in Warren Hastings it seems to be much larger than in Horne Tooke, because of the smallness of the surrounding organs in the former and their largeness in the other.

answer is, by instinct. Ask, why some animals confine themselves to certain situations? and they will say, they do so by instinct. Other animals migrate; it is by instinct. Some make provision for the winter—by instinct; others sing and make no provision for winter—by instinct. Instinct, according to them, is the cause of all the various actions of animals; instinct explains everything. Will you be satisfied with such information, or with being told that one condition of the brain produces all these actions? If we see that a young duck, when hatched by a hen runs into the water, and that the birds which sing make no provision for the winter, and that other animals place sentinels to give the alarm on the approach of an enemy—do not these things show, at least, different instincts? If we cannot grant positive knowledge to the animal kingdom, we must grant that they have determinate instincts. Again, if I were to say to you I have an animal in my pocket, would you not ask, what animal? If I were to tell you it was a bird, would you not ask, what bird? and then you would go on to ask the genus, the species, and the variety. If I were to say I have a sensation, might you not ask, what sensation? If a person in writing natural history were to say, "the river runs down the mountain," or "the circulation of the blood exercises motion," would that explain to you the causes of the different motions? In natural history we all allow that it is necessary to specify our knowledge, and then we soon become able to understand each other; but if we were to speak in a general way, we should learn nothing. No one denies that intellect is necessary to enable a person to excel in the fine arts; but how does it happen that one man excels in painting, another as an artificer, another as a poet; and that the man who can make good poetry may be a bad mathematician, whilst the man who is a good mathematician cannot construct a musical instrument. I know that this is all explained by the use of the terms understanding and intellect; and what do you learn by that? I shall speak more of particulars, and as I proceed shall show why philosophers are more fond of general statements than particulars. I do not mean to say that the things mentioned by philosophers do not exist; there is understanding and there is intellect; but I do insist that we must specify the particular sorts of understanding, and then we shall find that particular understandings are attached to particular instruments, and that is the whole.

If you trace the senses of hearing and seeing, you will find a peculiar apparatus fitted for them; and physiologists have adopted this mode of investigation, and have found peculiar

organs destined to peculiar secretions. Dr. Gall and his predecessors have for a long time looked for the organs of certain powers of the mind, as memory, attention, &c. There is attention, but you will see that the attention of individuals is not equal: some capable of attention to some objects but not others; these views were too general. Gall looked for organs of attention, of judgment, and memory, but he never could succeed; and here we come to the great step at which errors have crept in, of which I shall hereafter give you my explanation. Not being able to compare the individual parts with the individual mental powers mentioned in philosophy, he compares the actions of men; and do we not observe that from childhood some persons show particular dispositions to certain pursuits, whether to mathematics, to poetry, to painting, to music, and so on? Do we not observe that persons are born mathematicians, as it were, and that they are born poets and musicians? It is universally admitted that all genius is born, and that those persons who excel in any departments of the sciences show talents for them before they receive education. This has been a very ancient doctrine; but then the ancients went too far, they said that all ideas are innate: we do not say this, we only maintain that individuals show particular dispositions—not that every idea is innate. Do we not find that children show the different feelings in different degrees? and what parent is there who has not observed differences in the dispositions of his offspring? or who that has taken an interest in the education of children, has not seen propensities to certain actions in them, some good and some bad? If they do not do bad things, it is because they are told not to do so. It must have been seen that individuals are more or less inclined to different actions. Then Dr. Gall observing certain persons having certain dispositions extremely active, he examined their heads, and if he distinguished in their heads individual cerebral parts larger than others, he concluded that such parts were destined to such actions, and this was the first idea—the very rudiments of phrenology, which was soon made public. The objections which have been made to this first part of the study of phrenology are still adhered to by our opponents. Dr. Gall's nomenclature is imperfect in some respects, but not in all; and it should be remembered, that experience has established many points which were at first conjectural, and refuted others. Dr. Gall spoke of an organ of Cunning, as he observed persons more cunning than others; and the same of Benevolence and Religion, and he still speaks of the organ of Religion. Other persons have dispositions to actions which are criminal. Dr.

Gall observed that some persons liked to steal, and he therefore spoke of an organ of Theft. He remarked that those individuals who exist by one sort of actions have particular parts developed. However, on reflection on the subject we must admit that there is no one power whatever which decides or constitutes the whole character; that there is no single power which produces the actions; but we shall find certain modifying powers, although in certain determinate characters there are some individual powers much stronger than others.

Now it is really the case, that certain lower feelings are very active in certain individuals, which feelings, if not combined with others, will produce the strongest proofs of their existence; and in animals, where the individual powers are not much combined, certain peculiarities of organization have been observed, and certain organs, as they are called, have been pointed out; names have been given to them according to the names given to the actions towards which they furnish the propensity. But I repeat, that the powers of individual parts never constitute the character in man, and that in speaking of character, we must compare the whole of the powers, for some exercise a great controlling influence over others, but we shall find in different persons certain powers much stronger than others; and it is the object of phrenology to point out such powers. It is the most difficult point in phrenology to point out these fundamental powers.

THE FUNDAMENTAL POWERS.

The object of phrenology is to point out the fundamental powers, and to point out the formation of the brain necessary for the development of the mental powers. (After a repetition of the argument advanced at the close of the preceding paragraph, the Doctor proceeded.) I shall now examine the number and the nature of the fundamental powers. I shall speak of some powers which have never been considered as fundamental, and I shall attempt to show that some others are not fundamental which have been so considered. If I speak of an individual organ, how can I know that such a part is destined to a peculiar function—to a particular mental power? Merely from experience. We know that the eyes see, that the ears hear, and so on, from experience, and so of other parts of the body. Now I say, if we find in nature, that certain manifestations of feeling take place in certain species of animals and not in others, and if we find that certain powers are peculiar to mankind, not being found in other animals, and if we find that the same sort of manifestations go on differently in different individuals, do you not think that we shall find

some diversity in their heads? All mankind have the same powers, hence we can only speak of their modifications as far as they differ in degrees of activity. You well know, I dare say, that the English nation has the same powers as the French, or other nations, but these powers may be stronger in some nations than others, and hence these constitute what is called the National Character. Persons come to me who have not studied the subject much, and say, have I such an organ? have I such a power? I always say yes. That is true; that organ does exist; but the question should be put in a phrenological way—have I this or that organ small or large in proportion to the other organs? Females have the same organs as men, but we shall find several feelings stronger in them than in men. We must compare and see that the activity of one organ is proportionate to the degree of activity in different organs.

If we examine comparative anatomy and comparative physiology—if we compare man with animals, we shall observe the same things. There are some persons who do not like the comparing of man with animals, but we must admit man to be an animal to a certain extent. I say to those persons who do not like the comparison, give up eating and drinking, because animals do the same. Many feelings are common to man and to animals; in philosophy it is difficult to separate man from animals, but distinctions can be made in phrenology. Animals have sensations in common with man, and so far may be said to partake of mind, but there was a time when this was not at all allowed; it was said that instinct did every thing, and that they had no intellect. Animals have instincts and men have inclinations, if you will change the term. Instinct has been admitted to be an internal impulse to do something, giving a tendency to certain actions, and we shall find certain powers in man which impel him to act, and you may, if you please, call them inclinations. Do not animals distinguish things around them? Do they not distinguish their enemies from their friends—their masters from others who do not treat them kindly? So do men. We should compare man to a certain extent with animals, for the functions of the greater part of the brain are destined to animal feelings.

We may look also to what is called physiognomy, by which is meant the study of the mind by the countenance: it is a doctrine which is very ancient, but which has not yet been reduced to principles. If you ask persons, whether there is anything to be gained by physiognomy, some will say yes, and others no; but every one is in some measure a physiognomist, for every one forms an opinion of another from his first

appearance. If you turn to animals, you will see that they are also physiognomists, but in a less degree. If you say to a dog that you will punish him, and look at him in good humour, he will not think you are angry; but look at him as you would when angry, if you wish him to be silent, and without speaking at all, he is silent. A child knows, by the expression of the countenance of his parent, whether he is angry with him or pleased. We often say, when we mingle with society, that we like this man, or dislike the other; but if asked why? we say we do not know; there is something in his countenance. This sort of knowledge is only to be gained by the observation of nature, and I should be inclined to call it the natural language.

We never neglect pathological facts; if we find that individual functions become deranged, we often find uneasy sensations complained of in certain parts of the head: we have many facts showing this. I would not depend on these only, but taken in connection with all the other proofs, this ought not to be neglected. I give you these considerations now, in order that it may not be necessary for me to repeat them hereafter; these are given in a general way. It may be asked, on what authority do we entertain these opinions? Not on our own;—we disclaim that; we have no other authority than nature. If any person wishes to have self-conviction, he must observe nature for himself; there can be no self-conviction without self-consideration. Whatever differences of opinion may exist among phrenologists, they must be decided by an appeal to nature. If Dr. Gall chooses to say one thing, and I choose to say another, a third might say, I will see for myself. If the brain be necessary for the manifestations of the mind here, it is necessary in every other place. Nature makes no exceptions to satisfy our caprices. This is sufficient to show the great advantage of making collections. In going through nature, any one may see the great diversity of form, and he should, when noticing the individual forms, notice also the individual development of particular powers; and if he wish to have these proofs by him, he has only to take the casts from nature. Now, in this respect you have a great facility for studying phrenology here; you have a finer collection of casts belonging to Mr. Deville than I have ever seen in any other place.* A person may, with a small number of casts, learn

* Mr. Deville was a business man who had a place in the Strand, and devoted much time to the study and promulgation of phrenology when first introduced into England. He did much towards establishing the science by taking casts of heads in all classes of society, and of the same person at different times, to show the growth of faculties. His collection of casts thus became very great, as did also his collection of skulls, which he obtained from many sources. They are now scattered. Mr. Deville did much to popularise phrenology, both by his examinations and his writings.

to distinguish the different prominences, and most striking peculiarities ; but if he wishes to become a sound phrenologist, he must multiply his opportunities, and if he find his observations confirmed, he may be satisfied that they are correct. There is no other way of arriving at a correct knowledge of any thing. Look into natural history, look at chemistry ; the same experiments being repeated and attended with the same results, are set down at last as positive truths. So in phrenology ; if we find the same manifestations connected with certain parts in different persons, sexes, and nations, then we set them down as truths.

With respect to many individual parts, I have been certain of their functions for a long time, and I could challenge any one to bring me an exception ; but of some others I will not speak so decidedly. In speaking of the powers of the mind, I wish to arrive at the fundamental actions ; this is difficult, as I have before mentioned ; but when I speak of the fundamental powers, do not conceive that I mean to speak of their application ; that is a point commonly misunderstood. I wish merely to speak of the powers themselves, without any application of their actions, whether good or bad ? People often say to me, have I such organs ? are they good or bad ? I cannot say that the powers and organs are bad or good. Good and bad cannot be applied to the powers themselves, but only to their actions ; we cannot say that the appetite for food, or the senses of seeing and hearing, are bad, but if we eat too much, that is bad ; if we see things we ought not to see, and listen to things we ought not to hear, they are bad. My opinion is, that every thing, as it is arranged in nature, is good, and that the abuse of it is bad, and that there is no power of the mind that may not, by its improper application, produce abuses and disorders.

We must distinguish the powers themselves : and another great difficulty which I find here, is in the nomenclature, to give exact names to these powers. Philosophers have merely spoken of the general manifestations of the mind, and have given names to them ; but we must be more particular, we must specify the powers, and hence we are obliged either to speak in circumlocution, or to give new names. Some people say that they do not like new names, but if I have an idea, must I not give it a sign ? If the first man gives names to all things known to him, and if in future ages things are discovered not known before, must we not name them ? I will not, however, dispute about names, only let us have the powers kept distinct ; I am ready to change the names at any time, if any person will suggest better. I consider it very important

to have a good nomenclature ; but let us have first clear ideas, and then let us try to find names to express our ideas.

In speaking of the individual parts, it is necessary to follow a certain order, but that is not of much importance, although some persons are attached more to the order in which things are arranged than to the things themselves. Beginning at the base and going upwards, we shall enumerate the individual organs. Dr. Gall has already spoken of the individual organs according to their local situations. Those who have got casts have remarked externally the different divisions of the superficies of the head. Many people think, that because the organs are marked on the surface of the skull, that they are really situated on the surface of the brain, immediately below the place marked ; but the organ itself occupies the whole of that part of the brain situated below the marked place. These (pointing to a cast on which the organs were marked) are merely the indications where the individual organs lie. In the middle line of the head you see that the organs are all marked single, but they are double* ; the hemispheres being separated by the falx, the portions of brain, the seat of the powers, being on each side, therefore they are double.

In the next lecture, I shall begin with the individual organs, and shall endeavour to make you understand my arrangement of them. I think the plan of speaking of the organs in numbers is objectionable on this account : two phrenologists might enumerate the organs in different ways, and would number them accordingly, as they began from the base of the brain or forehead ; consequently, although they both acknowledge the existence of the different organs, they would number them differently, which would induce some persons to think they were talking of different organs, and that they have not agreed in the fundamental powers, merely because they have not numbered them alike. Phrenologists should never speak in numbers on this account, although it may be a little more convenient. Let them speak of the powers themselves, and then they will all agree.

I shall follow an arrangement founded upon a philosophic consideration of the fundamental powers. I do not believe that all the powers of the mind have judgment. The ancient philosophers have made a division of the mental operations ; they have spoken of the heart and of the head, of understanding or intellect, and will ; I speak of two sorts of powers of the mind, and I think they are essentially different from each other in their nature. I speak of certain powers, called, in English,

* The brain is really made up of two halves, each half being an exact counterpart of the other.

feelings, and of others called intellect, and we shall see that the feelings depend upon the brain as well as the intellectual powers. Modern philosophers admit no difference; they confound the feelings with the understanding, and, by so doing, commit a very great error. They exist perfectly distinct and separate, but they depend upon the brain. Every body will allow that the understanding depends upon the brain; but if you say that the feelings depend upon the brain, they object to it. Yet phrenologists may maintain, that it is infinitely more easy to prove that the brain is necessary to the feelings than that it is necessary to the intellect; and I am sure, that if any man will pay attention to the subject, before six months are at an end, he will be convinced that the feelings do depend upon the brain. Indeed we shall find, that the organs of the feelings are even larger than those of the intellect in the majority of persons, and hence we see the great care of the Creator in providing men with such feelings as induce them to take care of and protect themselves. What is the most frequent cause of our actions? Is it understanding? is it reason? No; the feelings are the motives of our actions with respect to ourselves and the beings around us; hence I shall speak of the organs of the feelings in a certain order; and then of the organs of the intellectual powers.

An essential thing to bear in mind respecting the feelings, is, that they are blind. No feeling judges; I dare say every one knows what I mean by saying that the feelings are blind. There is a difference between the feelings. Some powers of the mind give impulses merely, there are others which modify them. Such as give impulses are what are called in phrenology propensities, whilst other feelings are styled sentiments, by which the propensities are modified. More, there is an essential idea relative to the feelings. We cannot subject them to the senses. Try to explain what hunger is, what fear is, or what anger is, or what benevolence, or what veneration is; it is impossible to bring them before the mind; the feelings must be felt. We must observe and see the manifestations, and if we find that certain manifestations are permanent throughout mankind, we must admit such to be primary or fundamental, whether we feel them or not. I shall begin in my next lecture, with the first genus of powers, the propensities, the organs of which are situated at the back part of the head.

ACTS, looks, steps, words, form the alphabet by which you may spell character.—*Lavater*.

SHAKSPERE AND HIS PHRENOLOGY.

We have before us a little work, probably now out of print, and not well known to the younger generation of phrenologists. It is by a veteran phrenologist, Mr. E. T. Craig, and is entitled "The Portraits, Bust, and Monument of Shakspeare," and is devoted to a critical examination, from a phrenological point of view, of the various likenesses which have come down to us of the immortal bard. The subject is so interesting, not only in respect to phrenology, but to literature also, that we cannot do better than give our readers the substance of what Mr. Craig has to say in a condensed form, while preserving his own words as much as possible.

Some of the best authenticated portraits are the productions of inferior artists; others are disputed; while several are frauds and impositions. It is therefore desirable to ascertain, as far as practicable, which portrait approximates the nearest to the "counterpart presentment" of the poet; and the light of modern science will enable us to arrive at a nearer point of truth and exactness than has hitherto been possible.

It is only within the present century, says Mr. Craig, that the discovery has been made that special characteristics are connected with particular portions of the head, and that mental greatness mainly depends on the size, form, and condition or quality of the brain. There is also a correspondence between the thorax and the abdomen, and the brain. We seldom find that a large anterior lobe and narrow base of the brain are combined with large lungs and a large abdomen; and we as rarely see that a large base and small anterior lobe are combined with small lungs and a small abdomen. There is, therefore, a language, so to speak, pervading the whole corporeal frame of man, which bears a relation to the size, form, and condition of the brain; while every part of the visible surface expresses the quality as well as the quantity of the mental power that pervades and animates it. Biographic portraiture, therefore, requires a knowledge of anatomy, physiology, phrenology, and ethnic physiognomy, as well as of art to perceive, delineate, and preserve the true, distinct, racial, and special type; and also to estimate the relationship in form between the body, the brain, and the moral and mental character and capability of a man of mark or talent.

Genius, by its intuitions, as in Da Vinci, Raphael, and Michael Angelo, often realises the truth at once, in its creations; while the ordinary mind fails to attain it but by slow and oft-repeated efforts.

A sculptor may mould a face, or turn a joint ; the painter may tint a lip, or foreshorten a limb, and yet fail to delineate the head accurately, because indifferent to the law which shows that the nervous system reigns supreme over physical development, and determines the elements of shape, contour, and physiognomy, as well as indicates special idiosyncracies of character and capacity. If a Bacchus requires one style of muscular development, Hercules another, and Diana a third,—so there is one form of head for the poet, another for the brutal criminal, and a different one for the clown. It is the imperfection in the brain that leaves the idiot a driveller ; it is its form and quality that exalts the poet in his temple, and raises the throne of the patriot in the hearts of the people. Men are eloquent on the bones of extinct animals, but silent on the convolutions of the brain, and their resulting forms on the head ; and yet the forehead of the highly-gifted musician differs from that of the mathematician ; that of the portrait-painter must vary from that of the linguist, engineer, and the landscape artist ; while men like Michael Angelo, Da Vinci, Shakspere, and Goethe, possessing universality of power, must require well-balanced brains, and finely-organised nervous constitutions, to accomplish their mission.

Thus the interest awakened by a portrait, bust, or statue of Shakspere is in proportion to the probable exactness of the artist in making the portraits special, biographic, and individually true as a likeness of the bard. But there was no painter of eminence in England at the commencement of the 17th century. It is reasonable to conclude, therefore, that no artist of eminence was at that time in England, to paint a portrait of Shakspere from life. Portrait painting was a luxury enjoyed only by the nobility or the very wealthy. The arrival of Jansen in 1618 extended the taste and increased the opportunity for the possession of portraits among those of the class to which Ben Jonson belonged ; and we find a likeness of him by Jansen about this period. It is quite possible, too, that he saw and copied a cast of Shakspere while painting his portrait. Jansen was followed by Mytens, Oliver, and others, till the arrival of Rubens and Vandyke. In the interval Shakspere's popularity had increased and his portraits multiplied. There are now likenesses by the modellers, the engravers, the sculptors, and the painters. But to arrive at a satisfactory approximation to the truth, we must adopt the tests of science and cerebral physiology, as far as practicable, in examining the likeness of the poet.

The bust in the Stratford Church first claims our attention, because it possesses the greatest authenticity as a monumental

effigy of the poet, and was erected within a few years after his death, under the superintendence or direction of the poet's family—Dr. and Mrs. Hall.

The bust is the size of life, cut out of a single block of soft stone. The hands are resting on a cushion, with a pen, as if in the act of writing. The figure, represented in the dress of the period, presents a stout, heavy appearance, and is executed without much artistic taste or skill. As a work of art, it is far inferior to the monuments of the period in the neighbourhood—such as those on the tombs of the Cloptons, Sir Thomas Lucy, and others. After the manner of the times, the monument was painted—the hair, beard, and moustache of an auburn colour, and the eyes hazel; the dress consisting



SHAKSPEARE : from the bust in Stratford Church.

of a scarlet doublet, over which was a tabard, or loose black gown, without sleeves. These details would lead to the supposition of an attempt to obtain an exact likeness. Having a cast taken from the face of it now before me, I can appreciate its effect on those who are prepared to accept as truth what has so strong a resemblance of life and reality. Sir F. Chantry, himself a sculptor; Hugh Miller, a stonemason; Bullock and Fairholt, artists—all speak in approval of the monument; but they look at it from a limited point of view, and without being qualified to perceive the incongruities that are apparent to the ethnic student, the physiologist, and phrenologist.

According to Dugdale, Gerard Johnson, the "tomb-maker," was employed to erect the monument of Shakspeare in the Stratford Church. Wheeler states that he resided in London, and employed a number of journeymen and apprentices. He appears to have been much engaged, and probably made his own designs, and left the details to be elaborated by one of his journeymen.

It is the opinion of Chantry, Bell, and others, that the tomb-maker worked from a cast of the face taken after death. The face of the bust belongs to the true Warwickshire type of physiognomy, found among the mass of the people. It is broad, and the cheek bones are low; the jaw heavy, and rather massive; the cheeks round, full, fleshy, and flaccid. The upper lip is very long, and the moustache coarsely cut; the tuft on the chin rather thick, and rudely indicated by the tool of the workman. The face has a cheerful, jovial, life-like look in the expression, but the features are not indicative of sensibility or refinement. The head runs up high towards Firmness: it is broad across the perceptive region, and expands towards Acquisitiveness and Ideality—a feature not accurately given in some of the engraved portraits of the monument. Hain Frizwell says—"The skull is a mere block, and a phrenologist would be puzzled at its smoothness and roundness. It has no more individuality than a boy's marble!" It is the facial and cranial contour that renders the bust, as a portrait, enigmatical.

The face of a man of great intellectual and moral power generally bears deep traces of thought and feeling in its habitual expressions, form, and texture; while soft, round, undefined fat cheeks, drowsy eyes and expressions, speak of feeble mental powers and slothful habits. These effects arise from the action of the brain on the nerves, which expand themselves on the face and the eye, and where the mind finds its most responsive and sympathetic indicators. When viewed from the floor of the chancel, the fleshy character of the face of the bust predominates. To be able to do it justice, the spectator must be placed in a position where he can examine it in a line before him. It is very evident that the tomb-maker had not the cast from the British Museum to guide him. Mr. Fairholt, F.S.A., says—"The whole of the face has been sculptured with singular delicacy and remarkable care, except in one instance, which indeed still more strongly confirms the position now assumed. The eyes are not only badly executed, but are untrue to nature: they are mere elliptical openings, exhibiting none of the delicate curvatures which ought to be expressed; the ciliary cartilages are straight

hard, and unmeaning ; and the glands at the corners next to the nose entirely omitted." The inartistic manner of dealing with the eyelids leads him to conclude that the artist followed a good model in other parts of the face. But, on the other hand, it will be admitted that a cast taken after death could not give that fulness to the upper eyelids here indicated. A form prostrated by fever, and wasted by disease, would give to the eyes a sunken aspect ; and if he worked after such a model, the artist has taken great liberties, not only with the eyes, but other parts of the face. The forehead is large, and has, from large Comparison, a preponderance in the upper part ; while Causality and Wit are the least indicated. Individuality and other perceptive powers are only moderate in their development. The openings in the eyes show that they were made on a cast which served as the model for the bust.

It was the custom of artists in Shakspeare's time to take casts after death from the face and forehead of persons belonging to the nobility. Johnson's model was from a plaster mould ; and the fulness of the fleshy parts of the cheeks, the eyes, and the drawn-up nostrils, would all mark themselves on a mould from a living person. The face of the original cast was probably without a moustache, which was very inartistically supplied by the tomb-maker, either in applying his material to the face of his model, or in chiselling it from his fancy. It is rudely cut, and curled up. If taken after death, neither the moustache nor the hair of the head would have retained their curls, as it is necessary to reduce them to a smooth, even surface in taking a cast. They have been added by the artist to make the bust pleasing, life-like, and "picturesque." The full and heavy appearance of the face and figure lead to the conclusion that the original would not be able to sustain long and continued mental exertion—would be rather fond of ease and the gratification of the appetites—liable to fits of impulsive good nature and passionate utterance.

The chief value of the bust lies in the illustration of the fact that the head was rather large, and the complexion fair, and that the forehead was expanded at the sides above the temples. The dress was that of the day, and the hair and eyes were coloured in harmony with nature. But the temperament indicated—sanguine lymphatic—was not that of Shakspeare.

Although the portraits of Shakspeare are numerous, and a general character of a high forehead and sedate expression prevails throughout, there are differences and contrasts which are perplexing, both to the artist and the public. As it becomes necessary to make a selection of those which have the

best claim to examination, it will reduce the series of portraits to those reputed to be the work of Droeshout ; that of Taylor, or Burbage, called the Chandos, and now belonging to the National Portrait Gallery ; the Zetland, the Lumley, and the Jansen Portraits. These have formed the materials out of which many pictures have been painted—such as the Warwick, the Felton, and other portraits.

Several of the portraits exhibited differ very much in some essential features ; while other elements could not exist together in the same head, or in that of a poet of Shakspeare's proclivities. The forms of the head are as various as the physiognomies are perplexing ; while the colours of the complexion are equally contradictory. If we are to rely on one artist, then Shakspeare had a head enormously enlarged in the coronal region, as in the Felton head ; while other portraits indicate the brain deficient in the moral sentiments. According to the painters, the eyes of the poet were, at the same time, black, brown, and blue ; his nose, too, in one portrait is Roman, in another Grecian, a third aquiline, a fourth snub, and others are of the composite order. The upper lip in one likeness is very short, in another very long. The hair, moustache, and beard are painted by one as black, another brown, a third reddish brown, and by others flaxen ; and the complexion all shades, from very fair and light to very dark. These opposite attributes reduce the range of view to the elements of form and proportion in the facial contour, the cerebral developments, and the physical conformation of the body. The temperament was evidently a combination in which the mental, the nervous, and sanguine predominated, imparting great susceptibility, quickness, and love of action, which were undoubtedly attributes and characteristics of Shakspeare's physical tendencies.

Next to the bust in the church, the engraved portrait by Droeshout claims our attention. It was prefixed to the first edition of Shakspeare's plays, published by Heminge and Condell in 1623, and is believed by Mr. Halliwell to have been engraved from an original picture. Heminge and Condell were "fellow-players" with Shakspeare, and knew him well and intimately. The portrait has the further testimony in its favour in the following lines by Ben Jonson, a friend and companion of the poet, and inscribed on the page opposite to the engraving :

The figure thou here see'st put,
It was for gentle Shakspeare cut,
Wherein the graver had a strife
With Nature, to outdoe the life ;

O, could he but have drawn his wit
As well in brasse as he hath hit
His face, the print would then surpasse
All that was ever writ in brasse ;
But since he cannot—Reader, looke,
Not on his Picture, but his Booke.—B. J.

These lines indicate that the face was represented with some degree of truth and faithfulness. It may, however, be observed, that Droeshout could scarcely have delineated Shakspeare from his own knowledge, as the artist was not in England until after the death of the poet. He did not copy the cast from the face now in the British Museum, and probably relied either on Ben Jonson or Burbage for a portrait and description, or he took the Stratford bust for his model. But this is very doubtful, because he was a faithful copyist, and the engraved portrait and the bust are materially different.

It may be observed that the collar is not of the fashion of Shakspeare's class at that period. Artists have, until the present century, paid greater attention to the face and costume than to the head. They are, with a few exceptions, even yet less exact and minute in the delineation of the head than the face. Now, the configuration of the head is the best biography of a man of intellect, talent, and character. The Droeshout head appears too high for its breadth, and inclines to a greater resemblance of form seen in Scott than Byron, Canova than Chantry, West than Flaxman, of Wordsworth than Burns. If there is a slight similarity to the general form in the face of the Stratford bust, there are striking differences in particular features. The nose is more prominent, well defined, and finely marked, with a flowing outline, and the nostrils rather large. There is the long upper lip, and a general correspondence with the mouth of the cast and the bust. The eyes are large, and in life would be full and lustrous, but not so prominent as in the bust, the Stratford, or the Chandos portraits. The head, however, is comparatively narrow, and so very marked in this respect that it indicates not only weakness in the portrait, but feebleness in the character, and tends to diminish my reliance on its accuracy as a faithful likeness, at least as regards this portion of the picture. The organ of Secretiveness, so essential to the actor, the critic, and the student of character, is indicated as very small. If Shakspeare was not the best of actors, he was acknowledged to be a successful teacher of those players who sought his instruction as a tutor, as in the case of Taylor and others, who became eminent on the stage in their elocutionary delivery. The organ of Destructiveness, which forms so important an element in

energy and force of character, depth of utterance and action, is very small in the engraving. Constructiveness, manifestly a great power in the mental structure of the poet's composition, is also indicated as deficient. Acquisitiveness, too, is small, and yet Shakspeare was the only actor of his day, besides Alleyn, who retired with a competency, and who afterwards showed a prudent regard for the accumulation of property. As it is doubtful whether the engraver ever saw the living form of Shakspeare, this feebleness in the breadth of the head would enable him to pourtray other marked features to the satisfaction of Jonson, Heminge, and Condell, and thus the imaginative faculties are represented as very prominent. Ideality, Wit, Wonder, Imitation, Comparison, and Causality are all very conspicuously indicated as very large. The perceptive faculties are scarcely so well marked as to accord with the power of keen observation and vast command in range of view in dealing with physical objects, so evident in his works. This may be the fault of the engraver. The relative deficiency is partially visible in the bust and the Warwick portrait, but does not exist in the Jansen, the Lumley, the Felton, or in the Chandos portrait in the National Portrait Gallery. It is still more strikingly different in this feature to the mask from the face of Shakspeare.

Although these characteristics in the engraving do not all harmonise with what we know of Shakspeare's career and character, there is one feature that agrees well with Jonson's worship, Spenser's admiration, and Milton's praise—the engraver has given a large endowment of Benevolence and Veneration in addition to all those faculties which delight in the gay, lively, and cheerful aspect of things; while the passions and propensities are only small, tending to that kind and benignant expression indicated by the endearing epithets, "Sweet Will;" "My gentle Shakspeare." But then, with such a narrow brain there would be a lack of force to deal with those powerful and passionate dramas so terrible and terrifying in their life-like realities, where we see rage, jealousy, and revenge, bursting all the ties of affection, pride, and ambition, and using poniards and the deadly poison to gratify their vengeance—all working with an intensity and power irresistibly illustrative of the breadth and energy of the poet.

The physical proportions of the Droeshout figure harmonise better with a fine temperament and an intellectual head, than either the Stratford bust or portrait; and the same relative proportions are observable in the mezzotinto portrait by Wivell, the Lumley likeness, the Zetland, the Warwick, and especially so in the Jansen portraits.

The Stratford portrait, considered by some persons as an interesting portrait of Shakspeare, and now preserved in the birthplace of the poet, was formerly in the possession of Mr. Hunt, the town-clerk of Stratford, and belonged to his grandfather, a gentleman who took a prominent part in the affairs of the Garrick Jubilee in 1769; but there the pedigree ends. Although often seen in a lobby in Mr. Hunt's house, it had remained unnoticed and unknown, and passed scores of times by Mr. Halliwell without any idea of its importance, until it had been shown to Mr. Collins, a picture restorer, who was, in 1861, employed in cleaning and restoring the tints of the monumental effigy in the church. On removing a ferocious looking beard and moustache, there was discovered a portrait of Shakspeare!—a result that recalls the experiment made on Talma's Shakspeare, painted on the bellows, which when cleaned proved to be an old lady in a cap and kerchief!

In examining its claims to be considered a portrait, we find it bears a strong resemblance in its general form to the bust in the church—both in the dress, the moustache, imperial, and the curls in the hair. The style, as well as the tints of the dress, are in every detail a copy of the bust; in fact, it is an old portrait with a new face, called a Shakspeare,—but no more like what Shakspeare was than a Dutch dray-horse is to a racer, or a Solan goose to a skylark.

The full round globular forms which make the bust doubtful as a copy of Shakspeare, are here exaggerated, and render the facial and cranial contour of the portrait inferior to the bust. The heads of all great masters of verse have the group of organs essential to the poet of imagination and fancy *large* as seen in the portraits of Tasso, Dante, Ariosto, Chaucer, Spenser, Fenelon, Milton, Pope, Schiller, Wordsworth, and others; and yet Shakspeare, greater than all, is here portrayed without the poetic organisation, either in form or condition. Wonder, Ideality, and Wit, are only very moderately indicated, and the stronger passions are marked with prominence, while there are no salient angles in the coronal region as moral bulwarks to resist the attacks of the grosser feelings. It would be a great mistake to take any feature in this portrait as a model for a statue of the bard.

The Chandos portrait is the most attractive, the most picturesque, and as a photograph finds the greatest favour with the public. But whatever the portrait originally may have been like, it comes with a questionable pedigree before it belonged to Betterton; and since his day it appears to have been much altered and improved. Sir Godfrey Kneller copied it; Ozias Humphrey amended and improved it; Sir

Joshua Reynolds retouched it ; and it is said, too, that Sir Thomas Clarges got a young man, who was thought to be like Shakspeare, to sit for the portrait. It is impossible to trace any traditional resemblance to Shakspeare in the portrait in the National Portrait Gallery ; and unfortunately it carries its own condemnation on the face of it. It looks like a composition made to please the eye, and it has not the slightest heritage of the Warwickshire physiognomies—either those of the Shaksperes or the Hathaways—so far as I can trace them in their living representatives.

The forehead of the Chandos in the National Portrait Gallery is high, square, and noble in its proportions, but the face is somewhat dark, and the lips are thick, prominent, and sensual. The eyes are large, and the nose also is large. There



SHAKSPERE : from the original in the possession of the Duke of Somerset, and painted from life by Jansen.

is a moustache, a full beard and whiskers, in the style introduced by Rubens in his portraits after his arrival in England in 1630. In this feature there is a great contrast to the Stratford bust and the Droeshout engraving. Besides, Shakspeare's complexion was not dark, but fair and light. The form of the head, too, is carried too much into the abstract and metaphysical type to belong to the practical character of Shakspeare.

Three portraits of Shakspeare, by Jansen, were exhibited in the collection at Stratford,—one belonging to Mr. Staunton, another to Mr. Flack, a third to Sir J. L. Kaye, besides other copies after this painter. The Countess of Zetland exhibited a very interesting portrait, considered to be original. The Earl of Warwick had two portraits said to be of Shakspeare.

The Somerset Jansen has the date agreeing with the poet's age—"æ. 46, 1610." This portrait is a valuable work of art, and is regarded as a genuine portrait of Shakspeare. Two of the above Jansens in the exhibition have the poet's name, and age 47, across the upper part of the picture.

The portraits by Jansen introduce a different type of head to those hitherto described. The best of these represent a refined, intellectual, and handsome man. The facial contour is aquiline, and the complexion fair. It is a singular fact that one or two of the portraits, and especially that belonging to Mr. Flack, agree with the mask almost in every particular. There is the same oval face and fair complexion in both, the well-defined forehead, and very prominent yet evenly arched eye-brows. The upper lip is shorter than in the mask, but the moustache is separated in a similar manner. They both singularly agree in their phrenological characteristics; but the eyes are bluish grey. This seems to be an objection against the painting being from life, if the colours given to the bust at Stratford be true to nature, as they probably are, for they were painted under the direction of the poet's friends. As Jansen did not arrive in England till 1618, two years after the poet's death, he could not from personal observation know what colour the eyes of Shakspeare were. But if he painted his beautiful portrait from the cast of the poet's face, then he would use the painter's license, and give the colour to the eyes to suit the temperament and complexion, which is generally blue in the xanthous or fair-haired sons of Scandinavia.

It is a curious fact that seven other portraits exhibited in this gallery had the aquiline physiognomy, making eleven out of thirty. That belonging to the Countess of Zetland has the same oval face, arched eyebrow, and sandy or light auburn hair; and when the mask taken from the face was placed near the portraits, it seemed to say, in the words of the poet:—

"Compare our faces, and be judge yourselves."

And it is impossible to avoid the conclusion that the best of the Jansen's has been painted either from this mask or one marvellously like it. In either case the difficulties which have hitherto hung around the portraits of Shakspeare seem to vanish, and we begin to see him in his form and feature as he lived; finely organised in his mental combinations, with an ardent and highly impressionable nature and constitution, and all harmonious with his comely physical proportions, his handsome features, mental activity, and, above all, with a cerebral sensibility increased by the temperament of genius.

There is at Stratford an old painting of a group of figures representing a scene from Shakspeare's *Taming of the Shrew*,

which is said to have been painted by Thomas Hart, a nephew of Shakspeare. In this group is the figure of Shakspeare himself. The painting is in the possession of Mrs. James, who owns several other relics which belonged to the Hornbys, relations of the Harts. In this old picture Shakspeare has the physical proportions and physiognomy indicated both by the mask and the Jansen portraits—a singular confirmation, for Thomas Hart, as scene-painter, must have been familiar with Shakspeare's general appearance, either from knowledge or tradition. He has pictured him more true, physically speaking, to what is possible for the player, the writer, and the man of incessant activity and industry, than the rotund effigy, or the plump picture called the Stratford portrait.

Accurate casts of the whole head are the best and most reliable biographic memorial portraiture of men of note ; and ere long these will be held in higher estimation than the fading colours of the decaying canvas. Even the antique busts of the Greeks and Romans, with their quiet smile, or austere glance, yet truthful contours, awaken a vivid sympathy with the distant and forgotten members of the great family of man, and convey a fuller conviction of the identity of our species, and bring the past nearer to the present, than volumes of heavy historic records ; because they appeal to sight and perception of form, proportion, and fitness in character.

It is rather remarkable, in connection with this Exhibition of Portraits of Shakspeare in the town where he was born, lived, married, died, and lies buried, that a cast, taken, it is said from his face after death, should, after 250 years' absence, be exhibited side by side with portraits by artists of various periods. The test was a severe one, but highly important in its results, if we are enabled thereby to show that certain popular portraits are not likenesses of Shakspeare, while others have a strong if not an undeniable claim to be considered true and genuine portraits of the poet.

The cast from the face was brought to light about 15 years ago. It is alleged to have been originally purchased by a German nobleman attached to the Court of James I., and preserved as a relic of Shakspeare in the family of Kesselstadt, until the last of the race, Count von Kesselstadt, a canon of Cologne Cathedral, died in 1843, when his collection of curiosities was sold and dispersed. Dr. Becker purchased the cast and the miniature copy of it, and brought both to this country. On leaving England for Australia, he left the mask in the care of Professor Owen. On the back of the mask is the inscription—"A. D. 1616." The miniature which has accompanied it has a wreath around the head intimating that it is

the likeness of a poet. Hain Friswell justly observes that "the cast bears some resemblance to the more refined portraits of the poet;" and I propose to direct attention to a few of these points of agreement or difference. There is no ground for the statement of those who think this mask furnished the tomb-maker with his model for the monument in the church. It is utterly impossible; for in nearly every facial and cranial outline where a comparison can be instituted, they are dissimilar.

The mask has strongly marked, yet regular and finely formed features. The brain is the most prominent over the lower part of the forehead, and at the sides. It is well and harmoniously developed in the region of the perceptive faculties, which are very large, as indicated by the sketch of the profile of the cast, and differs in this respect from the Bust, the Droeshout engraving, and the Warwick portraits, but singularly agrees with most of the facial and cranial outlines



of the Jansen portrait. On the mask the hairs of the head, eyelashes, moustache, and beard, still adhere to the plaster, and are a reddish-brown or auburn colour, corresponding with the portraits by Jansen, and in some measure with that of the Stratford bust. It was objected that the hairs could scarcely be so repeated on a cast. This has frequently occurred in my own experience, and is very easily explained. On taking a mould of the head of Dr. King, at the request of the late Lady Noel Byron, I found several hairs adhered to the plaster, and reappeared on the cast, and so also in other cases. These hairs in the cast of Shakspeare's

face are an additional corroboration of the possible temperament and complexion, and, if genuine, an argument against the truth of the Chandos. *Both* cannot be genuine.

It was the custom in those days to take faithful impressions of the faces of the nobility, and probably in some cases in wax, which may account for the marked and characteristic features on many of the monuments of the period, as seen in those of Sir Thomas Lucy and his family in Charlecote Church. The cast in the British Museum was probably taken from a mould of wax, and certainly by an experienced artist; which accounts

for the sharpness of the work, the clearness of the outlines, the flesh-like appearance of the surface, and the undisturbed hairs imbedded in the moustache, and tuft on the chin. There are markings of the workman's tool on the surface of parts of the moustache and beard; but there has been no mould taken from this cast, as is evident from the condition it presents, nor is it very likely that another cast was taken out of the "waste" mould. It has been suggested that the artist might work from this as a model, and then sell it. The monument at Stratford could not possibly, as previously stated, be made from this cast, nor did it offer any suggestion to the tomb-maker. The body had so far wasted, that the cartilages or nasal bones have been marked in the mould, and the eyes are sunken.

The mask has a mournful aspect, and sensitive persons are affected by its apparent reality. It is said that Fanny Kemble, on looking at it, burst into tears. It is utterly destitute of the jovial physiognomy of the Stratford bust, and it bears the impress of one who was gifted with a most extraordinary range of perceptive observation and ready memory, great facility of expression, varied power of enjoyment, much sensibility, and great depth of feeling. On the upper part of the forehead, near to the left side of the organ of Comparison, there is, I observed, a slight depression, as if produced by a blow inflicting a wound on the skull at some early period of life. It has the appearance likely to be presented after receiving a right-handed blow from a stick or falling body. Those of a lively fancy may recall the Fulbrooke deer-stealing, and the gamekeeper of Sir Thomas Lucy, as an explanation. I simply direct the attention of the curious to the cast in the British Museum in confirmation of the statement. Presuming that the whole head was organised in proportion to the frontal portion indicated in the mask, it would be a little above average, but not of the largest size, and the favourable combinations of the observing powers, and sensibility would give extraordinary facility and executive skill; and if not the cast from Shakspeare, it is from one who could have succeeded in any department of practical art, science, mechanics, music, painting, sculpture, or literature.

Phrenology is a severe test to apply, and the mask and the Jansen portraits pass the ordeal well and satisfactorily, while all the others fail in some essential feature or combination.

The sides of the head in the cast are well developed, and are large. The perceptive faculties are still more decidedly marked in the size of their organs: thus Form, Size, Colour,

Weight, Locality, Number, Order, Eventuality, Time, and Constructiveness, are all very large ; and Ideality, Wit, Language, Comparison, Causality, Benevolence, Veneration, Secretiveness, and Acquisitiveness, are large ; while Imitation, Wonder, and Alimentiveness, are a little less indicated.

The forehead belongs to that class of men who have shown extraordinary skill in dealing with the actual and the practical, rather than the abstract, either as philosophers, artists, statesmen, or generals, such as Michael Angelo, Leonardo da Vinci, Henry IV., Loyola, Luther, Poussin, Adam Smith, John Hampden, Selden, Audubon, Napoleon, and Washington.

Shakspeare was eminently practical, artistic, executive, and constructive, and only began to be dubious, abstract, or metaphysically theoretic, as he progressed in the development of his powers of mind and experience. He neither wanders with Plato in his Republic, nor with More in his Utopia, but takes the world as he finds it, with all its lights and shadows, and, with the intuition of genius, opens to view the human heart and its passions—their longings and conflicting aspirations, their varying and shifting phases, and portrays them with all the force of a profound psychologist.

The face of the cast, like the Jansen portrait, has a sharp, oval form ; that of the Stratford bust is a blunt or round one, as indicated by the respective illustrations. The chin is narrow and pointed, yet firm ; that of the bust well-rounded. The cheeks are thin and sunken in the cast ; in the bust and portrait full, fat, and coarse, as if there was great vitality, and a

“ Good digestion waiting on appetite,”

without much thought, fancy, or feeling disturbing either. The mask has a forehead finely formed ; the bust is ill-defined ; and the Stratford portrait is still more indefinite. The mask has a full-sized upper lip ; the bust a very large one, although Sir W. Scott lost his wager in maintaining that it was larger than his own ; for it was demonstrated, by the application of the compasses, that the advantage in length of lip was on the side of the wizard—the worthy Knight of Abbotsford. The nose of the mask is large and finely indicated ; that of the bust is straight, short, and small. The nostrils are slightly drawn up in the cast,—a feature exaggerated in the bust. Their ethnic physiognomies and cranial contours are utterly at variance with each other. The bust is a good example of the Teutonic face prevailing in the Warwickshire type. The mask is a union of the Norman grafted on the Saxon stock—the aquiline nose and oval face are united with the long upper

lip and fair complexion existing in a limited proportion of the inhabitants in the poet's native county, as slightly illustrated by the fine head of Sir Thomas Lucy. The cast indicates the man of keen observation, quick perception, with great executive faculty. There would be a fine sense of physical and artistic beauty and fitness, with a sensibility that would make the original a man of emotion, feeling, and probably of suffering. The Stratford bust, on the contrary, bespeaks the man of ease, enjoyment, keen appetites, and self-satisfaction. There would be latent force of character in the bust, with much good nature, yet ever ready to give occasional outbursts of passion. In the portrait, there is a good vital constitution, with great tenacity of property; cherishing the pleasures of life and existence. The mask and the Jansen portrait indicate the nervous sanguine temperament—the temperament of genius; the bust and the portrait the sanguine-lymphatic. There might be latent power to enjoy the productions of others, but there would be a lack of inspiration to create original idealisations of truth and beauty.

The answer phrenology would give to those who still believe the Stratford portrait and bust are the true image of the bard, is—that the forms are impossible with a poet like Shakspeare. Death does not alter the language once written on the ivory wall around the temple of thought by the hand of the Creator. A monumental effigy of Shakspeare, bearing the characteristics of the bust or the portrait, would deservedly become the scorn and scoff of future ages, for both artists and the general public are beginning to perceive and appreciate the relation between given forms, capability, and character.

HEALTHY WORK FOR WOMEN.*

Some four years ago I began, through the press and otherwise, to advocate new openings for women's labour, and especially those which would, while giving them independence, also secure to them the inestimable blessing of good health. We may safely say that posterity will be healthy or otherwise exactly in proportion to the health and strength, or the contrary, of the parents, especially the mothers of to-day. While indoor duties are freely urged upon women, I have always felt that physical training and outward exercise was sadly

* This was a paper read before the London Food Reform Society, on the occasion of their Conference in the Memorial Hall, on May 17th.

neglected ; hence we have women of delicate organisations, with a distressing development of nerves, and a small development of muscle.

The question of woman's labour is a wide one, and cannot be fully entered upon in a short article ; but most people agree that healthy work for women, which would combine the happy and healthy employment of all their powers, would be an inestimable boon. It is true that women of some classes do labour, but with what result ? starvation wages, in many cases a lessening of their strength and vitality, and too often premature death, or hopeless discouragement in the end. I earnestly long to open up one new avenue to the women of this country, where they may not only gain robust health, but an honourable employment. Nature is always kind, and well repays her votaries.

My project is to invite co-operation in getting up a company to secure an estate not too far from London where women could be trained in the delightful occupation of fruit, flower, and vegetable culture, along with the keeping of cows, bees, &c. The whole should be conducted as a woman's business enterprise : we need so much in this country to learn the dignity of labour ; and in this respect I think women especially need a baptism of common sense. Let nothing be thought menial that we are able to do, or which is useful to ourselves or to another.

It has been said, that man is a benefactor to his race who makes two blades of corn grow where only one grew before, and surely the women who can bless one city with an abundant, and therefore cheap, supply of fruit, will be an equal blessing. Who can say to what extent such an enterprise as the one I propose may grow ? Its success will be the clarion note for their establishment in every county. While our farmers are groaning under unprofitable seasons of competition, our women's fruit and dairy farms will, like the electric light, give radiance to the sinking spirits of our land-owners, while their produce is bringing new life and health to both giver and receiver. It is important, in these days of uncertain fortune, that girls as well as boys should be trained to usefulness. It is pitiable to think of the inert, useless lives of some young women whose only aim seems to be to dress and eat, an incubus on the overtaxed resources of the poor father, and little help to the care-worn mother, while they might be an additional strength to the family life, if their energies were turned in some useful channel.

Labour stands on golden feet, and, rightly directed, brings its own reward. Our sons are generally expected to enter

some of the fields of labour, and their path is opened for them, but too little has been done for our daughters. While Cambridge and Oxford are opening their hitherto closed doors to the enterprise of women in fields of literature, why should we not open means of industry and remunerative employment for them in respect to manual labour? It may be asked, Has any woman shown her fitness for the kind of labour proposed? I answer, many, both on the Continent and in America. An intimate friend of mine, Mrs. M. Louise Thomas, of Iacony, near Philadelphia, has a farm of twenty acres, where for many years she has not only been able, from the profits, to keep a large family, but to add to her capital. She can sell her eggs, butter, poultry, and other produce at better prices than neighbouring farmers, on account of their excellence. During the Centennial Exhibition, this lady entertained upwards of three hundred visitors at different times, and remarked that even this number of guests had made no perceptible difference to her, the supplies from her farm being so abundant.

The scarcity of fruit in this country is a thing to be regretted, seeing that its use is a question of health to the nation. Women in other countries raise fruit, poultry, eggs, honey, butter, &c., and we buy their produce; but would it not be more sensible to raise our own, and thus have it fresher, better, and cheaper, and at the same time keep the capital in the country? With this view, I should like to start a company to be called "The Horticultural and Dairy Supply Association, Limited," as a woman's business enterprise, believing that it has in it the elements of success.

In the first place it would form a new avenue for the employment of women, which would not come into competition with any other industry, while it would relieve the already overcrowded and unprofitable pursuits of women. Secondly, there is one peculiarity about fruit, that an increased supply and use increases the demand, thereby raising incalculably the standard of health throughout the country. Thirdly, the value of the estate would always be increasing.

I am glad to be reminded that Mr. Gladstone is of opinion that fruit, flower, and vegetable culture ought to be a lucrative employment in this country. He says that £1,704,000 worth of fruit is imported which ought to be grown at home, and a still larger quantity of foreign vegetables; in fact, £5,000,000 worth of fruit and vegetables find their way into our markets from abroad. Is there not, then, an abundant field for this kind of labour? But I am asked, Are women fitted for this out-door work? There is a great deal of nonsense talked about the weakness of women. It is like tying the feet as

they do in China, and then asking them to compete in a walking match. Women that are confined to indoor life and the wear and tear of household work might at first find outdoor labour trying, but it is all a question of use. The fishwives of Scotland are stronger than most men; they could run a race with them, and win. I have seen them carry burdens of fish that London costermongers would be quite unable to lift. If women could breathe country air, live wholesome lives, and use their muscles, the next generations would be a different order of beings in the matter of health and development. A professor of medicine, in speaking to his students lately on the choice of a wife, said: "By all means look for good health in the person you marry; do not judge of her only by seeing her in her home, though that is important, but ask her to take a walk with you, and go smartly up some hill. If she can keep pace with you, and not get out of breath, she will do."

I expect that the girls that will be trained at our fruit farms will be at a premium among sensible men. Regarding physical strength, I quote the following from a newspaper. "The wife of a German farmer last autumn ploughed seventeen acres of land; she mowed with a grass scythe for six days; she raked ten acres of hay with a horse, and did the work with a three-year old colt which she broke in herself, she having been the first to put a harness on the animal. She loaded, unloaded, and teamed all the lime and sand required for a new house twenty by thirty feet; she loaded and unloaded all the grain and hay grown on her husband's farm this season, besides doing much other similar work. This out-door work was done in addition to the usual housework, including the milking and caring for the milk of seven cows." But while I am in favour of this out-door work, I would not neglect the domestic department. Arrangements might be made that certain hours be devoted to indoor work. It may be said, What will you do in winter with the girls? That will be a most valuable time for learning domestic economy, having readings on horticultural science, and on all that bears upon the various phases of their work; and even in winter there would be the preparation of early fruits, salads, hot-house flowers, and dairy work.

I will only add that it is of the first importance that the establishment should be conducted on total abstinence and food reform principles.

M. E. PARKER.

A RACE FOR A WIFE.

From the French of JULES CLARETIE.

I have this story from a friend who was dear to me. He related it to me one day when we were talking of the hazards of life, more astonishing and more romantic a hundred times than the inventions of fiction. He had seen this little drama develop itself; he still knew the actors in it. "I will present you," he said to me, "and we will go together to Mezieres, where we shall find one of the heroes of this narrative still living. All the romances have not yet been written; the most marvellous have still to be published. And who knows how many romances each one of us takes away with him profoundly buried in the secrecy of his conscience, painfully smothered under the tombstone?" Eugene Decary did not know how true his words were; and the story of Jean Chevauchaux was the last that he told me. It is he who will tell you the story.

My father used to live at Rethel, in the Haute Rue, in a house I can still see before my eyes, with its slate roof and projecting beams, a hospitable house if ever there was one. Poor folks knew the way to it. They entered with their wallet empty and went away with it full. We were all seated one night at the fireside; my father was smoking his pipe and watching the fire burn, my mother was ironing, and I was reading, when we heard a noise at the door, and saw enter a boy with frightened looks.

"What is the matter?"

"It is a soldier, very tired, who has just fallen exhausted before the door."

My father loved soldiers. He rose brusquely, ran out, and there he was, before I had taken a step, coming in again with a young soldier leaning upon him, or, rather, my father had taken him up and was carrying him like a sack of corn.

My mother hastened to draw the big arm-chair up to the fire. The soldier was made to sit or rather to recline in it, and my father said, looking at the poor fellow:—

"Is it possible! Walking in that state!"

The fact is that the soldier was very thin and pale, his hair flattened on his forehead, the veins on his temples big as your little finger, his face black with dust. We were then in the month of October, and the weather was beginning to grow fresh, but the poor fellow was, nevertheless, sweating big drops

as if it had been the dog-days. He must have had a long tramp ; his shoes were in shreds ; you could see where the stones had torn the leather ; the left foot was bleeding. The soldier did not move, but remained in the arm-chair with his head thrown back, his eyes half open and white as a sheet.

My mother had already put some soup on the fire and a pan full of wine.

"Bah," said my father ; "the first thing to be looked after is the feet."

And, kneeling down, he began to tear and cut away the shreds of leather. The soldier's feet, all swollen and full of blisters, looked like the feet of the martyrs, swollen with pain and wealed by hard cords, as we see in the pictures of the Spanish painters.

My father dipped his handkerchief in vinegar and washed the wounds.

"You," he said to me, "make some lint."

And I began to tear up some old linen that my mother had taken out of the big cupboard.

Meanwhile the soldier had come to himself. He looked at us, at my father, my mother, and myself, and the two or three neighbours who had come in one after the other. His wandering eyes seemed to interrogate everything. It was no longer the road, the stones, the great deserted woods that he saw before him, but a gay room, with a ceiling of shining oak, a cloth on the table, a knife and fork laid, and a brown earthenware soup-bowl emitting a savoury smell of cabbage soup.

Then he raised himself up, leaning on the arms of the chair, and said to my father, with confused emotion :—

"Ah, monsieur ! but you do not know me !"

"Ah ! well that does not matter ; we will become acquainted at table."

We had already dined, but my father wished to bear the soldier company. He sat down to table opposite him, as it were brooding over him, and looking at the regimental buttons that shone on his cloak. The soldier ate, and ate heartily : my mother served him. My father took charge of the wine, and the glasses did not long remain empty.

"Well," said my father, suddenly, pointing to the tin box that the soldier carried slung on a cord, "you have finished your time, for there is your *congé*. Then why do you go and kill yourself by toiling along the highway ? I see how the matter stands. You have no money to pay for the diligence ?"

"I ?" replied the soldier. "I have received my pay and my bounty, and my mother had sent me enough to pay for a place in the *coupé*, if I had liked. But I could not !"

"I understand," said my father, who did not understand at all. Then he asked for another bottle of wine.

When the meal was over the soldier tried to walk. He tottered, uttered a smothered cry, and fell back into the chair. I then saw a tear in his eye. He was a young man, rather thin, but nervous, dark, and with an energetic look. He was not a man to shed a tear for a little, and that tear puzzled me.

"Ah!" he said, with a movement in which there was a little anger and a good deal of grief: "I shall not be able to walk until to-morrow morning!"

"Walk!" cried my mother, terrified.

The soldier shook his head.

"You don't know—you; I must," he said.

It was a vow.

In our Ardennes those primitive souls have respect and faith. I saw my father look at the young man in the face without astonishment, and with mute interrogation.

"Yes," said the soldier, "I will tell you the whole story. You have, perhaps, saved my life; I ought, at least, to tell you who I am. My name is Jean Chevauchaux, and my father is a wood-splitter at Mezieres. He is an honest man, like you, monsieur. Seven years ago, when I drew for the conscription, I was madly in love with Marguerite Servan, a good, hearty girl, and a pretty one. I had already asked her in marriage, and her father had not said no; but, you see, Pierre Puvioux had asked her in marriage at the same time that I did. Pierre Puvioux is a man of my age, who carries his heart in his hand, as the saying is, gay, and good-looking. I ought to have detested him, and he has remained my friend! Well, Father Servan said to me as he held out his hand:—

"'You are worthy to be my son-in-law, my lad; but, first of all, you must please my daughter. I will ask her.'

"Marguerite, when asked, said that she would gladly consent to be my wife; but she said the same when they talked to her about Puvioux. She loved both of us, one as much as the other; she hesitated, she did not dare to decide. But still she could not marry both of us.

"Time went on. When the period of the conscription came we drew lots, Puvioux and I, on the same day. I had number three, and he had number seven, and so we both of us became soldiers. For a moment I was in a state of great fright, I confess. People at Mezieres said that Puvioux had a rich aunt, and that she would buy him off. If Puvioux did not join the army, Puvioux would marry Marguerite, and I, knowing that I should be obliged to go, for I was poor, I thought I already heard the fiddler at the wedding, rending my ears and my heart.

"I must tell you that Marguerite Servan has not her equal. If I lost her now, after having waited seven years for her, upon my honour, I think I should blow out my brains !

"Luckily, Pierre Puvioux was not bought off ! His aunt died, leaving debts instead of a fortune. He had not a penny any more than I had ! We were obliged to shoulder our guns, and we were expected on our way-bill every moment. One night, Father Servan took us each by the arm and led us to an inn, and this is what he said to us as we emptied a bottle of Moselle wine.

"My boys, you are good and honest Ardennais, equal in merit. I love you with all my heart. One of you shall be my son-in-law ; that is understood. Marguerite will wait seven years. She has no preference either for you, Puvioux, or for you, Chevauchoux ; but she loves both of you, and she will make happy the one whom fortune shall choose. These are the conditions on which one of you shall marry my daughter : you start on the same day, it is probable that you will return on the same day. Well, the one who first comes and shakes hands with Father Servan, and says : "Here I am, my time is out ;" he, I swear, shall be the husband of Marguerite."

"I was astonished ; I thought I had misunderstood. I looked at Pierre Puvioux, and he looked at me, and, although we were sad enough at heart, we were certainly ready to burst out laughing.

"But Father Servan was not joking. He had discovered this means of getting out of the difficulty, and he meant to stick to it. I held out my hand and swore to act neither by ruse nor violence, and to let Pierre Puvioux marry Marguerite, if he returned to Mezieres before I did. Pierre stood up and swore the same, and then we shook hands while Father Servan said :—

"Now the rest is your affair. The only thing is to escape bullets, and to return safe and sound."

"He filled our glasses once more and we drank a parting draught.

"Before leaving I wished to see Marguerite. Just as I was arriving under her window—it was at dusk—I saw some one in the shade coming in the same direction. I stopped short. It was Pierre Puvioux. He seemed vexed to find me there. I was not particularly pleased to meet him. We stood there for a moment like two simpletons looking at the toes of our boots. Then with a movement of courage I said to Puvioux :—

"Shall we go in together ?"

"We entered and took our farewell of Marguerite. She

listened to us without saying anything, but there were tears at the tips of her blond eyelashes. Suddenly Pierre, who was talking, stopped and began to sob and I to do the same. Then Marguerite joined in, and there we were all three shedding tears and pressing each other's hands.

"When the diligence that took us away from Mezieres began to rattle on the pavement the next day, I felt inclined to throw myself down from the imperial and get crushed under the wheels. The more so as there was a Lorrainer at my side who was singing in a melancholy voice a song of his country, and I said to myself: 'It is all over, Jean; you will never see her again.'

"Well, you see. Time passes. The seven years are over, and who knows? Perhaps I am not only going to see her again but to marry her.

"There are indeed strange chances in life," continued Jean Chevauchaux. "Pierre and I started on the same day and at the same hour and we were placed in the same regiment. At first I was vexed. I should have liked to have known that he was far away. As you may imagine, I could not love him much. But I reflected afterwards that if Puvioux was with me I could at least talk about her. That consoled me. Well, I said to myself, I am in for seven years of it. After all, one gets over it.

"In the regiment I became a fast friend of Pierre Puvioux. He proved to be an excellent good fellow, and at night, in order to kill time, we used often to talk of Mezieres, of Father Servan, and of Marguerite. We used to write to Mezieres often, but each told the other the contents of his letters. It was a struggle, it is true, but it was loyal. When Marguerite or old Servan replied the letter was for both of us. An equal dose of hope was given to each of us, and so we went on hoping.

"One day the colonel took it into his head to appoint me corporal. I was vexed and proud at the same time. You see, I was no longer the equal of Puvioux. My stripes gave me the right to command him, and in the eyes of our Ardennais that was no small advantage. But I did not glory in my rank; on the contrary, it made me ill at ease. I did not dare to talk to Puvioux any more. Then I reflected that there were more ways than one of getting rid of my new rank; I neglected my duty and was forthwith degraded. But who should be made corporal in my stead but Puvioux! But Puvioux was not to be outdone; at the end of a week he resigned. After that there was no danger of any propositions being made to us to make any change in our uniform. We were condemned to remain common soldiers.

"So much the better," said Puvioux. "What luck!" said I.

"When we had served our seven years—for I do not mean to tell you our history day by day—I said to Puvioux:—

"Well! now is the time to start, eh?"

"Yes," he replied, "we are expected."

"You know," I said, "the game will not be finally won until both of us have arrived at Mezieres, and until the loser has declared that the combat has been loyal."

"Agreed," said Puvioux.

"And so one morning, with good shoes on our feet, and stick in hand, we set out for Mezieres from Angers, where we were in garrison. At first we walked along in company, not saying much, thinking a good deal and walking above everything. The weather was terribly hot and dusty. Half way on one of our marches I sat down on the road-side overwhelmed with fatigue.

"Are you going to stay there?" said Puvioux to me.

"Yes."

"Adieu!" he said, continuing his march.

"Au revoir!"

"I watched him as he went on with a firm step, as if he had only just started. When I saw him disappear at a bend of the road, and when I was once alone, as it were abandoned, I felt a great despair. I made an effort. I rose and began to walk again. That little halt had done me good. I walked, walked, and walked until I had caught up Puvioux and passed him.

"At night, too, I was well ahead, but I was worn out. I entered an inn to sleep a little. I slept all night. In the morning I woke up. I saw that the day was getting on; I was furious and called some one.

"You have not seen a soldier pass on foot?"

"Yes, *monsieur le militaire*, very late last night. He asked for a glass of water."

"Ah! I was outstripped in my turn! I started hurriedly. At three o'clock in the afternoon I had not caught up Puvioux, nor at six o'clock either. At night I took my rest while I ate, and started to walk again. I walked a good part of the night, but my strength had limits. Once more I stopped. I knocked at an inn. The door opened, and there, sitting in a chair, I saw Puvioux, pale as death. He made a movement of displeasure when he saw me; that was natural. We did not talk much. What could we say? We were both tired! The great thing was to know who should get up the first the next morning. It was I.

"The next morning was this morning. Since this morning

I have been walking, taking a rest now and then, but only a very short one. We are getting close. Rethel is the last stage between Angers and Mezieres. I know my map of France now! The last stage! Good heavens, if I arrived too late!"

"And Pierre Puvieux," asked my father, "has he caught you up?"

"No," replied Chevauchaux, "I am ahead! If I could start now I should be saved."

"Start? In this state! Impossible!"

"I know.....my feet are swollen and cut.....and provided that to-morrow....."

"To-morrow you will be rested. You will be able to walk!"

"Do you think so?" said the soldier, with a look ardent as lightning.

"I promise you."

My father then advised the soldier to go to bed. Chevauchaux did not refuse. The bed was ready. He shook hands with us and went up to his room. It was ten o'clock.

"I will wake you at five o'clock," said my father.

It was not yet daylight on the following morning when my father, already up, looked out of the window to see how the weather was. While he was at the window he heard some heavy footsteps on the road below, and in the obscure twilight that precedes daybreak he perceived a soldier who was walking in the direction of Mezieres.

"Up already?" said my father.

The soldier stopped.

"Well?" continued my father, "are you off?"

The soldier looked up and tried to make out who was speaking to him.

"You are Jean Chevauchaux, are you not?" asked my father.

"No," said the soldier; "I am Pierre Puvieux!"

And as if that name of Chevauchaux had been the prick of a spur he resumed his walk more rapidly and was soon lost in the obscurity. When my father could no longer see him he could hear the noise of his shoes on the road leading to Mezieres.

"Ah!" said my father to himself, "Chevauchaux must be sharp if he means to catch up that man." And he went straight to the room where Jean had slept. He was already up and looking at his feet by the light of a candle.

"Victory!" he cried, when he saw my father, "I feel fresh and strong, and I suffer no more. *En route!*"

"And quickly!" replied my father. "Puvieux has just passed through Rethel."

"Pierre Puvieux?"

"I have just spoken to him. He passed under our window, going along as if the devil were after him."

"*Ah, mon Dieu!*" exclaimed Chevauchaux, as if he had been struck down. He repeated once more: "*Ah, mon Dieu!*" Then he buckled on his knapsack and cried: "After all, what you have told me gives me courage. Let me be off!"

In the room below, my mother, already up, was filling a wallet with provisions for Chevauchaux. But he refused. He was not hungry. Nevertheless he let her fill him a flask of brandy, and putting on a pair of my father's shoes he started, blessing my mother, and leaning on my father's arm to take the first step.

For three or four years after this we had heard no news of Chevauchaux. We used often to talk of that evening when the soldier had come into our house bleeding and weary. What had become of him? What had been the end of that romance of love so strangely begun?

One day my father had to go to Mezieres on business. He took me with him. At Mezieres he wished to enter the first barber's shop that he saw to get shaved. On the doorstep a little child was sitting with its legs apart and smiling at the sun.

"Will you allow me to pass?" asked my father, laughing.

"No! I won't," replied the child, with a little lisp.

At that moment the door opened, and a man in his shirt-sleeves appeared—the father—and took the child up in his arms, saying:—

"Pierre! Pierre! do you want to drive away the customers?"

I recognised the voice and so did my father. We looked at the barber. The barber looked at us. It was Jean Chevauchaux!

He laid the child down at once and held out his hand. His face was all red and beaming with pleasure.

"What, is it you? Ah! and to think that I have never written to you!.....Ah! you don't know.....it is I who married her—I arrived first.

And rushing into the back-shop: "Marguerite! Marguerite!" he cried, "Come! Come!"

He was wild with joy. A young woman appeared, blond, pretty, blue-eyed, with a pensive and gentle air, a little sad.

"You do not know?" said Chevauchaux to her. "It was

this gentleman who took care of me so well at Rethel the night before I arrived at your father's house.....I have often and often talked to you about him.....this is the gentleman."

Marguerite fixed her large calm eyes upon us, saluted us, and thanked us softly; then as her husband continued to evoke the past, she looked at him tenderly with a look that supplicated and was not without reproach. But Jean saw nothing.

"Ah! it is to you that I owe all my happiness, monsieur!—my child, my little boy, look at him, my little Pierre! It was my wife who wished that he should have that name! Isn't he a fine boy? and strongly built! and my shop is going on first-rate. My wife! I adore her! and all this I owe to you!....."

"And the other?" asked I imprudently.

"The other?" said Chevauchoux.

He curled his lower lip, did not see that Marguerite turned her head away, and answered:—

"Pierre Puvioux? Poor fellow! He arrived second, and that very evening—it made me cry, I can tell you—that very evening—he threw himself into the river!"

Poetry.

O, grey-quilled bird that singest in the copse,
 What time sweet spring, with all her beauteous train,
 Hath strewn with bud and blossom hill and plain,
 And set rare music in the high tree-tops!
 I heard thee ere the blackthorn calix drops;
 One gush of song I heard—one long, sweet gush,
 That seemed to fill each green-veiled tree and bush
 With melody that in its very stops
 Bred greater longings,—then I needs must go:
 But ever since thy song is in mine ear,
 And will not cease; it follows me by day,
 And e'en by night into my dreams must stray,
 Warbling of rural sights and summer cheer,
 That make me yearn for them whether I will or no.

THE article on "Physiognomy" is unavoidably crowded out this month. The series, however, will be resumed next month with an article on the "Eye."

Facts and Gossip.

SUN-STROKE is induced by a hot, still, dry atmosphere. It occurs less frequently if there be moisture in the atmosphere, and very seldom indeed when there is any movement of the air. The chief predisposing cause is exhaustion from labour, especially after the free use of beer or of spirits. The premonitory symptoms are a sensation of lassitude, of sinking, especially in the back of the neck, nausea, swimming of the head, or headache. To ward off sunstroke, the main point is to avoid exposure to the sun, and this the inhabitants of most southern Continental cities do by ceasing to work at midday and by retiring from the heat. No doubt sunstroke might be in great measure avoided in England by similar precautions. Next to avoiding direct exposure to the sun, the best measures for preventing sunstroke are to have the head and back of the neck well protected by a white covering from the sun; to have the neck open, the action of the chest as free as possible; to drink no spirits: to cease working and get into the shade whenever premonitory symptoms appear; to have a plentiful supply of cold water at hand, both for drinking and for cold affusion, which is the most ready as it is the most effective of remedies.

THE surest of all natural prophylactics is active exercise in the open air. Air is a part of our daily food, and by far the most important part. A man can live on seven meals a week, and survive the warmest summer day with seven draughts of fresh water; but his supply of gaseous nourishment has to be renewed at least fourteen thousand times in the twenty-four hours. Every breath we draw is a draught of fresh oxygen, every emission of breath is an evacuation of gaseous recrements. The purity of our blood depends chiefly on the purity of the air we breathe, for in the laboratory of the lungs the atmospheric air is brought into contact at each respiration with the fluids of the venous and arterial systems, which absorb it and circulate it through the whole body; in other words, if a man breathes the vitiated atmosphere of a factory all day, and of a close bedroom all night, his life-blood is tainted fourteen thousand times in the course of the twenty-four hours with foul vapours, dust, and noxious exhalations. We need not wonder, then, that ill-ventilated dwellings aggravate the evils of so many diseases, nor that pure air should be almost a panacea.

WE regret to announce the death, at the age of 86, of Sir Josiah Mason, the philanthropist, whose portrait and phrenology appeared in our October number of last year. The deceased was a firm believer in phrenology, and had the heads of all the children of his first orphanage, fifty in number, examined by Mr. Fowler, and their characters written out, with a view to their better training and education.

THE
Phrenological Magazine.

AUGUST, 1881.

PRESIDENT GARFIELD.

SOME months ago I gave a few notes about General Garfield, when it was first known that he would in all probability become President of the United States. The recent attempt on his life having brought him more strongly into prominence, and at the same time shown the sterling qualities of the man, I deem this a fitting opportunity to accompany his portrait with a fuller description of his organisation, mental and physical.

President Garfield has a massive brain, fully developed in all its parts. All the powers of his mind have been exercised by a variedly active life. Few have been so situated as to be so early thrown upon their own resources, and few have made a better use of their opportunities.

The question may be asked, why should he have made a better use of what scanty opportunities he had than other lads similarly situated. The answer is in his organisation. He has a remarkable body and brain, and both have been healthy and in a good condition from childhood. He is much above the average in size and weight; his head measures twenty-four inches in circumference, he is over six feet in height, and weighs 224 lbs., yet he is so well proportioned and filled out as not to appear singular. His early training and labours gave him command of muscle and motion, rendering him strong and active; and his circumstances rendered industry and economy a necessity; while his large brain and very large intellectual lobe, and his particularly large perceptive faculties gave him a thirst for information that could not be easily restrained. He sought information as naturally as a duck would seek the water in a hot summer's day. Having a well-balanced temperament, his intellect is equally active in a physical or mental direction, and he takes equal delight in studying the material world and physical objects and their qualities, as well as to make himself acquainted with the entire workings of the mind.

Taking the developments of intellect as a guide, it would

be almost impossible for anyone to have a more craving desire for knowledge than he has had from his childhood; and as his circumstances have always prevented him from travelling abroad, and seeing with his eyes; he had necessarily to resort to books to gain the information he so much desired; hence he has become an habitual and inveterate reader. As the result of his reading, observation, and experience, he has



not only acquired a vast amount of general and detailed information, but he has so cultivated his intellect as to secure one of the best memories known; for he retains knowledge with wonderful accuracy. Individuality is very large, which leads to close as well as general observation; hence he is a constant student of the material as well as the immaterial world. Eventuality, Comparison, and Language being large,

give him superior ability to use knowledge thus gained to the best advantage ; for he is quick to recognise actions and their results, to compare one act, circumstance, quality, and condition with another, and see the relationship and affinity of one subject as bearing on another, and by the aid of his large Language he is enabled to express himself clearly and appropriately.

He has great powers of Intuition, as indicated by his very high forehead and fulness in the centre. This faculty gives him an insight into human nature, and helps him to understand and know how to deal with those with whom he comes in contact ; besides, it gives him forecast of mind, disposing him to act with reference to future as well as present results. Benevolence is very large, and modifies his whole character, giving almost an excess of sympathy and humaneness of feeling, making him neighbourly and kind, and willing to share with others. Veneration also is large, which in the absence of large Self-esteem would render him humble, modest, and mindful of the presence of others, and conscious of a Power superior to man. He has none of the indications in the form of his head of undue pride, arrogance, or disposition to domineer or assume authority. His social, domestic powers of mind are distinctly represented and have their modifying influence, enabling him to make friends wherever he goes.

He has a strongly-marked outlined organisation. He has distinct and manly features and expression, and his entire make-up is that of a manly man. The combined action of his native talents, together with his life and experience, furnish him with two superior qualities of mind : common sense and goodwill towards mankind. L. N. F.

THE likeness of Lefroy as published in the *Daily Telegraph* of July 1st, and acknowledged by those who are intimate with him to be correct, represents an object of pity. His round shoulders, small chest, small neck, small retreating chin, projecting face, and retreating forehead, all go to show that he is a scanty pattern of a man, very badly finished, and made-up of poor material. He has about half of the qualities and powers of body and mind necessary to make one complete man. Should he be found guilty of murder and be punished, his ancestry will be as much to blame as he, for he did not give himself that half made-up organization, with but little balancing power. His greatest redeeming quality is his love of children, pets, and animals. He has great powers of observation, memory, and conversational talent, with a very active mind.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

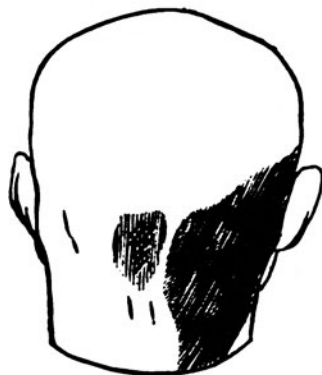
LECTURE IV.

We come now to the consideration of the particular functions, and for this purpose we divide the brain into several parts. One part of the cerebral mass has received the name of Cerebellum, or little brain. Every anatomist knows that there is a part of the brain separated in a great measure from the rest; in some men it is much smaller than in others, and it is called Cerebellum, and the other part of the brain is called Cerebrum, or large brain. In comparative anatomy, whenever we speak of the brain in the lower animals, we speak also of the little brain. It exists in the four classes of the vertebrated animals.

THE ORGAN OF AMATIVENESS.

If we examine the cerebellum of man at different periods of his life, we shall find that it does not bear the same proportions to the other parts of the brain. Children have the little brain exceedingly small in proportion to the other part of the brain. If you wish to ascertain this, examine the neck of the child between the two ears, and you will be sure that it is so, without being anatomists. If you examine that part of the head behind the ear, you will find a bony projection (the mastoid process of the temporal bone), and if you examine a little further up towards the middle of the back part of the head, you will discover other projections, the cervical spine and tuberosity of the occipital bone, well known to anatomists. We are often asked, what organs are these? They have nothing at all to do with the figure of the brain; they are merely bony prominences for the attachment of muscles. There is a space, however, between the ears occupied by the little brain, hence the larger the development of the skull in this region, leaving the parts I have just mentioned entirely out of the question, the greater will be the mass of cerebellum internally. Examine the heads of children, and you will find this part of the head very flat, very little developed, and that indicates that the cerebellum is very small; indeed the cerebellum is much smaller in children than in adults, in proportion to the other parts of the brain. If you examine adults, you will find a very great difference in the projection hereabouts; you will see very few people with such a neck as this man (showing a specimen in which the occiput was little developed). When

I show you this (showing a cast in which the occiput was largely developed), will you not admit that the cerebellum is



Showing Amativeness large.



Showing Amativeness small.

infinitely larger than in the other person? You see that in the one the cerebellum is very little developed, consequently the space between the ears posteriorly is narrow, whilst in the other the cerebellum is very large and the ears are widely separated. Hence it is a fact, and we must always begin with facts, that the cerebellum is not proportionate to the rest of the brain in different periods of life and in different individuals, adults of the same age. You will find, in infancy, this part of the brain small; it increases in size as the age increases; and even in adults, when it is supposed to have reached its full development, you will find it in some very prominent, and in others very defective. Carry your examinations further into nature, and you will find that the heads of males are generally larger than the heads of females. It is said, the cerebrum of males is also larger, hence it must be the case with their cerebellum, but it is no such thing. The size of the cerebellum bears no determined proportion to the size of the head; you may see a man with a very large head and but a small cerebellum; whilst a woman, with a small brain, will have a larger cerebellum in proportion than the former. If you have opportunities of seeing different nations, you will find great varieties in the shape of the head, as regards this particular part; and I hope that travellers who go into remote nations will not be content only to collect pebbles, and shells, and animals, but that they will attend to the mental development of the inhabitants, and observe the configurations of their heads, by which

they would do a great benefit to phrenology. Many pathological facts have been noticed which concur to point out the function of this part, and if any one will take the trouble to observe and reflect on it for himself, he will soon be convinced that the feelings to which this cerebral part gives rise, are such as are usually ascribed to the influence of cupid.*

I shall now speak of the function of the posterior part of the brain, of the posterior lobe, as it is termed by anatomists.

PHILOPROGENITIVENESS.

We shall find that nature has given a peculiar feeling to take care of offspring. Such a power has never hitherto, in philosophy, been considered as a primitive or fundamental power, but it is acknowledged to be so by phrenologists, although by other persons it has been ascribed to various causes. Some say that parents take care of their offspring from a sense of duty; but can you admit that cause to exist in animals? The degree of feeling shown by the mammiferous animals in taking care of their young ones is very great. Will you admit the operation of a moral cause in them? Certainly not. I would ask any mother, who is extremely attached to her children, whether she is so from reasoning or reflection, or whether she feels this by a strong impulse? whether she does so naturally? This degree of feeling I know is not always alike, it varies in individuals: some spoil their children by excessive fondness, whilst others just take so much care of them as is necessary, and no more. Some animals take little care of their young, others a great deal of care; with some animals the female takes the greatest care and the male does not take any; whilst among others the attention paid to the offspring is alike by the male and female. Do such differences occur without a cause?—can phrenology explain these causes? In the last lecture I called your attention to various reasons which must lead us to consider some of the manifestations as primitive or fundamental. Now if you find a particular manifestation in one species and not in another—if, for example, you see some animals who take little or no care of their offspring, whilst others will die to protect them—will you not admit that great differences exist? Look at the domestic female birds; try to take away any of their young ones, and see what they will do, whilst the male birds care nothing about them. Foxes of both sexes take care of their young, and will carry them in their mouths to a place of safety, whilst

* It will be observed that the very modest manner in which this organ was spoken of, was occasioned by the presence of ladies.

in dogs the male pays no attention whatever to them. However, it may be laid down as a rule, that the females are much more attached to the offspring than males; in circumstances of danger, the male will run away much sooner than the female. If we consider our own species, which parent takes most care of the offspring, the father or the mother? I believe that if mothers did not pay more attention than fathers, many children would die. Some women find the greatest delight in nursing their offspring. I asked a poor woman once, whether she took any pleasure in her children, and she said, "Sir, it is my only pleasure." We may observe how careful nature is in thus giving such feelings, and connecting pleasure with the execution of labour.

Now if you will examine the organization in animals, in women and in men, you will find a positive proportion between the cerebral part I speak of and these peculiar feelings. This is certain, and I can say with confidence, that if you see an individual who has the cerebral part here extremely large, you may depend upon it that such a person is fond of his offspring. (Casts were shown in which this organ was very large, and contrasted with others in which it was very small.) Now if you see an individual with the part contracted and flat, as it is here (showing a cast), such a person may take care of



Skull, showing Philoprogenitiveness large.



Skull, showing Philoprogenitiveness small.

children from duty, from the operation of a moral cause, I grant that, but it will be troublesome to him. There is a great difference between doing any thing from a mere sense of duty, and doing it from a natural inclination; the one is not so agreeable to the individual as the other. If you examine comparatively both sexes of our species, you may depend upon it then, this cerebral part is much more developed in women than in men. I stated from the beginning, that the heads of females are more elongated than those of men; if we come to particulars, we shall find that the anterior and middle lobes are more contracted, whilst the posterior are elongated. If you observe an individual who is fond of being with children, and that children like to come around him,—for they soon

learn to distinguish those who love them, or who take a pleasure in raising young animals,—you will be sure to find this part well developed, viz. the posterior lobe of the brain. If you know any person who has felt great grief at the loss of children, you may be sure that in such this part is large. I have never met with an exception. Multiply your observations, and you will find in different nations, that some nations are, in a general way, fonder of their offspring than others; the males of some nations are more fond of offspring than the males of other nations, and if you look to the heads of both sexes in such nations, you will find little difference between the development of this part in the female and male.

It is certain that some angry and cruel tribes are very fond of their children, and even among savage and fierce people, as the Caribs, who even devour their prisoners, yet the love of offspring is strong in them, and you will find this part of the head, the organ of this feeling, largely developed. (Some Carib skulls were then shown). We have also pathological facts in confirmation of our assertions. It has been observed, that persons who have had great development of this part have become deranged, and during their insanity the feeling of attachment to children has been remarkably prominent. Here is a cast of a poor woman who was separated from her children; she was insane, and was lodged in a poor-house; Mr. Deville saw her, and observed that this part of the head was very large, and also that the external surface of the head over this part felt very warm; and that is a thing which may frequently be observed, and this poor woman was continually talking of her children. I have said before that we prefer breadth to mere elongation, for when there is surrounding development, you find more activity, more intensity of any power, than when an organ is merely elongated.

We know there is great difference between activity and intensity of any power. You may observe persons very fond of music; they like continually to hear music, but they have not sufficient intensity of any power to become deep musicians; they remain shallow in their knowledge of music. Children have great activity of the muscles, but have they the power to lift great weights? Other persons are fond of reasoning on a subject; they reason and reason, and never arrive at a conclusion; they have not activity of mind enough to follow up the reasoning, and the larger in general you find this organ the better qualified is the person to concentrate the other powers on a given subject; when such people work, they work with great intensity, and with a comprehensive view of the subject.

INHABITIVENESS.

We come now to another power, and there have been many discussions about this favourite power. There are some young animals who look as soon as born for certain habitations; a young duck, hatched under a hen, that has never seen the water, runs to the water. People say that animals go to certain places to feed by instinct, and that a young duck runs into the water by instinct, which acts as a propelling influence; but must they not have a peculiar instinct to run into water? The hen which has hatched the young ducks, calls to them by peculiar expressions, and runs after them to keep them from the water, yet the young ducks go on. If you go further into nature, you find that animals have a constant tendency to go into certain places, whatever you may do to prevent them; they like to feed and to remain in certain regions. Some persons say, how is it possible to form this feeling into a fundamental or primitive feeling? Let us make a few general observations on this subject. Circumstances are, in some systems of philosophy, considered the basis of a power; it is said, look at a man of talent who is lazy, he finds himself in misery, and then he begins to work. In short, it has been said, that external circumstances are the causes of the individual powers, but in phrenology, we contend that circumstances never produce the powers; they may excite, but they can never produce them. In nature, circumstances may favour the action of a power, but the power itself exists independently of the circumstances. I should like to know whether I am hungry because food is put on the table before me, or whether I am hungry from an internal cause. I am sure that if misery would produce talents, they would not be so scarce. If one man has a talent for music, and another for mathematics, and a third for mechanical arts, give them equal opportunities, and you will find that each will excel according to the talent which he possesses; now, how can you explain this by a reference to circumstances? In phrenology, we admit the influence of circumstances; it is a fundamental consideration in education, that they very much improve the powers, and excite the powers, and therefore education is most useful; we know that opposition does a great deal of good, but the power must be there to improve by it.

With regard to the choice of situations, we see that some animals choose very high mountains, others choose the plains; some birds choose the trees, some the rocks or the ground. The chamois and the wild goat love the mountains, and it is

said they do so because they find their food there, but they come lower down to feed. The ptarmigan, a bird found on the hills of Scotland, inhabits the highest and most barren parts of the mountain, but comes lower down to feed. There are other animals which live on the land, yet like to take their food in the water to eat it, and then come to the land again. The young of those birds which build their nests in the upper parts of trees, will, when let loose from a cage in which they may have been hatched, fly to the tops of the trees. We see the most determinate action here; it is the feeling which dictates the choice of habitation, and therefore I have spoken of the internal power or propensity of inhabitiveness, or the disposition which induces individuals to live in certain situations. Some birds prefer always the lower part, or trunks of trees, as the nightingale, and the blackbird; others prefer living in the tops of trees. The hen likes to live on dry land, and the duck on the water, and we find a great difference in the organisation of ducks and hens. In the chamois, which lives always on the most elevated ground he can reach, except when feeding, we find the upper part of the brain higher and much more developed than in the roe which lives in the valleys, and in all animals fond of physical elevations, we find this development. Even among rats, some are better pleased with the higher parts of the house; this is the case with the old English or blue rat, whilst the Norwegian rat, or brown rat, is most fond of the lower part of the house; however, since the Norwegian rats have been imported, they have nearly destroyed the ancient inhabitants; and we find a considerable difference in the organisation of their heads. In man, the question is whether there is any such feeling which influences him as can be regarded as fundamental. Phrenologists do not quite agree on this point, and I shall take the opportunity of mentioning such differences as occur among phrenologists; because, although they may differ in opinion, they can never differ long on the essential points; they have only to refer to nature, we must hear what she says: Suppose now that some phrenologists should ascribe the love of offspring to the tender feelings in general, or say that persons who are fond of their children are kind to others, and feel a general sympathy for others; and that other phrenologists should ascribe the feeling to a particular organ, how are we to decide? You must go to nature. I would say, how comes it, if the love of offspring produces a general sympathy, that the Caribs, a very fine nation, who kill and eat each other, have not the finer feelings, because such people are passionately fond of their offspring? How is it that people of very rough manners to others yet love

their offspring? We must go to nature, I repeat, and we shall have our differences removed, and the same with respect to this, No. 3, the part placed above the love of offspring.

Some phrenologists have ascribed to this part concentration of the mind, and they wished to call it Concentrativeness, or the power which maintains two or more powers in activity, when directed to a certain object.* This is the proposition, can it be supported? This is the question, is it true? We must go to nature. I would first ask any one who would be inclined to speak of concentrativeness as a power, is it a fundamental power? I am of opinion, that in order to be able to consider any power as fundamental, that it be such as can act of itself; but concentrativeness cannot act of itself. All the powers which I shall mention as fundamental powers, are such as can act singly. As regards concentration, you cannot conceive that a power can be operative without being able to act except in combination with other powers, such is the case with concentration. Besides, if you examine the heads of men who are capable of great concentration of mind, you will find this part large in some and small in others. Concentration of the mind, then, may take place without this development.

To return to the power I was speaking of: we find that some individuals are much attached to their home, their native place,

* Since Spurzheim's time, it has been fully established that the upper part of the space formerly allotted to Inhabitiveness or Love of Home, is occupied by the organ of Continuity or Concentrativeness. Its function is to give continuosness and protractedness to mental action. "Some persons," says Combe, "can detain their feelings and ideas in their minds, giving them the quality of continuity, while others cannot do this. The mind of the latter may be compared to the surface of a mirror, on which each feeling and thought appears like the shadow of a moving object, making a momentary impression, and passing away. They experience great difficulty in detaining their emotions and ideas, so as to examine and compare them, and, in consequence, are little capable of taking systematic views of any subject, and of concentrating their powers to bear on one point. I have observed this organ to be large in the former, and small in the latter." "It is difficult to get the real essence of this power of mind, (*Manual of Phrenology*) partly because we have not yet observed it sufficiently to thoroughly analyze it, and partly, for the same reason, because thought has not dwelt upon it with sufficient definiteness to give it a name. But so far as we at present know, the function of the organ in question is to give sufficient protractedness to mental action to make it effective. We know that persons with this faculty small are liable to be flighty and superficial, to lack connectedness of thought and permanency of feeling, and to pass lightly from one idea or emotion to another, while those with it large exhibit great application and consecutiveness of mind. They dwell on a thing for a long time, complete one mental process before they begin another, and show patience in carrying out a chain of thought or reasoning. When very large it gives prolixity and tediousness, a disposition to pore too long over losses or bereavements, and an inability to change from one thing to another with sufficient rapidity. Its deficiency causes a person to begin many tasks and finish few, to pass from one thing to another too quickly, to know a little about many things, but few well. The mind is restless, for ever desirous of change, either in regard to occupation, study, or amusement."

and such people have this portion of the brain more developed than others. Some are miserable if they cannot return home; they may like to go abroad to see things, but they are sure to return again; and others cannot conceive how any person can like to go from home; such are sure to have the development here. There are some wandering tribes of mankind who are never still, continually shifting from one place to another, attached to none; travellers are invited to observe whether in these there is a manifest defect in the development of this part. Some animals migrate, others never leave the neighbourhood in which they are brought up, and it is important to see whether such beings have this particular part much developed.

I will give you an idea to reflect on respecting this power, which is, whether it is a modified action of this power which leads some men to pursue agriculture? I put it rather as a question than an opinion; seeing that in nature certain beings are disposed to certain actions, whether, as she has given a disposition to hunt, as among savages, and among others to lay up provisions for the winter, to others a disposition to the arts and sciences, and others an attachment to places, perhaps to pursuits connected with these places. Is not agriculture essential to mankind, and is there anything which will point out a power which induces men to cultivate the country? We see that some children have great pleasure in sowing seeds, and they appear to take much pleasure in cultivating them. I hope that those who have studied phrenology will pay some attention to this point, to see whether there is not a disposition to live in certain places, as well as to show a love of offspring. With respect to the feeling of inhabitation being fundamental, I think I am almost sure of it. We may observe among animals peculiar attachment to certain places, and we see it in man. Men who have lived in cities and enjoyed every luxury which opulence could afford, have left them, and gone back to end their days among their native mountains.

ANTHROPOLOGY AND THE NATIONALITY QUESTION IN AUSTRIA.

Politics is chiefly a handicraft, which, under ordinary circumstances, keep the political machine in regular work. It is also an art, which brings forth the machine in working order when it has suddenly stood still or got into confusion, and which then speaks the saving word or does the saving deed. Political art often goes further: with a true

knowledge of the laws of a country it often points out the path on which the machine must go. Politics is also a science, which chiefly decides on the laws to be made for the intellectual, moral, æsthetic, and physical productions of a people, and also for the further development of the same. The anthropology and psychology of a people, therefore, form the most important basis of political science, to which the knowledge of material and physical wants is closely allied. The momentary fulfilment of wants does not entirely depend on the zeal or working capacity of a people, but also on the means to which they have access; which consist on the one side of those which nature gives, and, on the other, of the works of former generations, which may rightly be called the working capital. To this capital belong the cultivation of the land, the mineral treasures of all kinds which have been discovered, the improved methods of communication, and, lastly, those institutions which have made intellectual work so much easier, and which now protect it. Therefore, the statistics of property are such an important assistant for a proper scientific-political calculation. The knowledge of the tendencies and forces of growth in a people proceeds from an understanding of their needs and of their psychology, and to this end the methods of overcoming obstacles and external difficulties must be studied.

Fitted out with the necessary knowledge, political science could foretell all the laws to be made, and all the events which will happen, with the same accuracy as astronomers have foretold for hundreds of years the constellations in the sky. The present political science is, however, no organised system, but a number of branches of one system, which have got separated. Political science, for instance, forms part of history, because it tries to trace the political occurrences of the past back to their origin. After these few observations, a scientific man will perhaps have justice done to him, if he raises his voice in order to try and solve a question in which all the able politicians of various parties have failed. Let us try the method of anthropology. Although the principle of freedom of teaching is now adopted in all countries, yet anthropology is at the present day one of the most restricted of sciences, and the teachers of it have often to struggle against the tide, while obstacles are put in their way on every side by the prejudices and opposition of political leaders. The Government representative, however, at the Berlin Congress of Anthropologists, exhorted them to keep up their spirits, but not to interfere with the course of Government. And even amongst the professors of the science themselves,

there are many who try to aid the views of parties and nations by a great distortion of facts and by various misleading hypotheses.

If I now proceed to give the plain truth, I do it out of respect for Germany, because I know that it prizes plain scientific truth above everything. How little confidence the anthropologists in Austria place in anthropological inquiries, is shown by the fact that the Anthropological Society in Vienna has never yet tried to bring about a general investigation into the present population of the earth, for fear that national or political prepossessions might make the inquiry untrustworthy. I will, first of all, call attention to a few fundamental ideas of Craniology. The most astonishing results in this direction were accomplished by the measurement of the greatest lengths of skulls (from front to back), and farther by the greatest breadths and the greatest heights. It is well known that the relative proportions of length and breadth to each other have contributed in a great degree to the division of people into dolicho, brachy, and mesocephalic. To the first division belong those whose breadth is 72—75 per cent. of their length. If the percentage of breadth is greater—for instance, 83 per cent.,—then they belong to the third class. Between the two stands the mesocephalic form. The old German skull, for instance, was generally between 72—75 per cent., while the modern German one is generally between 79—81 per cent. In the old form of the Sarmatic and Tartar skulls the percentage of the first is 85 per cent. and more, while that of the latter is 90 per cent. and more. The relation of breadth to height is quite as important. I shall demonstrate that the old German type shows a very great height in comparison to the width, and altogether the skull is absolutely higher than it is wide. In other skulls, particularly in brachycephalic, the height may be greater than in the German; the relation between breadth and height is, however, then reversed, because breadth is either relatively, or else absolutely, greater than in the German. This proportion, for instance, occurs in the old Sarmatic and Tartar skulls. In many skulls the back part of the head protrudes like a cone, while with others it shows a more gently sloping arch. The old German skulls possess the cone, while the Sarmatic and Tartar have the arch. If you look at an old German skull from the top, it looks like a globular hexagon; while the Sarmatic looks like an egg with the greatest breadth at the back; and the Tartar looks almost like a circle. If you look at the old German skull from behind, you notice most of all its great height in comparison to its width; and, further,

that the width at the base of the head is not much less than in the widest part; and one also further notices the roof-like appearance of the skull-arch. In the Sarmatic and Tartar skulls the breadth increases in proportion to the height; the base of the head becomes narrower, particularly in the Tartar, and the arch shows a circle of much larger radius. Seen from the front, the German and Sarmatic skulls show a long facial form, and the Tartar show a short one. The forehead of the two first is high; in the Sarmatic it is broader than in the Germanic. The Tartar forehead is low and very broad.

It is important to notice the position of the oblique ear-surface in reference to the front and back head-summits. While in the German, Tartar, and Czechian types it often lies in the middle, it moves to the back in South-Slavonic types. The volume of the skull is important as deciding to which class it belongs. There is no very great difference in this respect between the skulls of the different races in Europe. The Czechian stands high in regard to it.

I will now show the importance of Craniology for scientific-political knowledge by the description of three types. The first skull is that of the Würtemberg race, which most people believe to be a true German race, and which will therefore represent the whole German people. This instance is particularly suitable for a representative of the German type, as Hölder made a great study of living and dead skulls of this race. The first fact which we notice is that no Würtemberg skull exists as a type. That is, that if one took a middle part of all the measurements and made a skull by it, no type of this would be found in the Würtemberg race.

Hölder also discovered that there were forty-nine different types of skull in Würtemberg, three of which were old types, and the other forty-six would fall into two divisions, the primary one being a mixture of two old types, and the secondary consisting of three types of the mixed types.

Representative skulls of all kinds were found in the Schelz Churchyard, which was opened in 1614 and closed in 1846. Hölder examined 207 skulls from that place.

Only five skulls were found of true German type, that is, hardly $2\frac{1}{2}$ per cent. of the whole; while six true Tartar and eight true Sarmatic ones were found—namely, about 3 and 4 per cent. Twenty of the skulls showed no trace of German mixture; but the number of those that had a German mixture in them was ninety, or not quite 45 per cent. Therefore, more than half were not of German character at all, and 98 per cent. were not true German. Through this it may be seen that the greatest number of skulls belonged to the mixed class.

In comparing these types of skull with the present living race, it was found that the mostly German type showed itself much oftener in the Franconian part of the country than in the Swabian; and also that the brachycephalic is found more frequently amongst the lower classes than in the nobility, who have descended almost entirely from the old German nobles or Allemanni. In the graves which contained the old Allemanni 78 per cent. of true German skulls were found. Hölder made a chart of the different species of skulls. Hardly any pure classes are found—the divisions most frequently found being brachycephalic or dolichocephalic. The peasantry of a district generally are either brachycephalic or dolichocephalic; while the inhabitants of a town, and those living in the neighbourhood of old monasteries, are generally a mixture of the two.

How striking the fact is that the true German type of skull is seldom found in the present race, may be seen by the circumstance that the dolichocephalic skulls which have been dug up were at first considered to have belonged to a race which inhabited that part of the country before the Germans, and were, in fact, thought to have belonged to the Celts. It has now been decided that the old Celts and Gauls could only have been regarded as true German by some ethnographical mistake, which the ancient authors must have made, and that they are really a brachycephalic race, although most of them had very likely intermarried with true Germans. The brachycephalic races—not only the Celts, but also other nations of Slavonic origin, to which last the Veneti belong—inhabited the country before the Germans, particularly the Allemanni, came into the land; and the Roman provincials were for the most part of brachycephalic type. Numbers of Slavs came into the country as slaves at the time of the Franconian wars: Most of the Slavonic races had become intermixed for ages before, as the Russians are now, with the Tartars, particularly the Finno-Tartars; and so a great Tartar element got mixed with the Würtemberg blood and in the Würtemberg form of skull. Besides this, there were the prisoners from the wars with the Avari, Huns, and Hungarians; and so the Würtemberg skull became more complicated than ever.

The Allemanni alone did not intermarry with any of these races up to the year 1200, and till then the skulls found in graves of the Allemanni are pure German. After this the race became intermixed, more particularly through the spread of Christianity, as all the clergy became free men, even if they had been slaves or bondmen before; and many of the monasteries made those slaves and bondmen, who had fled there for

safety, into free men ; also those slaves and bondmen who fled to towns became—first, suburbans, and afterwards full citizens. The feudal system contributed, in a great degree, to make the slaves quite free, or only liable to paying a tribute ; while the Crusades made free men of many who before had been bondmen. In this way a nation arose out of three races ; and the same process applies to all Germany and for all of the existing races. Not a single people in Europe come from one race only ; they are all more or less intermixed. It is characteristic of the Russian nation—which of all Slavonic races is most probably the least pure, being intermixed with Tartar and German blood, and latterly also with Armenian—that it takes the lead among the Slavonic races.

It has not as yet been shown that the German skull has altered at all for several generations, although the modes of education and training have decidedly changed. The standards of education still remain compulsory, and this has made the old types disappear almost entirely. French investigators have allowed the influence of culture to appear more prominently. Hatred amongst the different races means nothing in Europe, because the races are more or less related to each other. The European nationalities only differ in respect that the same fundamental elements have got mixed in varying degrees amongst them ; and the influence of leading minds has brought the European races to have all a unity of thoughts and ideas ; so that a language which has remained peculiar to a district has only made the feeling of kinship more prominent. The nationality idea has above all things brought about the unity of large masses of people ; and wars are now no longer between small tribes, but between large bodies of people, or one nation against another. Therefore the need of peace has become greater, and the struggles of nations are now generally carried on by speeches on the political affairs of the day. This need of peace has above all things become one of the characteristic features of European nations.

In all large European nations, as well as in Germany, a middle-European race has been developed, which is, however, not quite complete, and does not yet, therefore, possess a typical skull. The psychological delineations of this race are : The striving for freedom of conscience and knowledge ; and further, for the destruction of all remains of class privileges ; and to maintain the greatest possible individual freedom within communities enlarged by treaties and otherwise. Nationality is a great intellectual, æsthetic, and ethical heritage, which the work of our ancestors has bequeathed to us. This indicates an individuality in the international European work.

This individuality must be further developed, but must not be withdrawn from the circle of middle-European culture which we call, with reluctance, "Arian."

A new point of interest for the history of culture is afforded by the Jewish skull, or rather by the Jewish head. Spiritually and ethically this Semitic race influenced in the most wonderful manner all the movers of all culture-epochs, namely, first the African, then the Roman-Greek, then the Arabian; and particularly in modern times all the different European culture-races. It is characteristic of this, that Bacon, the true creator of natural philosophy, was soon succeeded by Spinoza; that Lessing and Moses Mendelssohn followed our great poet Heine; and that our great musicians were succeeded by Mendelssohn-Bartholdy and Meyerbeer; and that, particularly in our day, Jews have made their names known in natural science, of whom I only need to name Stilling, Remak, Traube, Henle, Valentin, and Schiff. It would be very remarkable, and an unheard of thing, if such a spiritual and ethical association had not been accompanied by an anthropological one. If such a thing has occurred it has not been brought about by forced marriages, for the Jewish race remained unmixed until quite lately. It can be stated as a fact, from my own measurement of heads, that the Jewish skull occupies a central position in the middle-European race, and so high a one that the middle type and not the excessive one comes first. One can also be convinced of this,—particularly by observing the physiognomical features of several generations of the same family,—that a foreign type of skull soon changes into a European one, and that a certain approximation of form is found in the nearest national divisions. The true old type is generally found in old independent Jewish places of culture, for instance, those on the Rhine. The question now is whether this type was found at the beginning of the historical epoch, or whether it has been gradually formed by some process or other. On old monuments of the craniologically sensitive Egyptians, the old Semite is seen portrayed with a particularly African type of skull; and, according to my observations, the skull of the oriental Jew is at present very different to that of the middle-European. The shape of the head of the Jew from Salonica or Smyrna is as different from that of a Jew from middle-Europe, as the head of a Frenchman or German is from that of a gipsy.

The European Jew has therefore become Arian; and not through intermarrying, but through the imbibition of the ideas and feelings of the European world of culture, and specially those of the nations amongst whom they have lived. The

Jewish skull therefore shows that culture and habits may make a foreigner into a member of a nation ; and the Anti-Jewish movement shows nothing more than that in the nation where it occurs there still exist some erratic elements, which are certainly felt in a much smaller degree than the Jews feel the sentiments of the nation they live amongst. The advice of Mommsen, that Jews should allow themselves to be baptized, and to conform to a strange doctrine in which they do not believe, to save themselves, and to please a few powerful individuals, is as foolish as it can well be. Despotism, priestcraft, and class-influence, have produced too many mental cripples in the heart of Europe for it to be advisable for another million or two to be added. The fruits of the circumcised Talmud are unripe, but they will soon ripen ; but those of the baptized Talmud are corrupt. The increase in mixed marriages and the revision which in the present state of knowledge the metaphysical portion of all the shades of European religion must undergo, make the mixture of Jews with Middle-European races a thing to be calculated upon with certainty.

I will now speak of the Czech and South-Slavonic skulls, because these possess the common quality of having characteristics which make their type of skull peculiar. Therefore, although there is no separate German, French, Italian, English, Polish, Magyar, or Russian skull, because all these are mixtures of many races, there is a distinct Czech and a distinct South-Slavonic one ; and this fact alone shows that these nations have not spread so far among the Middle-European countries as the future of European culture requires. This does not by any means mean that each individual Czech and South-Slav possesses a characteristic skull. As far as my own limited experience in Croatia goes, the heads of the educated portions of Slavs show already a mixture of European characteristics. Both these skulls are therefore highly cultivated ; and the Czech more particularly, according to anthropological standards of size, contents, and apportionments, is to be regarded as a cultivated skull of the first rank. The Bohemian skull is characterized particularly by the weight and thickness of the bones ; the South-Slavonic by the shortness of the part behind the ears. I shall come presently to the bearing of this important fact.

We have seen in the case of the Jews, that intellect and feeling have much to do in shaping the head. We have also seen that the spiritual and ethical vein which has come to us through a Galilean Rabbi, has certainly, in an indirect way, had great influence in the shaping of the German and European head ; because, through the spread of the teaching of

human love, the conquered and conquering races were inter-mixed. The spirit of the Hamitic race has now much to do with European sentiment and feeling; namely, through the institution of a priestcraft which pretends to have the power of God. It is a wrong idea of historians and ethnographers that the institution of priestcraft is a creation of the Semitic race. It is an importation from the Hamitic to the Semitic race; for although Moses created a priestly caste, which has not yet died out, yet a particular order of priests, surrounded by mystery and invested with peculiar power, has never been formed among the Jews; and the founder of Christianity, namely Christ himself, always fought against this priestcraft, which formed cliques, but which did not fit them for the priestly office. No doubt a clique of ancient Roman families was formed in obstinate opposition to the ideas of the founder of their religion, and this clique transmitted their love of power and faculty of administration to their descendants amongst the Romans, and possessed themselves of the Hamitic idea of priestcraft. This damaged the blessed work of the European Religion; and the independent spirit of the European races, which desired to obtain freedom of thought and conscience, and the equal privilege of all healthy individual power, was now restricted. The European intellect knows no greater enemy than the Hamitic priest-idea. With clever calculation, the priest-spirit has influenced the thoughts and feelings of nations through education, and brought them into hostility to European development.

A large number of European races are, as far as descent is concerned, quite free from Hamitic blood; but this is not the case with all. It has long been known that the inhabitants of the Iberian peninsula, and of her former South American colonies, part of South France, of Sicily, and many parts of the coast of Italy, and even some districts in Switzerland, have a very strong mixture of Saracen blood amongst them. This Saracen blood, however, is not, as was formerly believed, Semitic, but Berber blood, that is, of the inhabitants of Barbary; and the Berbers are nearly related to the old Egyptians. It is remarkable that the inquisition and Jesuitism first arose in Spain. The idea of this priest-community, which is the enemy alike of church and culture, the consummation of which in the rule of the priests would falsify all the products of European science, and ruin all morals, could only have been formed in a Hamitic head. The influence of Hamitism on the middle-European skull seems on the one hand to be the maintenance of an earlier "Atavist" grade, and on the other, degeneration. The latter is shown by the decline of

the "volume" of the present legitimist nobility of France in comparison with the French nobility of the last century. Hamitism in Europe is often identified with religion; but it is only so identified in order to restrain the working of the Arian genius. Whatever is and remains Hamitic will have to succumb to the powerful process of nature which is now occupied with the formation of a Middle-European race.

I have regarded differently the anthropological qualities which influence public life in Europe from those in Austria. Austria is distinguished from the other nations by the fact that besides Germans, Magyars, and Poles, who have already proceeded far in the solution of a middle-European mass, two other elements fight for equal position that certainly have not arrived at the same standard. These two elements are the Czechs and South Slavs.

I will here interpose a few special observations. If one nation has not reached so high a standard as another, with regard to literature, art, &c., it does not follow that that nation has not equal power of production. Every great production is the end of a long development; and a young nation may be cleverer than an old one, but still be behind the old one in productions. A complaint against such a nation would have to be looked at in the same way as if some one said to a boy at school that he was not as far advanced as a young man who had finished college. So far as the Czechish nation is concerned, her power of production has been already shown by the two men who belong to the greatest scientific heroes which she has produced—namely, Rokitsansky and Skoda. Superficial thinkers will very likely say that these are exceptions which do not by any means prove the rule. Anyone who has worked his way into the knowledge of the structure of celebrated individuals, knows that uncommon scientific power could only have its root in a happy-cultivated nation. In a nation that does not stand high, anthropologically, there may be some individual who gets much in advance of his own people; but there will be none who will play any important part amongst cultivated nations. The prominent spirits of a badly anthropologically-developed people are only able to take in foreign ideas and feelings up to a certain degree, and are never able to carry them forward themselves. Great power of production has, however, been proved to be possessed by the Czech race, as the proud scientific nation of Germany gladly counts those two men amongst her stars. They both owe their development to Germany; their talent belongs to the Czechs.

That there are no Caryatid people in Austria has long since

been proved by the classification of the skulls of all the Austrian races by Dr. Weissbach. All the Austrian races are very much alike with regard to the volume and principal measurements of their skulls. The dolichocephalic elements and the brachycephalic have come together and mixed themselves into mesocephalic. While, for instance, the per centage of breadth to length in the old German skulls is 9.6 per cent. different from the German-Austrian, the greatest difference between the German-Austrian and the brachycephalic is scarcely more than 2 per cent, and occasionally as great as between the middle of many North-German races and the Bajuvarish race, to which the German Inner-Austrians belong. If there were any Caryatid in Austria, the German race would have been degenerating since the year 1200; and, above all, the citizens would represent the mass of the nation. For the same elements, which a rough observation would count as Caryatid, have got very much mixed with the German nation, and particularly with the lower classes.

From these premises the boundary line which Austrian politicians must follow can easily be found. The Czechs and Slavs must try their utmost, in order to get more and more into the circle of European culture; and the leaders of this nation cannot do worse for it than unite themselves with the arch-enemy of European development—namely, the Hamitic race and the believers in the spirit of priestcraft. Above all things, the Czechs and the South Slavs must not try to act against the rights of the German-Austrians. They would call up a storm which would, even in the most fortunate case, menace their individual freedom and prove their destruction. For the German Austrians it is very important that the Czechs and South Slavs should become cultured individuals, who are gradually working their way into the European circle of culture. Nature has prepared everything well, and the present politicians can hardly regard their elementary power as a serious obstacle.

We can now state with truth that it would have been a misfortune if all the German races, all the Anglo-Saxons, on this and on the other side of the ocean—namely, Germans, Dutch and Scandinavians—had remained one great nation. The whole Slavic race will not remain one nation, as is expected by the leading Slavonic nation, namely, Russia. Gifted with peculiar power of endurance and great talent, the Russian workers are amongst the best in Europe. In following the aims of their imagination, they have shown such individual self-sacrifice and such power of endurance that no one can doubt that they will perform a great deal when they once have

an object of culture in view. No natural-historian will doubt their scientific ability who has observed their work during the last quarter of a century. Once free from the chains of antiquated conservatism, the Russian nation will not creep into the European circle of culture, but will spring into it with a fearless step, and will bring with it a vigorous and stimulating individuality.

The Russians have this advantage, that their Czars have appropriated the spiritual primacy; they have a great deal of religion, but no priestcraft, which lays dangerous traps for development. Their academical pedantry is still very small, and therefore there are a great many more clever people in Russia, although it is a comparatively new nation, than there are in many older ones. With all the advantages of Russia, however, it is desirable that the Czech and South-Slavonic nations should be independent. An independent development is possible for them if it be not hindered by their false friends, and by shortsighted enemies acting to their own hurt.

The Czechs and South-Slavs can only form a separate, cultured individuality for themselves if the means of an independent, intellectual life are allowed them. There certainly are some politicians who think that it would ward off the danger of Panslavism from culture and from Austria if the Austrian-Slavs were Germanized. Political possibility must be ascertained by obstacles which have been overcome, and not by the applause of persons who have the same ideas.

A nation which has arrived at a national consciousness can only be denationalized through physical destruction or through complete expropriation. The destruction of one nation by another always injures the freedom of that other, and where denationalization makes any progress the denationalizing absorbs the denationalized; that is—the first is found in the same degree in the second as the second is in the first.

It is often said that the scientific power of a nation is declining if it keeps its productions within its own country. It is by no means lost; but the results come later and are not so great. But in the same degree as they improve the expressiveness of language in their own nation, they work with ten times the power for culture. The knowledge that the use of the national language is of particular importance in raising science and culture has induced the learned to forsake the universal Latin language. From the same motives, the Slavs of the present day should use their language in their literature; and the result of this step, as has been shown in our day in Russia, is so tremendous that no nation should hesitate to take it. National high schools in Prague and Agram outweigh armies

for Austria. The more equally the Arian way of thinking and feeling spreads among the Slavonic race, the less opposition there will be to others. The middle-European ideas of freedom, and the loving message of the middle-European religion will make those who now fight breast to breast, fight the fight for culture together. The reconciliation of Austrian races is of great interest for culture; and is not only a question of power for Austria but *the* question. There should be no trifling with this great want: Austria wants an Arian ally. If a true Arian tree of freedom could once be planted in Austria, which would bear nothing but genuine Arian fruit, then the Austrian races could assemble together and sing their national hymns, which would resound in sweetest harmony.

PROFESSOR BENEDIKT.

THE EDUCATION OF WOMEN IN THE MEDICAL PROFESSION.

The law of progress is the law of nature, as has been seen in the science of chemistry, of electricity, and medicine. Anterior to the time of Hippocrates, who was called the "Father of Physic," medicine was neither studied as a science, nor practised as an independent profession. The present age is no less noted than former times for its systems, theories, isms, and pathies. Prominently among these stands Homœopathy, by which we are taught that many times very little or no medication is the better practice, and that we may firmly rely for a cure upon the recuperative powers of nature. By another system—Hydrotherapy—physicians have been directed to inquire into the curative properties of water, and the various ways in which it may be advantageously applied as a remedial agent. The phenomena of Mesmerism next arrests our attention. By it surgery, in many cases, has been stripped of its horrors, and pain relieved as if by magic. And while it is the genius of these independent systems to exclude everything that is not strictly of themselves, allopathy, says Dr. Longshore, embraces within its expansive folds every known thing that is useful.

The entrance of women into the medical profession, receiving from those who employ them an equal amount of respect and confidence with their professional brethren, is no longer a question for speculation, but a well-established fact. The progress of the medical education of women in England can be dated from 1874, when at the house of the late lamented

Dr. Anstie, on August 22nd, the first preliminary meeting was held, in reference to the organisation in London of a medical school for women only. Mrs. Anderson, M.D., Dr. Buchanan, Dr. Chambers, Dr. Sturges, Miss Jex Blake, and Miss Peachey, were among the number present. It was resolved that a school should be formed in London, with the view of educating women in medicine, and of enabling them to pass such examinations as would place their names on the Medical Register. Subsequently, Dr. Billing, Dr. Elizabeth Blackwell, Professor Huxley, Dr. Charlton Bastian, and other influential men associated themselves with the movement. Dr. Anstie, with his indomitable energy and great personal influence, smoothed away many difficulties. To carry out the object of the founders of this school it was necessary:— 1st. That a series of qualifying lectures should be given. 2nd. That clinical instruction at a large hospital should be obtained for the students of the school. 3rd. That admission should be obtained for them to qualifying examinations.

In September, 1874, the Trustees of the future school received more than £1,000 in donations, and hence were enabled to secure suitable premises in Henrietta St., Brunswick Sq. A strong staff of lecturers was next secured, and a three years' curriculum of study arranged. The school was opened in October, 1874, when twenty-three students enrolled their names, and classes were held in nine of the branches pertaining to the study of medicine. During the three succeeding years further advances were made in surgery and five kindred branches, but as yet no hospital training was obtainable. By dint of great perseverance an agreement was signed which enabled women to be provided with clinical instruction in the wards of the Royal Free Hospital in Gray's Inn Road, dating from 1877. Meanwhile, the third want had been supplied, that of procuring the admission of women to a qualifying examination through the aid of the new Legislature when Mr. Russell-Gurney's Bill was passed. This Bill proposed to enable (though not compel) all the nineteen British medical examining bodies to confer their diplomas upon women. The ultimate advantages to be gained through the passing of this bill were gradually being realised by every student of medicine. It was not, however, until 1878 that the grand result was achieved, when the University of London granted the adoption of the Charter which provided that all the degrees of the University be open to women. The number of students now on the books is thirty-eight, eleven of whom are studying for the degree of the University of London, twenty-five for the diploma of the King's and Queen's College of Physicians, Ireland, and two are

amateurs. The total number of students admitted since the foundation of the school is eighty-six.

It seemed necessary and right in writing an article of this kind to give a few cursory facts relating to the subject, to which we call attention. Having done so, we may pass on to a few thoughts respecting woman's fitness for the profession, reasons why women should study medicine, and, finally, give a few hints respecting the knowledge with which she must acquaint herself in her medical work.

Most of the occupations assigned to women are those of a subservient character, where the scale of remuneration is graded by the interests or parsimony of others. Twenty years ago, where men and women were engaged in the same vocations, and the labours equal to the products of their toil the same, the compensation of the latter seldom exceeded one half of the former. Now, women's work and women's time are acknowledged to be of as much intrinsic value as her brothers'. While men of standing in the medical profession have given to women an encouraging word, her own sex are among her most earnest and determined opposers. Many make it a matter of conscience, believing that a woman is sadly wandering from her legitimate sphere when she attempts scientifically to administer to the necessities of the sick and suffering, though to do it ignorantly and empirically would seem to be within her appropriate province, and entitle her to the beautiful appellation of "ministering angel." Woman has not only shown satisfactorily that her intellect is fully capable of grasping and comprehending in a pre-eminent degree all the various branches comprised in a thorough medical education, but that she also possesses a peculiar capability to reason upon the various subjects presented to her mind, and thus familiarise herself with principles as well as facts. As long ago as 1852, Dr. Longshore, when addressing the female medical students of Pennsylvania, America, remarked encouragingly that: "So far as their medical acquirements were concerned, their instructors feared not the results. The zeal, industry, and perseverance with which they had prosecuted their studies gave an earnest of what they might expect. The remarkable manner in which their health and constitutions had borne up under the most intense and persistent mental labour, left them no cause of apprehension that their physical organisations would not sustain them in any emergency. And the judgment they had displayed in arranging, classifying, and adapting their studies to the best advantage, could not but be equally successful when brought into requisition at the bedside of the patient."

Those were indeed grateful words of eulogy, especially thirty years ago, and they have stood the test well up to the present day. One difficulty women have felt in the study of medicine is, that they have found books and instruments for study so expensive. The more knowledge they acquire the more keenly this want is realized, for it is then seen more clearly how much is lost in every branch by the inability to follow out the hints given in the lectures to verify assertions, repeat experiments, and appropriate by individual efforts the information which is vague and confused when simply listened to ; but this want will in time be supplied as more museums and libraries are thrown open for their use.

That women, from the acuteness of their perceptions, correctness of their observations, their cautiousness, gentleness, kindness, endurance in emergencies, conscientiousness, and faithfulness to duty, are not equally, nay, by nature abundantly better qualified for most of the offices of the sick room, especially the management of the ailments and necessities of their own sex, and the diseases of children, than man, very few will venture to deny. At the head of her family, woman's jurisprudence extends to the hygienic as well as to the domestic regulations of those over whom it is her province to preside, and every one acknowledges the utility of proper qualifications for the latter duty—the domestic work ; how much more imperative is the necessity for equal qualifications for the former—health ? Yet how few who take upon themselves this responsible position have given a single thought to the subject ! To the wife and mother is consigned mainly the guardianship of the sick room, and if more familiar with the symptoms, causes, and diagnosis of disease, they would be much better prepared to assume these responsibilities. It would indeed be a blessing to the race if more young persons, with leisure at command, would take the opportunities now offered of acquiring presence of mind, skill in tending the sick, acquaintance with the proper management of infancy, a knowledge of the difference between real and fancied ailments, and learn to guard their own health and the health of those dependent on them. It matters but little how skilful or devoted the medical attendants may be, unless their efforts be seconded by judicial, intelligent, well-qualified assistance, the chance for a favourable termination of a critical case is greatly diminished, and the prospects of a speedy recovery consequently vastly lessened.

There is a lamentable deficiency of a knowledge of anatomy and physiology of their own bodies among the women in this country, which is too strikingly apparent everywhere.

Ignorance of the proper management of children is also a source of incalculable suffering to the infant and consequently much trouble and anxiety to the mother. Hundreds of mothers inflict great sufferings on their children from ignorance, actuated as they usually are by the strongest feelings of love. In many cases they listen to every friend or visitor, and by anxious desires to benefit their children, they rashly enter upon a train of experiment in diet, clothing, exposure, &c., which often is pregnant with the most direful consequences to the health of the child and their own happiness.

Some may deem this a women's-right subject, but it differs from many other questions affecting women, because it concerns not only the interests of those who wish to follow an honourable and useful career, but the rights of the whole community. It is known as a fact that in some English villages women refuse to seek medical assistance because it can only be obtained from men. And, as Professor Fawcett says, if there are thousands of women in this country who would prefer that they and their children should be attended by women, it is an injustice to deprive them of the advantage. The question has been raised whether it is good for women and society that they should receive a medical education. Mrs. Garrett-Anderson, M.D., bears testimony that in the matter of health the medical profession of women is less trying than the life of a fashionable lady. As to the morals, the study is of an elevating character; and as to good manners, she thought that the habit of dealing with people of different tempers would be of the utmost value to women, and afford an exceedingly wholesome discipline. We thoroughly believe that women as physicians to their own sex and children would be a universal boon. One argument raised against such an idea is this: that their nervous systems could not sustain the strain put upon them by being more or less connected with patients who require surgical operations. The fallacy of this argument is at once perceptible when the fact is taken into account that the lancet is not used nearly as often as in the days of the old regime. And again, it must be borne in mind that woman's sympathies are even stronger than her nerves; and as sympathy is a great healer, especially among women and children, she can in some cases heal, where men fail with the lancet. But give to woman the knowledge necessary to constitute a good male practitioner, and she will generally supply all other necessities. Many of the ailments of women are imaginary, and require no local treatment: as a physician, woman, with her delicate tact, can understand this far better than a man can be expected to do. Thus she will often be able to seize upon the true cause

of indisposition, and gain the confidence of her patient in a way that will materially aid the diagnose of the disease. While the diseases of women are in a predominating number of instances caused through nervous weakness and general debility, the sickness of active men is just the reverse—tractable and local; hence they can be cured with rest, change, and diet, much more readily than woman's subtler maladies can. The latter appertain more closely to the nerves, and are affected by the mind: hence are more difficult to remedy by simply dosing, and require the most delicate treatment. Man cannot so well enter into the hundred and one reasons why this, that, and the other thing should affect the body as well as the mind. Hence in numberless cases ladies give some plausible reason for their loss of appetite, blanched face, and limp energy; such as a severe chill, heated rooms, &c.

As practitioners, women have found that they must study the human frame in health and disease, and, therefore, study all things which relate to, or have an influence upon, it. They must be so acquainted with the human body as to see with conception's eye all the various parts in their true relative position. This constitutes anatomical knowledge. They must be acquainted with the operations of those various parts—their modes and purposes of action: this constitutes physiological knowledge. They must be acquainted with the influence of all physical and moral agents on healthy man, with the properties of the *materia alimentaria*; of air, temperature, occupation; with the influence of location, seasons, and emanations—that they may know how to keep the whole organisation in a state of health: this constitutes hygienic knowledge. Anatomy, physiology, and hygiene form the group of studies which have for their object a knowledge of what man is and of what he should be, and of the mode of keeping his organs in healthy and harmonious play. They are the foundation of all correct practice, making known, as they do, those standards in human and external nature, to remedy or obviate departures from which it is the peculiar object of the medical art. They find they must direct their attention to derangements of functions, alterations of structure, the aberration from hygienic laws, on which such arrangements and alterations depend, and to the remedial means required to restore the body to physical soundness. All knowledge relating directly to these things is comprised under the terms pathology and therapeutics. They find they must be acquainted with the properties, relations, and mode of preparing remedial agents. *Materia medica*, pharmacy, and, to a certain extent, the collateral sciences, are, therefore, important

branches of study. They must be acquainted with whatever relates to operative surgery, obstetrics, and medical jurisprudence.

In medicine, as well as in theology, we need true inspiration for the healing art of our bodies as well as our souls. Mere technical knowledge is not enough. The physician may know but little of Latin or Greek, as, for instance, Hippocrates knew no Latin, and neither Hunter nor Armstrong knew either Latin or Greek. Dr. Christison, Professor of *Materia Medica*, in the University of Edinburgh, who took the highest honours for Greek both at school and college, testifies that since entering on the profession of medicine, he had found so little occasion to put his Greek to practical use, although pursuing the various branches of medicine as objects of scientific study, that he did not believe he could, at that moment, translate a single passage that might be placed before him. This fact simply illustrates the idea we wish to enforce, that technical knowledge, though important in itself, must not be considered as alone sufficient reason for concluding that that is all that is necessary. Many idiots might be taught to repeat a thousand sentences containing momentous principles and noble sentiments without having the slightest conception of their truth or beauty. The whole nomenclature of anatomy might be learned by one who had never seen further into the body than the skin, and in an examination merely verbal, the man who had paid exclusive attention to words, might shine far more brilliantly in his answers than he who had dissected much, but who had been more attentive to things than words. Dr. Rogers once said to his students: "Gentlemen, I shall explain to you principles and rules of practice from which you may derive great benefit in your professional career; I shall also describe to you the symptoms which characterize the diseases of which I shall treat, but experience constrains me to acknowledge that these descriptions alone will be of little service to you." He made that observation to impress on their minds the necessity and importance of observation and practical study.

Before facility and correctness of action can be attained in any profession or employment, the mind and its instruments must be well trained to act harmoniously in that profession or employment. Thus instruction by Millais would be insufficient to make a painter; by Powers or Canova to make a sculptor. To paint well a man must practise painting, and do it under the eye of a master who will correct his errors. In music the theory of notes may be readily comprehended by one unable to distinguish them when struck. Daily instruction

for twenty-five years would not enable a person to play a single tune with ease and grace unless he practised as well as studied. A professor of elocution may teach correctly the true emphasis of every word, but only practice will make an eloquent speaker. It is the instruction combined with attentive discipline of the necessary faculties and instruments of motion which imparts to the musician such sweetness, grace, and facility of execution. Let a man of fine natural endowments and extensive acquirements come before an audience for the first time as a speaker, and his efforts will be comparatively feeble and unconnected. But mark him after he has become habituated to public speaking. How well he marshals his facts and illustrates his arguments, at the same time that he is infusing beauty, pathos, sarcasm, or indignation into his melting or burning periods, yet with the necessity of training the faculties by exercise, judicious and long continued, thus plainly stamped on the mental constitution.

Medical training, to be complete, requires even more practice than art, music, and elocution; or else how will the student be able to discriminate from each other the hundred varieties of disease, to appreciate in each the modifications produced by age, sex, climate, occupation, temperament, previous condition, recuperative power, peculiarity of habit, idiosyncrasy of constitution, and local complications, to enable him to decide, when administering medicine, the effects produced by disease from the effects produced by the medicine itself; and also the proper time for augmenting, diminishing, changing, or suspending the remedial course, to enable him to operate? Thus it will be seen that medicine becomes the study of a life-time; and all cheer to those noble-hearted women who tread along its paths! The time spent in alleviating the sufferings of others is time well spent, and must reap a rich reward, both along the road and also when the life-work here is ended. And when the roll call is read, the salutation will be deservedly given to every earnest student—"Well done, good and faithful servant!" J. A. F.

THE LUNGS, HEART, AND DIAPHRAGM.

In the development of the art of elocution, certain organs which constitute important parts in the physical structure of man are especially indispensable; and four of such organs are the lungs, the heart, and the diaphragm.

The lungs are located in a framework known as the thorax, or chest; and this framework is conical in shape, and com-

posed of bones and soft tissues, and also of muscular and cartilaginous fibres capable of expansion and contraction ; and it is limited in its upper posterior position by a portion of the dorsal region of the spinal column ; in front, by the sternum, or breastbone, and six costal cartilages ; and laterally, by ribs whose posterior extremities unite with a lower portion of the dorsal region just mentioned, and by external and internal intercostal muscles, so intertwined and placed in the interstices of the ribs as greatly to facilitate the process of natural and more especially of artistic respiration ; and this framework converges, or tapers, as it ascends, until it terminates by forming an orifice known as the superior opening, whose border is nearly on a plane with the first pair of ribs ; and this framework constitutes the structure prepared with such divine skill as the most appropriate department for the lungs.

The lungs, which are the essential organs of respiration, are cone-shaped, and very appropriately correspond with their external framework ; and they are formed in two parts called lobes, each known as the right or the left lobe, the right of which has three component parts, while the left has but two. The substance of which the lungs are composed is somewhat transparent in youth, but becomes in advanced age variegated with dark spots ; and it is spongy, elastic, crepitating when handled, and weighs, both parts being taken together, about forty-two ounces ; and this substance comprises three layers—*stratum super stratum*—the first of which is serous ; the second, known as the areola tissue, composed of elastic fibres ; the third, called the parenchyma, or pith, permeated with lobules and lobulettes, and known as the pulmonary stratum ; and the lungs thus constituted, contain several millions of air-cells which render them so buoyant that they will float when deposited in a liquid like water, and which although their number can never be increased, are yet capable of containing an amount of air sufficient for any emergency in the process of artistic respiration ; the air being supplied by the ramifications of the bronchi, two diverging branches of the trachea, or wind-pipe, which enter each its appropriate right or left lung.

The lungs are formed in two parts, each part having a base, two borders, two surfaces, and an apex ; and each of these parts is enclosed in a membranous sac known as the pleura ; and, thus enclosed, both parts are suspended in the framework, previously mentioned, so as to extend just through its superior opening, from which point they are attached to the roots of the neck by nerves, muscles, glands, ducts, veins and arteries ; and the right and left borders of the pleura, when the two sacs are taken as a whole, unite with their appropriate lateral

internal surfaces of the framework ; the sacs with their contents being held in their nicely-adjusted position by the roots of the lungs, which roots consist of nerves, tissues, glands, pulmonary veins, and arteries, while their bases rest on the convex surface of the diaphragm. And here let me say that the membranous tissues known as the pleura, are of such a sensitive nature that what oftentimes seems to be but a slight cold, will so effect them that the result will be a well-known disease which so often and so quickly proves fatal to its victim.

The heart is the next organ which comes to our notice, and it is an organ conical in shape, and composed of two cavities, with appropriate blood-vessels, the cavities being formed by a perpendicular division, and known as the right and left cavity ; and each of these cavities forms a distinct system, one for conveying the venous blood to the lungs and returning it when oxygenated, the other for distributing the purified blood to the various parts of the body and taking it back to the heart ; and while these cavities are different in their operations, they are, nevertheless, in sympathy, and act harmoniously.

The heart is about five inches in length, three and a half in breadth, and two and a half in thickness, and in manhood it weighs from eight to twelve ounces, but increases somewhat till quite an advanced period in life ; and being enclosed in a fibro-serous and membranous sac, known as the pericardium, it is then placed between the lungs in such a manner that during inspiration they partially cover its posterior part ; and the two cavities of the heart, to which we have already referred, and which we regarded as formed by a perpendicular separation, are also transversely divided, so that four cavities are thus created, the upper of which are known as the right and left auricles, and the lower, as the right and left ventricles.

The venous blood passes through the superior and the inferior vena cava and the coronary sinus and enters the right auricle of the heart ; and, thence descending to its right ventricle, is carried by the right and left branches of the pulmonary artery to the lungs ; where, impregnated with oxygen by the purifying process, in which the mesh-like capillaries and the ramifications of the bronchi unite so as to operate in obedience to their scientific laws, it is taken up by the thread-like branches of the pulmonary veins, which spring from the meshes of the bronchi and capillaries of the pulmonary artery, and conveyed by them in its arterialed or purified state to the left auricle of the heart, and thence to its left ventricle ; from which it is then distributed by the aorta and its branches to the extremities of the body, to be

returned, after having spent its vitality, to the right auricle of the heart, again to go through the same process as at first.

The heart bears the same relation to the human system as does the mainspring of a watch to the intricate machinery with which it is connected; and anything, therefore, which interrupts the communication, continually taking place between the heart and lungs, will result more injuriously, even in death itself, if the blood be not oxygenated, than would arise if one lung were in a state of decay or actually dead.

We come at last to the consideration of the diaphragm, which is regarded as the great potential agent in the mechanism for respiration, and, therefore, for the production of articulate language.

The diaphragm is elliptical in form, fan-shaped, musculo-fibrous in substance, and serves as the partition between the thorax and abdomen, its convex surface being as the floor to the thorax, while its concavity forms the roof to the abdomen. The diaphragm is stretched from side to side and fitted into the lower ribs; and then united with two ligamentous arches by the inner surfaces of cartilages and bony portions of ribs, it is joined to the second lumbar vertebræ; while its apex, or upper border, is united to the sword-shaped substance known as the ensiform cartilage, which is attached to the sternum, or breast-bone. Thus the diaphragm causes the lungs to be enclosed within an air-tight cavity, whose movable walls are capable of expansion and contraction; and, thus arrayed, it becomes as the *summum bonum* in the mechanism for respiration; and the philosophic principle developed by the united operations of the lungs and diaphragm may be appropriately symbolised by the action of a bellows.

The process of artistic respiration requires a construction at the base of the lungs, which we will symbolise by a mechanical lever of the third kind, of such power as to be capable of propelling a column of air to the top of the wind-pipe, where it will be in a condition to be moulded into articulate language by the special organs of speech; an impetus powerful enough to expel the air through the various cavities while the articulative organs are in operation. We have just said that the diaphragm is the greatest good in the mechanism for respiration, and we should remember that in regard to artistic respiration, the importance and benefit of the diaphragmatic action will be proportionate to the influence which the will exercises over it in the communication of its power through nerves of motion, which arise in the brain and are associated, in their operations, with the muscles of the diaphragm.

We ought not to overlook the wisdom of the Creator in giving to man a mechanism for voice as well as for respiration;—a mechanism which not only acts through its component parts as the great instrument in artistic respiration, but also as the remedial or chemical agent for purifying the blood by the scientific process of oxygenation. Natural respiration is the simple act of breathing, as in sleep, while artistic respiration denotes that scientific manner and condition of respiration most essential, and, therefore, most beneficial for articulative expression; and hence we see the necessity of the diaphragmatic process in order to get “long wind”—an act so often necessary in continuous and prolonged expression; and we are here reminded of a fact, which we will use as an illustration, that a distinguished English divine could rise step by step to his climax, repeating forty words or more without renewed inspiration. By appropriate costal and diaphragmatic exercises the lungs may be expanded to such an extent that we can “pack away” in their cellular tissues a large quantity of air, to be propelled through the air-tubes as we will, and thus fresh supplies of air will be continually furnished to take the place of that expended in speaking.

In closing I would say that the mucous membrane sustains a most important relation in the mechanism for the production of sound; and that we should possess a proper knowledge of the physiological nature of this tissue, for it lines all the cavities, even from the lowest depth to the lips, and is regarded by many as the medium or true basis of sound.

H. CARPENTER.

CLAIRVOYANCE.

There are three very notable cases of clairvoyance made public at the present time. The case of Mrs. Croad, a lady now living at Swindon, is told in a little book called “A Life of Suffering.” She is deaf, dumb, paralysed; but reads, and discerns pictures and writing in the dark. She holds a pencil in her mouth and writes her thoughts, and can understand you by writing on her cheek. The case is fully reported by the learned physician and physiologist, Dr. J. G. Davey, M.D., of Bristol, the sufferer’s medical attendant, and published in the “Journal of Psychological Medicine,” vol. vii., part 1, edited by Lyttleton S. Forbes Winslow, M.B., D.C.L. It seems to be a case of brain or nerve sympathy or contagion, since she is aware of her daughter’s thoughts, when the daughter touches any part of her person. But I need not

detail further. The little book is to be had at J. Burns', 15, Southampton Row, Holborn; and Dr. Davey's account to be seen in the journal mentioned, who concludes: "I know not how to avoid a still further reference to the clairvoyant faculty evidenced by Mrs. Croad; but this paper would be incomplete were I to omit some additional reference to it." The case, though of a mixed character, is clearly one of "spontaneous clairvoyance," being the exception to the rule. So far as I have gone into this matter, I feel justified in this assertion. Dr. W. Gregory, who follows, or did follow, (is dead,) in the wake of Drs. Elliotson and Ashburner, and of Mr. H. G. Atkinson—Dr. W. Gregory, I say, affirms that that particular condition of the nervous system held as the cause or starting point of this strange faculty or power (clairvoyance), is one induced or created artificially, *i.e.*, by Mesmerism or by Braidism, so called. The general or waking state of Mrs. Croad may be held to negative its spontaneity; but it does no such thing. Clairvoyance does not belong only to the higher stage of the mesmeric sleep: "It now appears," writes Gregory, "that it may in certain cases be produced without the sleep, and, moreover, when the subject of it is in a state of ordinary consciousness. Indeed," he continues, "if we are to regard clairvoyance as simply the power of noticing or observing certain very fine or subtle impressions conveyed from all objects to the sensorium by the medium of a very subtle agent or influence [in an all-pervading medium like that of light.—H. G. A.] which we may call vital mesmerism, the impressions caused by which are usually overpowered by the coarser impressions conveyed to the sensorium through the external organs of the senses, it is evident that the essential condition of clairvoyance is not the sleep, but the shutting-out, of the impression of the senses. This occurs, no doubt, in the sleep; but it also occurs in the state of reverie and abstraction, and may, in some cases, be effected at pleasure by voluntary concentration."

Now, such "voluntary contentration" is very plainly seen from time to time in Mrs. Croad, and when she is doing her best to describe any given picture-card or photograph. Then surely the sensitive character of nerve and brain may be supposed, even *a priori*, to have sympathetic relations in the presence of such facts as the sounding and sensitive flames, and the strings of musical instruments in accord responding to one another—and, with the exceptional wonder of Nature, analogy helps us much. But before theorising, we must establish the facts.

The next case presenting itself we may read of in all the

newspapers. It has convinced Dr. Carpenter and Professor Huxley. I mean the case of Mr. Bishop, and which, as far as we have heard, is a case of thought-transfer by contact or nerve contagion. The third case is very different. It is that of a French boy, similar to the calculating boy, Bidder, afterwards the celebrated engineer with Stephenson, who, like this French boy, solved difficult sums or problems in arithmetic in an amazingly short time, but unaware of any process by which he came to the results. The French boy fancies it is his dead mother that prompts him, and in which nerve sympathy can have no concern. The case has been tested by the highest authorities; and as they teach him the ordinary method, his clairvoyant power disappears, as it did in the case of Bidder, to whom the possession of the power remained as great a mystery as to others; but the highest condition of clairvoyance is the foreseeing events called prevision, and known as prophecy, making all time as our duration, and the future as if it were present. Now, the power of the calculating boy to at once perceive a result in a complicated problem, without any conscious means or process, comes near to the mystery of prevision, as does also the instincts of animals: the spider weaving its marvellous web to an end without learning or foreknowledge—or, say, the young bird building its nest for what it could not anticipate; or the inanimate, correlating, unconscious, constructive principle that fashioned the bird to the end that it shall build a nest for a purpose of which it must be ignorant: and here a Dr. Carpenter steps in with the notion of a mind in nature; and Mr. Charles Bray going a step further in his pantheistic fancies and “special providence,” and both ignoring the Creator or God of the Christian, looking on outside of Nature. But enough for the present, or we shall be diving down to the summary law of Nature, to find a fundamental unity exhibited in the analogies observed throughout all nature-mind-instinct correlation and dependence in that summary or formative principle on which all rests, and the whole based on mathematical rule and certainty.

H. G. ATKINSON.

JUDGMENT AND FORETHOUGHT IN THE EDUCATION OF CHILDREN.

The question is frequently asked how it happens that “promising” children so seldom fulfil the anticipations of parents and friends when they arrive at manhood or woman-

hood? In many instances probably what are supposed to be indications of talent or genius, would not be considered such by less partial judges. But this explanation only does away with a certain proportion—say one half—of the failures. But what of the other half? What is the cause of their not coming up to the promise of their youth? We believe that in nine cases out of ten the fault is to be laid to unwise management and improper training. The truth is, more forethought and less self-indulgence is needed in the training of youth. We please ourselves too much, and study their future too little. It is so easy and pleasant to gratify our own vanity or ambition by stimulating and exhibiting them in points where they excel; it is so hard and comparatively tame to exercise them in what they are deficient, and to foster their most meagre abilities. Yet, until educators acquire the necessary self-control and patience to do the latter; until they can work quietly and steadfastly without display, and fix their aim on future results instead of present glitter, the most promising children will continue to sink down into inferior men and women.

The qualities that are the most attractive in childhood are not by any means the most valuable in maturity. We look for determination, will, decision of character, firmness in the man, and refuse him our respect if he have them not. But when the child exhibits these qualities, even in their incipient stages, we are annoyed, and perhaps, repulsed. Instead of rejoicing in his strength of will and guiding it into right channels, we lament it as a grievous fault in him and a misfortune to us. It is the meek and yielding child who cares not to decide anything for himself, in whom we delight, and whose feeble will we make still feebler by denying it all exercise. Yet, when he grows up and enters the world and yields to temptation, and, perhaps, disgraces himself and his family, we look at him in imbecile wonder that so good a child should have turned out to be so bad a man, when, in truth, his course has only been the natural outcome of his past life and training. The power of standing firm and going alone we know to be desirable in the adult, but the child seems more loveable who is utterly dependent upon us, and we therefore strive to cherish this dependence, shutting our eyes to the fact that we are thus actually unfitting him for the life that awaits him. Concentration, too, is a quality that we admire in the adult, but greatly undervalue in the child. We prefer that he may be easily drawn away from what he is engaged in, and quickly turned from one thing to another at our pleasure; and while we praise him for his ready obedi-

ence, or rebuke him for seeming absorbed, we are really breaking down the power of concentration, and depriving him of its invaluable results.

It is true that many things are suitable for manhood that are not for childhood, but this is not the case with mental and moral qualities. If it were, there could be no such thing as consistent preparation for a good and useful life. Every quality that the man or woman needs is incipient in the child, and needs development and exercise. Our part in his training is not to cherish in him simply what is most attractive to ourselves, or what feeds our own and his vanity, but rather to study his future needs, and to help him to supply what is most lacking. It is where he is deficient, not where he excels, that our earnest efforts are demanded. Not until parents and teachers realize this so fully as to identify with it their highest interest and pleasure in their charges, will promising children fulfil their promises, and the question no longer be asked, "What has become of them?"

BETTINA'S FLOWERS.

Bettina's garden was a queer one; only a little earth in a box which stood in a window, and the window was not near the ground either; it was up five long pairs of stairs—on the very top floor of an apartment house, where, in one room, divided in two by a wide curtain, Bettina and her father lived. Bettina was housekeeper, and did the marketing—when there was any to do—and the long stairs tired her poor little legs dreadfully.

Bettina's father was poor, but then he was a German, and poor Germans are not nearly so poor as poor other people. They know how to live, and, what is more, how to be happy on a very, very little of anything.

One day, when Karl Binden (that is the father's name) was looking through an old chest, to see if there was anything to sell, he found five little withered-looking bulbs.

"Ach! the dear onions! Now we shall have some soup!" cried Bettina, her blue eyes dancing in expectation of a feast.

"Those are not onions, dear child," her father said, taking up the bulbs as carefully as if they were so many lumps of gold. "They are hyacinth bulbs. Mynart von Donk, the gardener from Haarlem, who came with us across the sea, gave them to me. He said that in Haarlem they would be worth nearly five thalers each. How could I forget them? Now they have lain so long away they be 'no goot.' Besides, we have no garden."

"O, make one, and plant them, and see!" cried Bettina, whose frugal little soul could not bear to waste anything. So her father made a small, oblong box, which he carried down stairs, and filled

from a pile of black dirt that had been lying before the house door for days and days.

"Ach," he said, stopping his work to look around on the other piles of dirt that lay scattered up and down the street, "if the Harlem gardeners had all this they would think themselves rich; but here no one does want it. I think it has been here a month. Well, it is a great country, this?"

Then he sent Bettina to the store for a penny's worth of fine, white sand, which he mixed with the earth, then put the box on top of his head, carried it upstairs, put the bulbs carefully down under the earth, one in each corner and one in the middle, then set the box away in a dark closet for ten days; and on the eleventh day he set the box in the window in the bright sunshine. Pretty soon there were five of the loveliest little green things peeping up through the black dirt. And they grew, and grew, and grew, till one blessed morning there were three great bunches of flowers—one blue as Bettina's eyes, one pink as her cheeks, and one white and pure like the dear child's soul.

O how happy she was! her little nose sniffed the delicious fragrance, and her eyes feasted on the beauty of the flowers, and it seemed to her as though the poor, bare room were a palace, and she richer and happier than any princess. The next day there were two more flowers, another pink one, and a lovely striped one; then Bettina was happier than ever; and so was Karl, the father.

The window was raised to let in the fresh air on the dear flowers, and Bettina heard her little neighbour, Jimmie Kary (who had been sick for ever so long) say:

"Mother dear! listen with your nose a minute! There are flowers near me! I'd get well if I had one, I'm sure!"

Jimmy was blind and a little bit deaf from scarlet fever, and he often said queer things.

"What shall I do?" cried Bettina. He must be made well! but I cannot cut off one of my dear flowers. It would be like cutting off some one's head. Maybe I can lift the box." But she couldn't.

The door was open a way, and just a nose came in, sniffing, sniffing, and a voice said,

"Hyacinths, eh? and fine ones too! Just what my wife wants for her dinner-party"; and the doctor, who was going to see Jimmy, came into the room along with his nose.

"I'll give you three dollars for those hyacinths, little girl," he said.

"Three dollars!" That would pay the rent for a month, and get something good for the father too, Bettina thought. But how could she give up her treasures? Just then Jimmy's voice came through the window again.

"O mother, it's dyin' I am for a touch of that swate flower! Can't ye get it for me?"

The doctor did not hear the faint, weak voice, but Bettina did, and made up her mind.

"I'll sell three of them," she said.

"No, no! all or none," said the doctor gruffly—for he liked to have what he wanted. And he went out, slamming the door, and was so vexed that he forgot entirely about Jimmy.

When the father came home Bettina told him what had happened. "He didn't go near Jimmy!" she said, "You must cure him." Then Karl carried in the box, and set it in a chair by the sick boy's bedside; and Bettina guided his thin white fingers over each one of her dear flowers. And by-and-by Jimmy fell asleep.

"It's the blessed flowers!" said the poor, tired mother, with a sob of thankfulness. "He hasn't slept a wink this week."

Then Bettina did what she thought she couldn't, broke off one of the lovely pink bunches, and put it in a glass of water—and when Jimmy woke up there it was beside him. And when that faded she gave him the blue one, and then the white one, and before that had faded—it's as true as can be—Jimmy was well. The doctor came in that day and said so.

"It's the flowers that cured me, intirely," said Jimmy (which wasn't very polite to the doctor); then he told what Bettina had done.

"Dear child!" said the doctor, with something like a dewdrop sparkling on his spectacles; "and I was angry with her!" Then he went in to see Bettina, and kissed her. That was his apology. And he paid Karl Benden ten dollars for the promise of some of the bulbs when the hyacinths should be done blooming.

That was the beginning of better days. Now Karl is a florist, with a nice little store of his own, where he has the loveliest flowers. His hyacinths are the finest in town. He won't tell other florists why, but—there is never a pile of black dirt left standing in front of his store; that I know.

Bettina and Jimmy are Karl's little assistants. Yes, blind Jimmy! whose senses of touch and of smell are so fine that he can arrange the flowers almost more beautifully than Bettina. But when you have a bouquet that is the loveliest you ever did see, you may be sure that Bettina and Jimmy both together made it.

Facts and Gossip.

It is hardly to the credit of the thousand-and-one so called religious periodicals that it is to papers devoted to sport that we have to look for condemnations of the craze of fashion. A sporting contemporary thus comments on the prevalent idiocy in this respect:—There is no disputing the fact that the majority of women who are now pointed out as possessing magnificent figures—in their clothes—would horrify and disgust the sculptor, the painter, or the anatomist, if seen in nature's garb. The craze for tight-lacing, always powerful during the past fifty years, has grown with its growth, and strengthened with its strength, until we find now that women will suffer any torture rather

than appear stout, or, for the matter of that, properly developed. It is because of this weak womanish desire that quacks who vend nostrums guarantee to reduce a female Daniel Lambert at the rate of two stone per diem without abstinence or exercise of any kind, have managed to flourish and make large fortunes. Warnings of the wickedness—it is nothing else—of tight-lacing are plentiful, but they only too evidently go for nothing. Crinoline is not an article of dress that men can admire over much, but it certainly prevented strait-bodices going to the lengths, or rather the narrownesses we find them going to this season. Close-fitting skirts, pull-back dresses, and no petticoats, are likely soon, we are told, to give way to still another new departure. Whether this be so or not, for years now the chief desire among our womenkind has been to emulate the lamp-post—with just this difference, that the lamp-post is what it professes to be, and is presumably the shape that a lamp-post should be, while the woman, as found at the majority of fashionable gatherings, is anything but womanly in figure, whatever she may be in other directions.

SEVERAL gentlemen contemplating emigration to New Zealand with their families will be glad to communicate with others similarly inclined. Their objects are to acquire sufficient land to support themselves and families, to live in pure air, under the best health conditions, and to lay up a provision for the evening of life. The parties going out are inclined to the vegetarian and hydropathic systems, but no arbitrary rules will be laid down, as the plan is for the real happiness and comfort of all concerned. One of the gentlemen, having a thorough knowledge of bush life and farming in New Zealand, is willing to go forward as a pioneer for the others, build houses, and get as much land under cultivation as possible; which would enable those following to enter upon their colonial life with a degree of comparative comfort. Of the beautiful climate and the natural fertility of the soil of New Zealand it is unnecessary to speak here. The district chosen is particularly free from excessive changes of temperature.

In a brickfield near Lützen (Saxony) some 200 sepulchral urns, skulls, and bones have been found. Dr. Virchow has examined one of the skulls, and declares it to be of a very peculiar type, somewhat resembling the well-known Neander skull, but yet differing from it sufficiently to form a special type of its own. The whole discovery at Lützen, combining cremation and ordinary burial, is at present unique. No ornaments of any kind were discovered.

M. FAUVEL, of the Paris Municipal Laboratory, has discovered an additional objection to that abominable invention, the baby's feeding-bottle. Of 31 feeding-bottles taken from various *crèches* in Paris, 28 contained both animal and vegetable life; the milk remaining in all smelt badly, was acid and half-coagulated; the globules were

deformed, and numerous very lively bacteria, along with some vibrios, were present. On cutting open the caoutchouc tube throughout its length, coagulated milk with small organisms was met with; but a still more important fact was the presence in the nipple of a mass of vegetation of cryptogamic nature. Some of these bottles had been washed and were ready for use.

THE evil of tight-lacing was shown at an inquest recently held by Dr. Danford Thomas, coroner for Central Middlesex, upon the body of Mrs. Amelia Jury, aged 48, of Kilburn. Dr. Fred. A. Hill, in his evidence as to the cause of death, stated that upon making a post-mortem examination he found that the stomach was contracted in the middle by a firm band, narrowing it to one-eighth of its usual size, so that there were virtually two stomachs, and this contraction was on a level with a deep indentation on the liver, corresponding to where the stays were tightly bound round. The liver itself was flattened out, and was driven down very deep into the pelvis also, and there was no doubt that this was also produced by tight-lacing. The Coroner said that he some time ago held an inquest where it was shown that the liver had been very seriously injured through tight-lacing, and perhaps these cases would act as a caution against the practice now adopted.

THE continuation of the series of articles on "The Face, as Indicative of Character," is again unavoidably postponed on account of the indisposition of the writer.

Poetry.

SONNET.

The children sleep; their toys are thrown aside;
Here lies a ball, there picture-books and bricks,
And yonder, 'mid a heap of broken sticks,
Dear baby's doll, armless, and but one-eyed,
Yet all the more beloved because 'tis so;—
I bought it for her but the other day:
It had a pretty face as people say,
And Sissie dressed it gaily, made her crow
For joy, it looked so smart, but soon, alack!
Its beauty all was gone,—yet it is well
Beloved in homely guise, for homely things—
The things that twine about our daily track—
Make them a nest within us, where they dwell
Sweetly and undisturbed by flighty gilded things.

THE form of the head of Guiteau as represented by the photographs taken two years apart, are very similar, but the expression and general physiognomical appearance are very different. Both heads are apparently large, broad at the base, broad and full at the sides, and well rounded up at the top. He has an excess rather than a deficiency of the various mental powers. The indications of the likeness taken in 1879 point to great strength of feeling, energy, earnestness, and determination; the expression shows an earnest looking for something most desired, mingled with fear and suspicion. His features are marked, and his tone of mind is strongly manifested in them. His eyes are full of meaning; his ears, nose, and mouth indicate anything but refinement and delicacy of feeling. The entire base of the brain being large predisposes to selfishness and grossness of mind. His broad head indicates a greedy, suspicious, uneasy and unsatisfied state of mind. His forehead is that of a man with ideas without any practical talent or definite observation. He would find it very difficult to set himself to work or attend to ordinary duties. The emotional nature is very strong, and he has altogether a speculative turn of mind, having great enthusiasm, without common sense to guide or turn it to account. He has extravagant imagination, guided by an abstract, theoretical, unpractical cast of mind. The entire make of head, and expression, indicate not only great selfishness and consciousness of his own importance, but great ambition and desire for recognition. His expression is as much as to say, the world was made for *me* first, and for you afterwards. The likeness taken of him in July, at Washington, 1881, indicates the same general capabilities according to the form of the head, but the tone of his mind has undergone a very great degeneracy, as shown by his expression. He looks disappointed, desperate, defeated, desponding, and demented, without a ray of hope. His features are more gross, his mind more abstract, and lost to the practical world. Such a cast of mind could not act in the ordinary groove of practical men. He has been as good as lost to the external practical world from birth, and always alone in his ideas and views. He is constitutionally energetic, and takes extreme and different views of things from other men, none of his plans being practical or available. He could not easily fall in with the views of others.

WE are pleased to notify that our agent and correspondent, Mr. Jas. Coates, of Glasgow, has just removed into large and commodious premises in Royalty Buildings, Sauchiehall Street, where literature and everything connected with phrenology, may be seen and purchased. We have had pleasing testimony of Mr. Coates's ability as a phrenologist, and can recommend him to those who need phrenological advice or tuition.

THE
Phrenological Magazine.

SEPTEMBER, 1881.

GAMBETTA.

FEW men are estimated at their real worth. Many are vastly overrated because of favourable surroundings, because circumstances have conspired to bring them prominently before the public, or because friends or interested persons have done much more for them than they could possibly have done for themselves. Others, on the contrary, equally great by nature, and as capable of taking a prominent public position and of exerting a great and beneficial influence in society, do not become known or appreciated, because there have been no favourable opportunities to call them out, and no friends to bring them forward ; or else they are occupied with subjects not of a public or popular nature, and so do not catch the breeze that puffs into notoriety. Others, again, may lack some one element of mind, such as courage, ambition, or enterprise, to stimulate them, and so fail to gain the eminence they might.

With an organisation like Gambetta's a man can hardly help coming to the front. There is that about the combination of his powers that makes it almost impossible but he should rise to the top, and become of the first rank, whether or no. He cannot be held back, kept under, or confined to a quiet sphere so long as he has health, and there is something to do.

He is not so highly vital in his organisation, but he has a high degree of nervous and motive power. His entire make-up indicates force, push, executiveness, and desire to overcome. The base of the brain is large and very influential, making him not only energetic and forcible, but strong in his likes and dislikes, strong, too, in his appetites and desires. What he wants he wants with all the energy of an extra strong nature.

The side view of his head shows the frontal lobe to be long,

and all the perceptive faculties to be large. These faculties, joined to the organs in the base of the brain, give him great power and influence over others, because he estimates the qualities of men and things with great accuracy and rapidity, and because of the magnetic influence arising from the base of the brain enables him to carry men along with him.

He is not so favourably developed for a plodding thinker as he is for action and agitation. His best thoughts come more as inspirations than as the result of patient investigation.

He accumulates knowledge very rapidly by observation and contact with others, and at once takes in the whole situation, and knows what to do and say on the spur of the moment. His mind works too quickly rather than too slowly; so that he is premature and ahead of his time, rather than behind it. He is a born student, continually acquiring knowledge, whether it is just what he needs at the time or not. Information, however, never comes amiss to him, for he has a great memory of all the knowledge he has acquired; he possesses, besides, the ability to recall past experiences, and use his knowledge to the best advantage. So long as his health and nervous system continue sound, his memory of all that he has read and seen will be most remarkable.

Very few men enjoy such tenacity of memory, and at the same time such availability of talent. Language is large, which enables him to express himself with freedom and great copiousness. His style as an orator is rendered much more effective by his very strong emotional and executive nature, and by the magnetic power already mentioned.

The organ of Order is large, which, joined to his very large perceptive faculties generally, gives him great power to systematise, arrange, and lay out work; so that he is able to accomplish more than the majority of men in the same space of time. He possesses great organising power, and is naturally a leader and director of men.

The large amount of brain behind the ears indicates that he is strong in his social feelings, attached to friends, home, and country, and subject to powerful emotions. The social, together with the moral brain, would tend to give him great pathos and more than common devotedness to his friends or the cause he had espoused.

The moral brain is fairly developed in Conscientiousness and Benevolence, less so in Veneration and the spiritual faculty. The eye would indicate that Hope also is a fully-developed faculty, giving him enterprise and a considerable amount of enthusiasm.

M. Gambetta does not possess all the qualifications for a successful leader of men. He is better qualified for agitation and for fighting an up-hill cause, than for steady, uniform work, where imagination and enthusiasm would not be in place. He should be a little higher in the crown of the head, in Firmness and Self-esteem, to qualify him for a good leader, and larger Causality would aid in giving him more general comprehensiveness of mind. But the qualities that give know-



ledge, memory of history, observation, imagination, energy, sympathy, intuition, and strength of attachment, are all very great.

L. N. FOWLER.

M. Léon Michel Gambetta became legally a French citizen only ten years before he was dictator on the Loire. He was naturalized by a formal adoption of the French nationality in presence of the mayor of his native town, when he was

about to set out for Paris to begin the practice of his profession. His father, Joseph Gambetta, was an Italian who came from Genoa early in the present century, and settled as a grocer in Cahors, in which calling he prospered. His son Léon was born on the 2nd of April, 1838. The elder Gambetta is still alive in comfortable retirement at Nice. He possesses a natural eloquence, which his son has inherited, and he is a fine and agreeable talker. At eight years of age Léon lost the sight of his right eye—not, as a legend goes, by his own hand, to escape from school, but while he was watching a cutler boring the handle of a knife with a drill, driven by a bow, made of catgut and an old foil; the foil broke, and one of the ends entered his eye, which eventually had to be taken out in order to save the left eye.

Léon Gambetta got his first schooling at a small Catholic seminary at Montfaucon, but he only remained a few months there. In 1849 he entered the Lyceum at Cahors, where he attracted notice as a great reader, with a remarkable memory, and a pronounced taste for philosophy and politics. In 1857 he went to Paris to study law, and for three years was a courted and moving spirit among the students of the Quartier Latin. He was zealous, laborious, omnivorous in his studies, rising early and working hard, attending lectures at the Sorbonne, at the Medical School, at any place where lectures worth hearing were to be met with, varying his readings in law with the French classics. Nor did he forget politics. He was a great reader of the newspapers. We are told also that he was fond of "spouting" the orations of Demosthenes. He received his licence to plead in January, 1860, and determined to practise in Paris. His father advised him to settle in Cahors, as being more likely to succeed there; but young Gambetta had great faith in himself; it was fortunate also that he had an aunt who also believed in him, and who made it possible for him to settle in Paris.

Having been inscribed on the list of advocates, M. Gambetta was appointed secretary to M. Crémieux, who was afterwards to be one of his colleagues in the Government of National Defence. He became likewise a member of the Conférence Molé, of which M. Crémieux was president. It was in the debates of this Society that Gambetta, like many other French orators, first learnt the art of public speaking. During his early years at the bar, he remained at the office of M. Crémieux, and added a little to his income by acting as correspondent for the *Journal de l'Europe*, published at Frankfort. But employment gradually came in his way, especially in political and press causes. In 1862 he was engaged, on the recom-

mendation of Jules Favre, to defend Buette, a mechanic, who was implicated in an alleged insurrection, and it was on this occasion that he boldly denounced the Imperial interference with the course of justice. From that moment the workmen of Paris began to take notice of the one-eyed advocate.

M. Gambetta made his first appearance on a political platform in 1863, during the elections of that year, when the city of Paris gave its first vote against the Empire. Becoming gradually better and better known, he was at length, in 1868, employed to defend Delescluse, of the *Reveil* newspaper, in the Baudin case, and made a vehement speech which resounded through the whole country, and at once brought him to the forefront of public life. Gambetta's rise was now very rapid. At the elections of 1869, he was chosen for Belleville and Marseilles, and he decided to sit for the latter constituency, because Belleville was more certain to return a member of his own way of thinking. His first appearance in the Legislative body was to utter an indignant protest against the arrest of Rochefort for animadverting on the acquittal of Prince Pierre Bonaparte. On the 5th of April, 1870, he delivered, on the subject of the *Plébiscite*, one of the most remarkable speeches he has ever made. On August 23rd, he spoke against going to war with Germany. Ten days afterwards the Empire fell. From that date Gambetta's career is a part of history, and we need not describe here how, on September 4th, the Government of the National Defence was established under General Trochu, with Gambetta in the important post of Minister of the Interior; how, on October 7th, Gambetta left Paris, then invested, in a balloon, in order to establish a branch of the Government at Tours; how he raised three armies of in all 800,000 men, and directed a number of able though unsuccessful operations on the Loire; and how, in short, ever since he has worked indefatigably for the establishment of the Republic on a solid and permanent basis. All Gambetta's acts have not passed without criticism, even by those whose aims are substantially the same as his own, and there are not a few who affect to think that his policy is attended with extreme peril. Even these, however, doubt his impetuosity rather than his honesty.

SOME of the Swiss Cantons have followed the example of Germany in enacting a law that no boy under fifteen shall be allowed to use tobacco, either in the streets or at home. Is it not possible to copy the German law here so far as the streets are concerned? It would do immense good if even the age up to which the law could interfere were made ten instead of fifteen.

THOUGHT IN THE LOWER ANIMALS.

The following letter, written by a medical gentleman, formerly of Darlington, but at present residing in Dundee, has been handed to us by Mr. Fowler for publication :—

Dear Sir,—In the many lectures I have had the pleasure of hearing you deliver on phrenology, I never had an opportunity of learning your views on the comparative brain power of the lower animals, whether it is restricted to what is termed instinct, or embraces a distinct thinking ability, and a similar construction and organism of brain as in the higher animals. By way of extracting your *notions* on the subject I shall ask you to insert in your Journal my belief that even stupid animals have thought, and that the more intelligent have little or



PETER.

nothing beyond the power of thinking a thing and acting upon it, in the absence of education, and as that advances, if only by the companionship of an intelligent master, so does the animal advance in brain power until he acquires the power to have thoughts, draw inferences from them, and come to a conclusion, which is more than some of our own species are able to do. In the education of Peter, whose likeness I gave you, I endeavoured to make him illustrate that view, and hope you and your readers will think I succeeded when you have read the following account of some of his doings.

As you see by his likeness, he was a very handsome, fine-haired "Skye." His eyes were dark, with a thoughtful, pensive expression; he was very *teachable*, but rather sulky, and sometimes after learning a lesson he would refuse ever after

to do the trick if I found fault with him. He was very conceited, so much so that when newly washed and combed he would not cross a dirty road without being carried. He was particularly fond of carrying a walking-stick, and very proud of a smart looking one. I once put two down to see which he would prefer ; he looked puzzled at first, then resolved to take both by taking one so far, going back for the other and passing the first, returning for it, and so on. He discovered a clever way of taking them through stiles or other narrow places, laying them down, getting through himself, pulling them through by the end, then taking them by the middle again.

The first example of unusual sagacity occurred when living at Witton Park, three miles from Bishop Auckland, to which we had walked several times, and had gone by rail once or twice. On this occasion he did not offer to follow me, as I told him not to do so when starting to walk there. On reaching the house of a medical friend I was surprised to find Peter's ghost lying on the hearth. As he took no notice of me I was quite puzzled, until I found out that he had gone by train, and was afraid, or perhaps ashamed, on account of disobedience. After that he not only frequently went there, but also to Crook (three miles in the other direction), and I believe only once made the mistake of going in the wrong direction. The station-master said it was amusing to see how he always walked into the station first, as he saw other people do, and when asked if he had come for his ticket would wag his tail and sneeze (his way of laughing), then sit at the door and earnestly watch for the train's arrival.

I was laid up with illness some weeks. After the first few days of constant companionship, he went out every morning at the same hour exactly as I had been in the habit of starting on my rounds, and visited every house I had usually called at. He rapped at the doors so cleverly as to give the impression it was a visitor of importance ; he then walked in, made a point of always seeing the mistress of the house, to whom he wagged his tail, then walked off to make his next call. I have no doubt that his object in undertaking this duty was to show that I was not able to accompany him, so that I had not to be expected till another day, and that the people drew that inference from his visits.

With comparatively little trouble I taught him many *performances*, which he could not possibly learn without thinking, if not reasoning. I needed only to say to him "I want you to be a patient," he would then sit up, and, when asked to do so, hold out a paw to have his pulse felt, put his tongue out,

take imitation fits, lie down and *groan*, or rather growl, and on hearing he was dying, would stretch himself with nose and hind legs straight out, and take no notice of being pulled about, called by name, or even being held up by a hind leg, and allowed to drop, and when told he was coming to life again would lay his head on my hand with a very lack-a-daisical expression, and make a gradual recovery, finishing off with a spin round after his tail. It is very difficult to conceive how he could go through this elaborate professional performance as he did, without actually knowing what illness and death really meant. I cannot myself think how he was able to imitate them so accurately, the look of dejection when sick, and shutting the eyes when dead, were his own conception. However, I must confess his tail never died.

When the late Lady Trevelyan, of Wallington, was in ill-health, I allowed her to have his companionship for a few years. She was very anxious to exhibit his accomplishments; but the cunning fellow always disappointed her by committing suicide, as she said. Of course a dead dog could not be expected to do anything. When but a short time in office as her companion, she one day wondered at his hesitating to get into the carriage, when about to set off on a drive, as he always jumped in first. When asked what was wrong, he went back into the lobby and brought her over-shoes—first one then the other; she having forgotten to put them on, when they and a chair stood for the purpose.

On one occasion he went with her ladyship and Sir Walter to a gentleman's residence a few miles off. He was in the habit of going first out as well as first into the carriage. On this occasion he lay still, as he had heard the coachman get orders to take him back and be sure to bring him next morning. When the time arrived to start as directed, Peter was nowhere to be found. The coachman called upon me on his way to seek him, and saying he had whistled and sought for him everywhere, and the only information he could get was that he had gone out as soon as the doors were opened, and had not been seen since. The fact was he had managed to get into the coach-house before the gates were opened, and hid himself in the *boot*, and was lying at the coachman's heels hearing all the inquiries being made about himself, and did not divulge his presence until his destination was reached.

Of course of such a dog I could relate many interesting incidents, but will only tell one more.

When the Trevelyans were from home he invariably lived with me; but on one occasion the hall was being altered, when the rats were so disturbed that they took to the drains,

which gave him such an opportunity of indulging in his favourite amusement of rat-catching, that he never looked near me till one day I heard him rapping at the door. On admitting him he presented a most miserable spectacle—he having had such unequal odds to contend with that his face was covered with blood, and other indications of severe tussles with his enemies in the drains. After a patient endurance of the application of water, styptics, &c., he expressed his thanks, unmistakably, at both ends, by a look of gratitude and a wagging of tail; when he returned to resume his labours after a day or two's rest.

During the time the late Lady Trevelyan and I had a sort of partnership in dogs, we had an exceedingly small black and tan terrier, which Peter regarded with great respect—doubtless for his pluck and hunting abilities, which he made use of by taking him on hunting expeditions for a whole day or more. It was amusing to see how obedient the little creature was to his canine master; never going into a rabbit-hole or drain on his own account, but would return into the same one time after time if desired. Peter used to get very excited over the sport—especially when a rabbit bolted with Viney attached to his tail, which not unfrequently happened.

I believe dogs are beginning to be much better and more generally understood than they used to be.

I was much struck with the knowledge of the dog displayed by a judge, a few weeks since, at a trial. Two sheep-dogs worried £700 worth of sheep during the night. A man who saw them could swear to one dog, but could only describe the other, a dog living a few miles off answered the description; but the judge of a previous trial could not think he was the depredator, as he went to his bedroom earlier than usual the night before, and awoke a boy who slept in *his* room, by licking his face and hands about 5 o'clock in the morning; at that trial the owner of the other dog was sentenced to bear all expenses; but the second judge had no hesitation in finding the second dog guilty from the very circumstances on which number one judge based his innocence. He argued, wisely I think, that the dog retiring ostentatiously in sight of the whole household, being unusual, was likely done on account of guilty intentions, he having made an *understanding* with his friend; and his awakening the boy, being also unusual, was to call his attention to his being present, and having no blood upon him, having washed, although he neglected to dry himself, he doubtless thought his friend was in a position to defend him if any charge was made. Unfor-

tunately for him and his master, judge number two had met with similar instances of canine cunning.

I believe the same difference exists in dogs as in horses in the love or dislike to work. Some are never satisfied without they are doing something. I knew a dog at Darlington, who used to go to the police station every night at 11 o'clock; he followed the policemen as they marched along to their beats, till he came to one which he adhered to, although the "Bobby" was changed every week. I have no doubt the railway travelling dog lately spoken of in the papers is influenced by the same motive.

I knew a sheep-dog which for many years never missed night or day going backwards and forwards between North and South Shields, but, poor fellow, he was in search of a lost master.

Whilst some horses detest work in every form, others again get into trouble and are punished merely for being injudicious in expressing their pleasure when mounted or harnessed, especially after a few days' idleness.

I bought a pony out of a drove at a fair. After riding him 18 miles home I found him so reconciled to his work it was quite unnecessary to have him broken in. Eventually he became so fond of work that when in the fields, even in the night, I had only to whistle loudly, when he would come galloping to the gate, and stand to be equipped for the road. I had another pony in a field beyond his; he spent a great deal of his time watching for my groom going for the other, when he would open the gate with his teeth, and be at the stable first. I don't know whether "Sambo" knew the clock or not, but when out at grass he was always to be found at the village school-door at the children's dinner hour. I do not suppose he would have taken the same enjoyment in work had he gone through the usual tortures of "breaking-in," which very frequently engenders a hatred to man as well as to his work, and accounts for the Arab's horse requiring no whip and little spur.

But with us the greatest pets when young are by far the most liable to become vicious and misteached in breaking, which accounts for such animals generally being very handsome, and in other respects valuable. In my experience they are unusually appreciative of kindness if you can only get on the *right side* of them, and that they are invariably capable of greater affection than more gentle-tempered horses there is no doubt. Look at the instances where vicious racers have had to have a cat taken wherever they went, else their anger would render them unapproachable, and prevent them either eating or

sleeping. One which was in the habit of expending his ill-nature by kicking furiously in the stable, mostly at night, refused to be in the least controlled by his keepers, but would become as "*still* as a mouse" when spoken to by a little girl, a stableman's child, whose ability caused her to have very disturbed nights.

An entire horse called Vulture (very properly, as it nearly worried some of his keepers, and other horses), was so vicious that he required to be led, by having the end of a long pole fastened to his bit to keep him at a respectful distance, every year he was becoming worse, and a termination to his wicked career was contemplated, as no one would undertake his guardianship, when a very dissipated horse-breaker got him on very easy terms; the owner would not have entrusted him but he was known to have a very marvellous power over horses. In a short time the animal was so fond of him he followed him like a dog; the severe bridles, poles, loaded sticks for felling him with, &c., were from the first done away with; he even carried him on his back, an accomplishment he had never been taught, but what was more wonderful, when too drunk to keep his balance he would manœuvre from side to side to keep him on his seat, and if he fell off and was too drunk to rise, the creature would watch over him for hours, if required, and woe betide any one who attempted to go near him. I was frequently told by many who had witnessed it that when the old man was hardly able to walk the faithful animal used to keep him on his feet by a firm grip of his coat-collar with his teeth. This old man's influence over horses was such, I have known him halter a young one for the first time, lead it away to get acquainted with it, as he said, and return after midnight on its back—drunk of course—and the animal carrying him quite quietly.

I do not think my own personal experience in the management of misteached horses is of sufficient interest to give in detail; but I always succeeded, and hardly ever punished by the whip, but took advantage of their having judgment and memory. For instance, a beautiful cream-coloured cob, with long silver mane and tail, which would have been of great value, but for his determination to choose his own road, and to resist every effort to induce him to go yours: I had the use of him six months, and had no trouble with him on that score after the first night, which was a very cold one, and he was much heated. When we came to a road end, into which he was determined to turn, I kept his head in the right direction, and did not allow him to move. For a long time after he would have gladly gone in any direction. When cold, tired,

and shivering he cheerfully "went on his way rejoicing," and, as far as I know, never ventured to make a stand at any road-ends again ; whereas the punishment he had repeatedly endured by whip and spur did far more harm than good.

I could have given you many instances of judgment and the power of thought in the lower animals, but have preferred adhering almost entirely to my own experiences.

I once asked Dr. John Brown (Rab and his friends) why he had never spoken of my Peter—he having seen many of his performances. His reply was that he "liked a dog to be natural and not a performer of monkey-tricks." I am no advocate for teaching such tricks, but hold that the more education a dog, horse, cat, or any other animal receives, the greater the brain-power not only of them but their progeny.

I am, truly yours,

JAMES HOWISON.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE V.

ADHESIVENESS OR FRIENDSHIP.

I come now to a power which has never hitherto been considered as fundamental : it is that manifestation or power which brings together so as to constitute society. Philosophers have assigned many causes for the formation of societies, and we see that society itself is an institution of the Creator. Beings have been disposed to live in society from the beginning, and the reasons assigned for it have hitherto entirely failed. None of the powers commonly ascribed to society can be explained by it. If society was the cause of determinate powers, should not all beings living in society manifest similar powers? But this is not the case ; we find very opposite powers manifested by beings living in society. If you examine nature, you will find that some animals like to live alone, others in flocks. What is the cause of their living in flocks? Philosophers, who reason in their closets, say, that animals congregate to defend themselves, and that weakness is the cause of their association, and that among mankind interest brings us together, and that there are no other reasons. But is it true that weak animals live only in society? Look at dogs, hares, and rabbits. Bring hares and rabbits together, the hares will soon make the rabbits run, and the rabbits will live together, whilst the hares will remain alone. Have you

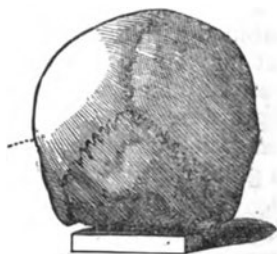
ever seen large herds of foxes, or large flocks of magpies? The fox and the magpie live alone, whilst the elephants, which you will not be disposed to call weak animals, like to live in large companies. You will never find that animals, being weak, associate together to defend themselves; there is an organization that gives the power of bringing them together. If you reflect a little more upon society, you will find that beings live together in pairs, male and female. The rooks live together in great numbers; many build their nests on the same tree, but they live together in pairs on the different branches. We find that mankind, although living in large numbers together, live together in pairs throughout their whole life. Thus we see that society is an arrangement of nature. I have already taken the liberty of saying, that man does not like to be compared with animals; he is too proud, and he thinks that everything he does is merely the result of his understanding. Understanding is given to man, but many feelings are also combined with the understanding, and feelings of which the intellect may approve. There is great regularity in the events of nature, and many things happen in man which the understanding approves.

Let us reflect upon society at large, and on the modifications of the feeling which gives rise to it, and first of that one which is called Friendship.

Among mankind, every one must have observed, that some individuals never show any attachment to others; and again, there are persons who are so attached to each other, that if you separate them they are never happy. In a peculiar modification we observe the influence of this feeling among animals, especially among dogs; not only do they become much attached to each other, but they become also attached to man, and they have given many very striking proofs of this feeling. It is more active in some individuals than in others, and it is more active in females, generally speaking, than in males. I fear I have sometimes offended females by comparing them with animals, but I merely mean to say, that as following the manifestations of nature, we must observe that certain feelings, or propensities, are more active in females than in the other sex; and very wisely is it provided that it should be so, as I have before explained.

Is this feeling attached to any organization? We say yes, in the most positive way. Nature has given a part of the brain in order to attach beings to each other, and the situation of it is here, posteriorly, on both sides of Inhabitiveness, just hereabout (placing the hand on that part of the skull). If you find this cerebral part large, you may depend on it that such

individuals are very fond of attaching themselves to beings around them. This feeling induces beings to become attached to persons, as the preceding does to places. I say that this feeling is found in animals; will you then call it a moral feeling? We see it in beings not at all famous for their moral actions. There are certain communities very much attached to each other. We find that criminals form great attachments to each other, and some have killed themselves rather than betray their companions, whilst others do mischief to their friends, and even have killed them. The more you reflect on this feeling, the more you will see that it is of an inferior kind. Let us see examples. I have already said that this feeling is stronger in women than in men, and if we compare this part of the head, which is marked No. 4,* in both sexes, we shall find that it is much more developed in females. (Specimens were then shown; casts taken from the heads of persons



Friendship large.

known to be very fond of each other.) Dogs form great attachment to their masters. Perhaps they may become the property of others, who may treat them even better than their former masters, yet they will run away from them to their first masters; and in dogs this part of the head is much developed. Here is the cast of an individual who murdered his friend—Patch, of your country; look at his head and see whether this part is not very defective. In proportion to the development of this part, you may be always sure that this feeling will be found more or less active; it never fails to be so, as far as I have observed.†

COMBATIVENESS.

Let us now proceed to the consideration of another question. What is the reason why animals fight? Is there a fundamental power in nature to cause some individuals to be very

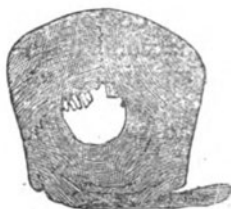
* Adhesiveness or Friendship is numbered 5 in the more modern busts.

† When the organ is large it gives great breadth to the head on each side of Philoprogenitiveness.

pugnacious? In different species of animals, we see that some are very timid and fearful, whilst others like to fight—take a pleasure in fighting. Indeed some animals have derived their names from the manifestation of their pugnacity, as the fighting cock, and many others; we see that they are amused by fighting, and if we let them alone, they will attack each other. In mankind we observe many amused by seeing others fight. What is the cause of this? We find that nature has given a peculiar instinct to certain beings, which provokes them to fight. If we look to nature, we find some species of animals more disposed to fight than others, and some individuals of the same species more disposed to fight than others. What is the cause of this? Bodily strength, say some; but do we not see that some animals attack and fight others larger and stronger than themselves; the dunghill cock has stronger muscles than the fighting cock, yet we find that the latter overcomes the former. You may observe among the dogs in the streets, that little dogs will often attack great dogs, and the great dogs will run away. I will not deny the influence of muscles; I consider the muscles to be very



Combativeness large.



Combativeness small.

important, but they are merely as instruments. There is something else, both in man and in animals, which disposes them to fight. You will see some men who are little qualified for it to all appearance, yet display great courage, and who are every minute ready to fight. You will see little boys attack great ones, and the great ones will run away, or will give up their playthings to them; but let the great boys try to take away any thing from the others, and you will see what they will do. You will always find such boys broad here (immediately behind the top of the ear). Here are the casts of two men of your country, known as men of personal courage—Shenton and Curtis—and you will observe that they are very broad here (pointing to the organ of Combativeness). The broader the head is in this part, the more personal courage are they found to possess. I have here two skulls of the

Chinese, the one of the Tartar tribe, and the other of the genuine Chinese, and the second is narrower than the first. Whenever a tribe fancies to make an invasion into the territory of another tribe, if they have their heads broad here, although they may be less in point of number, you may be sure that they will become the masters. There are facts of that kind recorded in history, showing that considerable nations have been overcome by others less in number, and of less physical force.

Here is the skull of Robert Bruce, and you may observe that it is very broad hereabout.* This is the cast of the skull of an Hindoo. I have seen fifteen or sixteen skulls of Hindoos, and they have all been narrow here. I do not mean to say that all Hindoos are so, but those who have the opportunity of observing, would render great service to phrenology if they were to regard this more particularly. It would be necessary, when persons bring skulls from different nations, to give more details with them, as to the character and the habits of such nations. We know that although the Hindoos are, generally speaking, a very timid race of men, yet there are some tribes among them which possess great personal courage. Hence it would not do to form an estimate of any people by a few skulls, unaccompanied by any description; or say, this is the skull of an Hindoo, or of a Chinese, speaking of a nation when a tribe ought only to be mentioned. It seems that the ancient artists had some knowledge of the office of this part of the brain, for they have given great development of it to the gladiators, as well as the other lower propensities. It is certainly curious that they should have given to such men more brain posteriorly than anteriorly. You will see that those persons who are distinguished for personal courage, are broad in this part of the head, and this is a part of the brain common to man and animals. You have many more shy horses in this country than there are in France; on the other hand, you will see a greater number of vicious horses in Paris than in London, *cæteris paribus*. You will distinguish in the horses in France a greater breadth between the ears than you will in the shy horses of London. The broader the horse's head is hereabout, the more personal courage is he found to possess. If you look at the fighting cocks, and compare them with the dunghill cocks, you will see that the former are much broader in this part of the head. (Three specimens of the heads of the fighting and dunghill, or Malay cocks, were then

* A line continued horizontally from the top of the ear backwards about an inch reaches the centre of Combativeness.

shown.) So then, it is quite certain, that there is a distinct organization for this power. Some animals are not only courageous to defend themselves, but they appear to take a pleasure in their individual combats.

DESTRUCTIVENESS.

I come now to another feeling which has been disputed, and which has done much harm to phrenology, because phrenologists themselves have called it the organ of murder.* But how is murder committed? Let us first ascertain the facts, and then see how we can explain them. In a general way, we must admit that destruction is an impulse founded by nature. Is violent death an institution of the Creator? Is there any such thing as destruction? If we only examine nature in a very slight way, we shall find that there are beings in the air, on the earth, and in the water, that kill each other. There are tigers, and lions, and wolves, and foxes, and all these kill other beings; hence, then, there can be no doubt that in nature violent deaths occur. Some persons have attempted to explain this disposition in certain animals by saying, that tigers are furnished with large claws, lions and wolves with powerful teeth, &c., and that in consequence of their possessing these instruments by nature, they feel inclined to use them. But as to instruments, permit me here to make one general observation: do you think that the employment of instruments can produce a power? No more than circumstances can produce a power. Instruments! the very name points out what they are: they are subservient to other powers. They say man has invented the mechanical arts because he has hands; do you think this can be admitted? Look at an architect who is capable of building even a palace; let his mind be deranged, and see then if he can build a palace, yet his hands remain as before. Without instruments it would be impossible to act, but instruments cannot act of themselves; it would be a contradiction in nature to suppose that the instrument is the power, or that a power is given without an instrument. Give a claw to a sheep, and see if it would kill. Place a monkey in a cold room, by the fire, and let there be a plenty of fuel in the corner of the room; he will sit by the fire until it burns out, and will not put any fuel on it; yet he has the power, he has the instruments for doing so.

We consider the instruments as very important, but the power itself remains entire, and does not depend upon the instruments. We observe among animals, that there are some

* Dr. Gall originally gave the name of murder to this organ.

who kill only to satisfy their hunger, whilst there are others who kill a great deal more than is necessary. The pole-cat, for example, will continue to kill as long as it can reach fowls to kill, while the lion and tiger only kill such as are necessary, and have therefore been called generous animals. We are obliged to confess, then, that some animals kill others in order to live, as the lion, the tiger, the fox. On what does man live? Is there any species, any living being which kills so many others as man does? There are no other beings that destroy so many things as men do, from the oyster to the whale, or elephant. Man is a destructive being in that sense, and even the construction of his body, particularly his teeth and stomach, ranks him more among the omnivorous than the herbivorous animals, and I have stated, therefore, that there is a great propensity in man to kill. But there is a very great diversity in the degree of this feeling. There are some persons who have the greatest aversion to kill; if their existence depended on their destroying animals they would die. There are some who have been brought up all their lives in the kitchen, who can never kill a fowl. We find also other persons who are quite ready for destruction; they kill anything that is required in a minute, and have not the least aversion to do so. I know many facts of this nature, but I shall only show you a few examples in which this feeling, when strong or weak, is shown by the external shape of the head.

I have no other object but to show you that the external parts correspond with the development of the fundamental powers. I do not wish you to adopt phrenology as truth from what I say; I rather wish to invite you to examination. If I speak of an organ of Destructiveness, I speak merely of a particular power, but not of its application; not that a man shall commit murder because the organ of Destructiveness is full. Some individuals take great pleasure in killing animals, and they have kept animals to have the gratification of killing their young ones. A merchant who lived at the Hague, in Holland, paid the butchers to allow him to kill the oxen. Some persons are very fond of seeing public exhibitions in which different animals are set to worry and destroy each other; and some are fond also of seeing public executions of criminals. Among insane persons, in whom the feelings generally act without the least restraint of the intellect, we find some who evince the greatest inclination to kill others. Some, who have a little consciousness remaining, desire that they may be prevented from destroying others.

You must admit these facts. Are they attributable to

internal causes which induce beings to destroy? It is necessary that such an instinct should exist partially for the nourishment of some animals; many beings destroy others on that account. Can we not also observe, that in mankind there are persons who take great delight in frequenting the places where others are killed, and they take great diversion in killing others. We see sometimes this feeling very active even in children. We know that children are very busy; generally they are kept employed; and persons have said that children take pleasure in destroying, merely because they must have something to do. But how does it happen, that although children are so active, they act so differently? Some being well pleased with the destruction of animals and insects, whilst others will avoid doing so. If men be naturally disposed to follow their inclinations, and if education exercises a controlling power over them in some degree, we see the great



Destructiveness large.



Destructiveness small.

advantage of directing the education to overcome these feelings which have shown themselves active. Unfortunately we see men who, in spite of the restraints of education, do follow their natural inclinations; and see if this cerebral part be not much developed. [The part just above the ear, No. 8 in the bust, when large it causes a great swelling of the skull at this point.—ED.]

Let us begin with animals. If we observe animals in general, we shall find that all herbivorous animals have the brain small hereabout, above and behind the ear. But if you examine the heads of carnivorous animals, as the wolf—and this is the head of a wolf (showing one)—you will find that the greatest quantity of brain is situated just above the ear. If a naturalist were to see the heads of each of these species of animals, he would know from the shape of the head whether the animal belonged to the herbivorous or carnivorous kind. You see that the head of the wolf is much broader than the head of the roe. The chamois has this part narrow, whilst in the fox it is very broad. (Skulls of each of these animals

were shown.) Compare, again, the cat with the hare; the rabbit with the pole-cat, which you know is an animal fond of destruction. Again, look at the weasel and the quincajou; go through all nature, and you will find that the more brain hereabout, the more destructive will the animal be found. Look at men: Dr. Gall has observed several murderers, and he has found that their brains are very large hereabout; that is all, he has noticed the fact. If you find murderers who feel a pleasure in destroying, instead of those who do so to defend themselves or to escape detection, you will find that such persons have great development of brain in this part, above the ear. Here are casts of Stoffel and Keppel, men of this country. The one engaged his companion not to destroy the person they intended to rob; but the other would destroy, and would not spare the life of the individual, and you see that in one this cerebral part is much larger than in the other.

I have seen many individuals who have shown great propensities to be, and who have actually been, dreadfully destructive. This is the cast I took of a woman's head in France. Her head is very large in this part; her name is Madalein Albert; she killed several relations. This is the cast of Bellingham who shot the minister, Mr. Perceval; he imagined that he had received great injustice, and he was determined to be revenged. Now, granting him to be a fool—as is believed he was—it is, however, singular, that this individual part should be so much enlarged, and was so very active. Some persons do good to others in their insanity; some pray for every one, and certain feelings are more active in proportion as certain parts of the brain are more developed. I have examined so many criminals that I can speak positively of the organ, and unfortunately the organization is too large hereabout. The organs of Courage and Destructiveness are very large in the head of Robert Bruce, and we know that he was a very bold and courageous man. There are nations who are inferior to others in point of the higher feelings, who, nevertheless, have this organ largely developed, as the Caribs, and it is ascertained that they are very ferocious and savage. If we compare the skulls of the Hindoos with the skulls of Caribs, we shall see the greatest difference in the development of this part. The head of the Hindoo is elongated and narrow on the sides, whilst the Carib's head is broad on the side; the latter nation has shown a much greater disposition to destroy.

Having multiplied my observations on animals and on man, I am quite sure that the inclination or disposition to destroy depends upon a particular cerebral part. Now, if you reflect

upon the peculiar modifying powers—and the necessity of doing so you will admit—you must have observed that they exercise a very great influence in determining the character. You will see that I do not speak of an organ of murder; I do not say that this power is given to destroy other men, but to kill animals, which power or feeling is necessary. But we observe, unfortunately, that this feeling, notwithstanding the influence of education and the cultivation of the higher faculties, does break out and overpower them. I do not say that because any man is broad here, he will commit murder; far from it, but I wish to repeat this, that the feeling or inclination to destroy animals is found to be more active in individuals who are broad in this part of the head. This is observation, it is a fact, and that is what phrenology must be founded upon. Some beings take different modes of destroying than others: they like to amuse themselves with their prey first, and then kill; whilst other animals dart upon their prey at once, and destroy it by a *coup de main*; such animals will be always found broad here.

We take the powers in a general way, and by no means speak of their applications. We can only speak of the tendency which certain powers give to particular actions, as they are observed in beings in which the feelings do not control each other, in animals destitute of intellect to exercise an influence upon them. But in man we must remember that there is a combination of higher powers happily blended with the lower propensities, and this combination exercises a mutual influence on each class. I have endeavoured already to explain this when speaking of the Love of Offspring, of Attachment to Places, and of Combativeness, which must also be taken into consideration when speaking of the feeling of Destructiveness; and by reminding you of the combination of the powers, and their modifying effects, I shall close for this lecture.

PROFESSOR FLOWER, the well-known anatomist, has published some further results of his researches with reference to the human skull. He states that the largest normal skull he has ever measured was as much as 2,075 cubic centimeters; the smallest, 960 cubic centimeters, this belonging to one of those peculiar people in the centre of Ceylon who are now nearly extinct. The largest average capacity of any human head he has measured is that of a race of long flat-headed people on the west coast of Africa. The Laplanders and Esquimaux, though a very small people, have very large skulls, the latter giving an average measurement of 1,546. The English skull, of the lower grades, shows 1,542; the Japanese, 1,486; Chinese, 1,424; modern Italian, 1,475; ancient Egyptian, 1,464; Hindoos, 1,306.

THE FACE AS INDICATIVE OF CHARACTER.

THE EYES AND EYEBROWS.

On no feature of the face does the expression of character so much depend as upon the eye, and together with it, the eyebrows. The eye, more than any other feature, indicates the quality, strength, and grasp of the soul or mind as a whole. Other features may indicate particular properties or faculties of the mind, but it depends on the quality of that essential or quintessential something which we call mind, spirit, or soul, with how much strength and intensity the individual powers or faculties act; and that *quality* can be detected by the eye alone. How often do we find the lineaments of the countenance indicate qualities that are belied by the eye? It may be that the forehead bespeaks intelligence, the mouth refinement, or the nose keen perceptions, but the promise is not kept by the eye. The "window of the soul" is dull; there is no light within; or the light is but a dim glimmer, indicating neither warmth nor interior illumination. The first thing to take into account in judging of the eye is its brightness, or illumination. A dull, dead eye betokens an analogous character; a bright, sparkling eye a corresponding state of mind. There are, however, different kinds and degrees of brightness or illumination in the eye, according as the emotions, the moral sentiments, or the intellect predominate. There is the large luminous eye of genius, and the hot fiery eye of passion; the cold glittering eye of intellect, and the soft melting eye of tenderness and sympathy. All have a certain amount of brightness, of effulgence; but let no one suppose that the light means the same thing in each case.

The eye tells as much to the one who knows how to read it as the whole of the face—I was going to say, as the whole phrenological chart. To one who has paid attention to its alphabet, the "language of the eye" is full of revelations. Every one should study the grammar thereof; for often when everything else deceives, the eye tells the truth. "When the eyes say one thing and the tongue another," says Emerson, "the practical man relies on the language of the first." How many inclinations that are dissembled by the lips are confessed by the eyes! How often a hectoring attitude or a mouth full of threatening words is betrayed by a quailing eye! That restless eye belies the proud boast of the tongue. That aggressive, ferocious eye is a flag of warning, before which the turtle-dove voice should not lull us into security.

"Each man carries in his eye the exact indication of his rank in the immense scale of men." He may try to dissemble his rank, but before one who is learned in the "language" it is vain to attempt to carry on the deception long. There are some who have a wonderful power of veiling the expression of the eye, but they cannot always be on their guard; the hidden lights and smouldering flames will flash out at times, revealing the secret of the citadel, whether there be strength or weakness within, genius or imbecility. The reason why this man is obeyed and that one is not, is because the one has the eye that commands obedience and the other has not. It is not the eye itself of course that does this, but the power behind it—the trained will, the sense of power, the intrepid mind, which gleam through the eye, and in rare instances can charm down insanity in man or ferocity in beasts.

With reference to colour, nothing, perhaps, very definite can be said. By the poets each colour of eye has been extolled in turn—the black, the blue, the grey, and the brown. Broadly speaking, the dark eye is southern, the light eye northern. So, the dark eye may be taken generally to indicate passion and intensity; the light, more calmness, delicacy, and endurance. Dark eyes are tropical, volcanic. They may be dull and sluggish at times, but their sluggishness hides latent fires. They generally accompany a dark complexion, great toughness of constitution, strong passions, and a keen but not a subtile intellect. Light eyes, on the other hand, are temperate, often cold and phlegmatic. They may glow with love and genial warmth, but they do not often flame into a consuming fire, as the dark eye. The blue or grey eye oftener accompanies a cold nature than a hazel or brown eye. It is not unfrequently as difficult to reach the bewitching loveliness of an apparently soft blue eye as to touch the remoter blue of the heavens. Possibly some of my readers may have had some experience of this before now; if so, let them try brown.

Blue eyes generally accompany a fair complexion and light hair, and in such a combination there is generally amiability of disposition, refinement, great susceptibility, together with much mental activity and versatility. When the complexion is dark and the eyes light, as is sometimes the case, there is a combination of strength with delicacy. For uniformity and strength, a medium between the two extremes seems to be the best.*

One might write a good deal more about the colour of the

* For further hints on this subject, see the chapter on the Temperaments.

eyes, for perhaps about nothing relating to the face has so much been written, as about the colour of the eyes ; but for the most part it is mere poetry, as, for instance, when Mrs. Browning writes—

Thy brown eyes have a look like birds
Flying straightway to the light.

The truth is that the strength and glamour of the eye lie in the forces behind it, and its colour has only a temperamental value.

The first thing that strikes us on looking at the eye is its size, that is, if we are not blinded by its brightness ; for sometimes there is such a light in the eye of a person we meet, that we see nothing but that. Its colour and its size are unnoticed. The size of the eye indicates Activity, by which is meant, not a faculty, but an attribute of the mind : something appertaining to all the faculties. Animals with the largest eyes are generally the fleetest or most active. So with human beings : those with large eyes are mentally the most active. It does not follow that they are necessarily the deepest or keenest. Sometimes a small eye goes along with depth and keenness, but never with so much of the spiritual or ethereal. We often hear of "large spiritual eyes," but no one ever speaks of "small spiritual eyes." Although small eyes are often described as "bright and piercing," and as "sparkling," they do not betoken a high order of mentality. Small eyes more frequently than otherwise accompany a phlegmatic temperament, which is generally inactive and sluggish ; and though they sometimes appear to express liveliness, the mental operations in such cases are slow, and there is neither quickness of apprehension nor of speech. Persons, on the contrary, with large eyes, have very lively emotions, think quickly, and speak fast, unless there be a predominance of the phlegmatic temperament.

Redfield says, the latter are quick and spontaneous in their feelings, and in the expression of them, and are therefore simple, like the Scotch, the Swiss, and all who inhabit mountainous regions. The former are slow and calculating, and therefore wiful, like the gipsies, a people who generally inhabit level countries. There is a connexion between activity and the ascending and descending of acclivities, a fact which we evince in running up and down stairs, and which an active horse exhibits when he comes to a hill ; and hence the Scotch Highlanders, as well as the sheep, the goat, the chamois, &c., have large eyes and very great activity. The rabbit, the squirrel, the cat, the mouse, the gazelle, are in-

stances of the sign of activity in a very superior degree ; while the hog, the rhinoceros, the elephant, and the sloth are instances of small eyes and very little activity. Insects which are so exceedingly sprightly have very large eyes, occupying full half of the head ; while large and ponderous animals have comparatively small eyes, indicating their adaptation to the smaller species of the animal creation. It should be observed that sometimes a small opening of the eyelids causes a large eye to appear a small one, though this is not usually the case.

In speaking here of the largeness or smallness of the eye, the actual *orb.* of the eye is meant. The projection or sinking of the eye has more to do with expression, or language. The phrenological organ of Language, which is situate in the cerebral convolutions on the lower side of the anterior lobe of the brain, at the posterior part of the supra-orbital plate, pushes the eye more or less forward, downward, or outward, according to the size of the convolution, thus giving prominence or anterior projection if the organ be large (see Figs. 61 and 62). Prominence or fulness of the eye, therefore, betokens a good command of language, and persons with prominent eyes will be found to have a great command of words, and to be ready speakers and writers. It does not follow that their words contain much sense ; sometimes it is unfortunately the contrary. Mr. Fowler is of opinion that if there is a projection of the eye outwards, it is a sign of great power of verbal expression ; whereas when the projection is interior, or towards the inner



Fig. 61. angle of the eye, it is a mark of verbal memory.

It will be found that this language sign is invariably large in writers, speakers, and musicians. Without it, or rather without the power which causes it, the musician fails to give adequate expression to his theme. It is generally found well represented in children, and what power of expression they have ! Even before they can lisp they are full of expressive actions and gestures, while, after they begin to talk, they are perfect orators.



Fig. 62.

I need to die,
 I could not live—couldst thou ?—to feel a truth
 Cry loudly in the heart and strangle it ;
 Were this the end, no other life beyond,
 Better to perish thus, our dust unwarn'd,
 (So it might nourish still a living flower,)
 Rather than breathe such breath as hourly kills
 The truth that blooms within. *E. B. Browning.*

CENTRIPETAL AND CENTRIFUGAL MOTIONS IN ANIMALS.

In a memoir published in the *Revue Scientifique* last June, on "Writing Regarded from a Physiological Point of View," the author, M. Carl Vogt, after a lengthy discussion of centripetal writing (from right to left) and centrifugal (from left to right), drew the conclusion that the direction of the lines does not depend upon a physiological necessity, but only upon external conditions. Dr. G. Delaunay, who has for a long time been making researches on the same subject, has an article in a recent number of the same journal in which he endeavours to prove, on the contrary, that writing, as well as all motions and gestures in general, are dependent upon a physiological, and consequently an anatomical necessity.

The motions of quadrupeds can only take place horizontally or laterally; yet there are a few that perform centripetal movements—the cat, for example, which strikes with its paw by bringing the latter towards the axis of the body. Monkeys make centripetal motions mostly; but these animals hold a place between quadrupeds and man. Man alone is capable of making centrifugal motions. This physiological evolution of motions, which are successively vertical, then lateral and centripetal, and then centrifugal in measure as we proceed from quadrupeds to the human species, is only the result of an anatomical evolution. According to Dr. Delaunay's researches, motions are rather centripetal than centrifugal in primitive or inferior races, and rather centrifugal than centripetal, in superior races. A centripetal motion in a primitive race becomes centrifugal in measure as that race "evolutes." Sanskrit, Persian, and Greek were written from right to left before being written in the opposite direction. So our chronometers were wound up from right to left before they began to be wound in the other direction. The English, however, are behind the age in this respect, since in the screws manufactured by them the threads still run from right to left, and most of their watches, like those of our ancestors, are wound from right to left. On the other hand, the people of the United States, who are in great part transformed English, and who without doubt are more advanced in evolution than those of Europe, use watches only which are wound from left to right, and repudiate the old system still in use in England. Writing was centripetal among the ancient inferior races, and is still so among those of modern times: Semitic, Phenician, Hebrew, Assyrian, Arabic, Chinese, Japanese, Negro, &c.

Among the superior races not only is writing executed from left to right, but plans, sketches, shading, &c., are begun in the same manner. A circle is always drawn centrifugally, that is, in the direction of the hands of a watch. In our designs and on our monuments the symmetrical ornaments are, starting from the median line, centrifugal. To consider other motions: we turn a door knob, door key, screw, stop-cock, corkscrew, as well as tools for drilling, cranks of mills, wheels, &c., from left to right. In all trades and professions work is performed in a certain direction, which is generally centrifugal. To sum up, centrifugal motions, characterizing the superior races, are a sign of superiority marking the last term of evolution. As for sex, centripetal motions characterise women, while centrifugal motions are characteristic of man. A woman, for example, strikes with her palm, while a man gives a blow with the back of the hand. Every article of woman's clothing, from the chemise to the cloak, buttons from right to left, while man's garments button from left to right. When a woman puts on a man's coat she buttons it with the left hand, centripetally, doubtless being unable to button with her right centrifugally.

As for age, the motions of children are centripetal rather than centrifugal, therein resembling women.

From a psychological point of view centripetal gestures mark primitive, egoistic, retrograde ideas. On the contrary, centrifugal gestures express ideas and passions which are generous, altruistic, and expansive. From a psychological, as well as from other points of view then, centripetal gestures characterise inferiority, and centrifugal, superiority. As a result of his studies the author draws the conclusion that the centrifugal motions of abduction and of supination prevail in organisms most advanced in evolution, as the superior human races, men, adults, intelligent beings, &c.; while, on the contrary, the centripetal motions of adduction and pronation predominate in individuals less advanced in evolution, as the inferior human races, women, children, people of little intelligence, monkeys, quadrupeds, &c.

Finally, the physiological evolution of motions, which is a consequence of the anatomical evolution of the limbs, proceeds from the centripetal to the centrifugal. Comparative anatomy and physiology, then, explain why not only writing, but also other motions, are at first centripetal during the first phases of organic development, while the adductor muscles predominate over the abductor, and became centrifugal by very reason of the progresses of evolution which bring about the predominance of the abductors over the adductors.

WHEN TO EAT.

A series of very interesting articles on diet are appearing in the American *Popular Science Monthly*, in which some strong arguments are adduced against many of the very generally received opinions in regard to this important subject by even the most advanced of the medical profession. From the last issue we clip the following :—

“Never eat till you have time to digest, for digestion requires leisure ; we cannot assimilate our food while the functional energy of our system is engrossed by other occupations. After a hearty feed, animals retire to a quiet hiding place, and the ‘after-dinner laziness,’ the plea of our system for rest, should admonish us to imitate their example. The idea that exercise after dinner promotes digestion is a mischievous fallacy. Jules Virey settled that question by a cruel but conclusive experiment.

“He selected two curs of the same size, age, and general physique, made them keep a fast-day, and treated them the next morning to a square meal of potato chips and cubes of fat mutton, but as soon as one of them had eaten his fill, he made the other stop too, to make sure that they had both consumed the same quantity. Dog No. 1 was then confined in a comfortable kennel, while No. 2 had to run after the doctor’s coach, not a breathless rate of speed, but a fair, brisk trot, for two hours and a half. As soon as they got home, the coach-dog and his comrade were slain and dissected ; the kennel dog had completely digested his meal, while the chips and cubes in the coach dog’s stomach had not changed their form at all ; the process of assimilation had not even begun ! Railroad labourers, who bolt their dinner during a short interval of hard work, might as well pass their recess in a hammock ; instead of strengthening them, their dinner will only oppress them, till it is digested together with their supper, in the cool of the evening.

“In a manner essentially similar mental activity tends to hinder the digestive process for a considerable time ; and I believe, more especially, the digestion of the very substances that are often selected as brain food *par excellence*. Even after a fashionable dinner of six or seven courses (curses Dr. Abernethy used to call them), two hours of absolute rest will set our wits at work again ; but if that time be spent behind a double-entry ledger, a feeling of lassitude, often combined with an almost resistless somnolence, will advise the brain-

worker that his vital energy is needed for other purposes. 'I would eat with more comfort if it wasn't for the consciousness of having to hurry back to my drudgery,' I heard a poor class-teacher say, and the same consciousness embitters the noonday meal of millions of school children and over-worked clerks.

The writer holds that the principal meal should be the last, and should be taken from four to five o'clock, p.m., after the day's work is done. We might then have "pleasant conversation, and four blessed hours of digestion" before retiring for the night. "It is an important rule that we should digest our food thoroughly before we replenish the stomach." He thinks that two meals a day are better than three. We can accustom ourselves to swallow three or even six, but we cannot compel nature to digest them between meals taken so frequently. The Greeks and Romans, during their prime as nations, contented themselves with one meal a day. The Gonaque Hottentots are in no way incommoded by a five days' fast, and live to an old age on an average of four meals a week. Two meals, or one full one and two half ones, should be enough for any man—the last at night. Such a custom will best enable nature to do her work most perfectly. Eating, like everything else, depends on training—habit,—and in other respects is the human system so plastic as to the influence of habit.

WHAT SHALL I BE ?

Among the things which Lord Macaulay would have assumed as a matter of course that "every schoolboy" knows, is the fact of the assertion having often been made, and generally accepted without question, that a boy's school is not only a world in itself, but is a miniature copy of the greater world outside. There are few boys, I should think, who have not heard this said, and who, when they pass from the smaller world into the greater, will not recognise the truth of the comparison. A school is a collection of boys of varying natures, dispositions, and ability, just as the world outside is made up of individuals who differ in the same way. In the world of school, too, we find the strong and the clever making their way to the front, while their companions, mentally and physically less able than they, are pushed aside, and forced to occupy more obscure positions. This is merely a reproduction, on a smaller scale, of the great struggle of life, in which many

of my readers are, perhaps, just about to take their part. Boys may say that, so far, perhaps, the comparison is just and true enough, but that their world and the world in which their fathers and brothers, and grown-up people in general, live and move and have their being are, after all, widely different, inasmuch as schoolboys are not free agents, while older people are. "At school," they say, "we are bound down by all kinds of rules and regulations; we have to bow to the will of our masters, and even in the time which is called our own we know that we are sharply looked after, and that any conduct at variance with the rules laid down by the headmaster will be visited with swift and sure punishment." Nothing is more common than for boys to take this view of school life, and to look forward with longing to the time when they shall be grown up, and can, as they put it, "do as they like."

Nothing, however, can be more false than this distinction between the world of school and the real world. Schoolboys are, of course, bound down by certain restrictions, but they will find themselves equally bound down in after life. It may even be said that men have to bow to stricter rules—the rules of the law and the rules of public opinion. The conduct of schoolboys, of course, is guided to a great extent by the public opinion of their schools, and any rebellion against that public opinion brings its punishment with it. But, happily for boys, they are irresponsible agents, and any youthful follies of which they—even the best of them—will at times be guilty, are not visited with so severe a punishment from the authorities of their world as the same conduct would entail upon them if indulged in in after life. In most particulars, therefore, it is found that the world of school is really but a miniature reproduction of the greater world outside. Some flaws in the comparison might, of course, be found; but there is only one important point of difference, but that one point is very important, indeed, and should give thoughtful boys cause for the most serious consideration.

The difference of which I speak is this. In the great world, we may say, roughly speaking, that all men are engaged in some kind of work; that all are devoting their energies to some profession, business, or trade; and that in the vast majority of instances the work to which they have set their hands will be the work of their lives. Now, few of my readers, I am sure, will disagree with me when I assert, that the aim and end of every honestly-lived life is the accomplishment of the greatest possible amount of sterling good work, the consequent enjoyment of solid and continuous happiness (for good work, done with a man's whole heart and strength, cannot fail

to bring with it the truest happiness), and the making of other people happy also. In the world of school, boys have their work to do, and the more conscientiously they do it, the happier they will be. But this work of theirs is only preparatory. Their whole school life is but a preparation for the sterner life they are afterwards to lead. This fact is so obvious that it seems entirely unnecessary to state it. But I set it down here with a special purpose. I am not contented that my readers should *know* the fact. I want to impress upon them the necessity of keeping it always in mind. Boys are too apt to let their ideas be bounded by the school walls. They are inclined to live only in the present, as though their schooldays were to last for ever. It is true that boys do well to enter with keenness and energy into the tasks and pastimes of their school days, and to take "Thorough" for their motto whether in play-ground or in class-room. But they need not forget, nevertheless, that the life they are leading can only endure for a time.

They will have to decide one day or another, or help others to decide for them, in what direction they are to turn their faces when they seriously set out on the journey of life, to what calling they are to devote their energies ; in short, they will have to decide *what they will be*. This question, "What shall I be ?" perhaps the most momentous in the whole of any man's career, is the one which, of all others, should not be answered in a hurry, at random, or without long and serious reflection. The answer to this question is often as difficult as it is imperative and important. A young man who, on leaving school, finds himself face-to-face with the world, and under the necessity of making a swift decision as to what part he is to play in the drama of life, not unnaturally finds himself bewildered by the number and variety of parts he has to choose from. If he has never given serious thought to the subject before, he finds it hard indeed to come to a decision. He has never, so to speak, "taken stock" of himself, with a view to ascertaining for what particular career his tastes, inclinations, and abilities most fit him. But the decision has to be arrived at—and too often is arrived at merely hap-hazard—with a chance of a life being wasted in an uncongenial sphere, or the decision of early manhood having to be reversed in after years. It is for this reason, therefore, that I wish to impress upon my readers the necessity of remembering that their boyhood is fleeting, and that they will soon have to ask themselves, "What shall I be ?" But I want to point out the advisability of their asking themselves that question now, while they have plenty of time to think over the matter calmly,

and to try to find out for what career they are really most fitted. Though no definite decision may be arrived at—and no definite decision *should* be arrived at without serious consultation with parents or grown-up friends—boys can scarcely fail to derive some benefit from trying to find some answer to the question, "What shall I be?"—*The Boys' Newspaper*.

N I G H T.

Why should I be heavy and pensive and sad
 When the night doth come,
 And the wearied limbs of the day a reclad
 In vestments of sable, its voices as dumb
 As the husk which some heaven-spiced spirit hath had,
 Now cumb'ring the tomb?

Oh, night, thou art beautiful ! well do I love
 Thy canopy dim,
 Like the tent of a sheik of the desert inwove
 With patines of gold, whose glorious glim
 Tells me, I wot not, of something above
 This earth-life so grim.

I love thee, oh, night ! and yet thou dost make
 Such feelings arise,
 As cause my poor pinion-bound spirit to ache,
 With a dread that is nameless ; meseems thy wild eyes,
 So far are they off, would us mortals forsake,
 Spite of tears and sighs.

I love less the day : it is glaring and loud,
 And filleth my heart
 With a sense of the human ; but thou dost enshroud
 The mirth of the carnival light with a swart,
 Sad mantle, that humbles the breast of the proud
 And mocketh man's art.

Oh, stay with me, night ! thou solemn, divine !
 Until from my soul,
 These low earthly sorrows that make me repine
 Before thy deep measures of music do roll,
 Like the rock of old Sysiphus down the incline,
 To their own dismal goal. N.

AUNT EMILY'S DREAM.

BY S. A. JAMES.

CHAPTER I.

Papa, mamma, and myself were sitting at breakfast one morning in early spring. Our house was in one of the busiest streets of a manufacturing town, and our breakfast room overlooked the street, so that while at our morning meal, we could see the people hurrying to business, and the crowded omnibuses rolling heavily in the same direction, or returning empty for a fresh load.

"Papa, there is the postman ; shall I go for the letters ?" I exclaimed.

"Yes, Nelly," said papa ; and off I went.

The postman handed me but one letter. A glance showed me that it was from Greenthwaite, and the neat, lady-like handwriting I recognised immediately as that of my aunt Emily.

Greenthwaite was a lovely village situated among the hills in a neighbouring county, and there aunt Emily lived with my grand-parents. My grandpapa cultivated a large farm ; and papa and aunt Emily were his only children. Papa, who was much older than his sister, had married and settled in the town, and I was his only child, at the time of my story—fifteen years of age.

"Oh, papa !" I cried, on re-entering the breakfast room, "it is a letter from Greenthwaite, from aunt Emily."

Papa opened the letter, and read it. Then, handing it to mamma, he said : "You are invited to spend a few weeks at your grandpapa's, Nelly ; are you inclined to accept the invitation ?"

"Oh yes, papa, if you will let me go," I exclaimed, jumping up from my seat with delight.

"What do you say, mamma ?" he asked, turning to mamma. "Can we spare her for a while !"

"We must not be selfish," said mamma ; "Nelly is far from strong, and the change will do her good, I am sure."

And so it was settled that I was to go to Greenthwaite the next day but one.

CHAPTER II.

The morning of my departure arrived, and I was soon being whirled away from the town into the green country. First came the fields with the cattle grazing and the young corn growing,

and the white farm-houses here and there among the trees ; then came the hills, the scene changing every minute from valley to valley. We passed station after station, until at one I heard : "Change here for Greenthwaite !" I jumped out, and was soon in another train. The rest of my journey did not take long. The train soon stopped, and there at the carriage door stood a lady of middle height, with a sweet oval face, and light golden hair, and by her side was a large Newfoundland dog. It was my aunt Emily, with her favourite Rover.

"Welcome to Greenthwaite, Nelly dear !" said my aunt, as she embraced me ; and Rover came close to me, and put up his face, as if he, too, wished to express a welcome.

Aunt Emily was about twenty-five years old, but she would not have looked so old as that, had it not been for some lines upon her face, that sometimes gave it a touch of sadness. Whatever sadness, however, she might feel, she seldom showed it, but was always cheerful and happy, making every one around her cheerful and happy too.

"The pony-trap is waiting outside," said aunt Emily, after our greeting was over, "and your grandpapa and grandmamma are anxious to welcome you, so let us be off ;" and presently we were driving through the green lanes, between hedgerows covered with hawthorn blossom, that filled the air with fragrance, while Rover trotted along the footpath, looking up from time to time, as if to assure himself that we were safe.

On we went, chatting about papa and mamma, about the places we passed, and the pleasures in store for me, until the pony stood before a white gate, near which I saw the smiling faces of grandpapa and grandmamma, and one or two domestics ; and, I am sure, no visitor ever met with a more loving welcome than I.

The rest of the day was spent in running about the gardens and orchards with my aunt, seeing everything that was to be seen, and making acquaintance with everything that was to be made acquaintance with.

I awoke early the next morning, and found the sun shining through my curtains ; and I heard the swallows twittering outside. I sprang up and ran to the window, and there I saw my aunt in the garden attending to her flowers. She looked up and smiled a greeting, and beckoned me to go down to her. My toilet was soon completed, and I ran down the old-fashioned stairs to join her.

Aunt Emily had a hobby : she was a botanist. The old chronicler says that the Conqueror loved the wild deer as if he had been their father ; well, my aunt loved the wild flowers as

if they had been her children. She sought them everywhere. She knew the spots where the primroses first appeared, where the violets bloomed the best, and where the wild hyacinths "most did congregate." She could find the ponds where the golden iris raised its sunny head ; she knew where the marsh-marigold grew in greatest profusion, where the honey-suckle trailed most luxuriantly, and where the fox-glove graced the hedgerows. And her greatest delight was to pay a visit, one day to this spot, another day to that, to see how her favourites thrived, and to bring away nosegays of them to adorn her rooms. The afternoon or the evening was the time generally devoted to these excursions, when her domestic duties were finished. Rover always accompanied her, and, of course, I also was now her constant companion ; and she taught me to love the flowers as she loved them herself, and instructed me in many of their virtues.

CHAPTER III.

One day we went to visit a lovely glen, about a mile-and-a-half distant. It was a charming spot. The hills on each side were covered with woods, and at the bottom of the glen a stream flowed gurgling along. A lane passed along one side of the glen, about half-way up the slope, and from the lane to the brook was a very steep incline. At the bottom of this, on both sides of the stream, the ground was covered with the beautiful triple leaves and delicate snow-white flowers of the wood-sorrel. We climbed down the bank to get at them, and when we reached the bottom, we sat down upon the roots of a large oak tree to rest.

I had noticed that my aunt, who was usually so cheerful, had been, during our walk, and, indeed, all the day, rather quieter than was her wont ; but I was now quite surprised when, after we had been sitting a few moments, she burst into tears.

"Oh, auntie !" I exclaimed, "what is the matter with you ?" and I threw my arms round her neck. My aunt returned my embrace, and then, holding me to her bosom, wept long and silently.

I kissed her, and begged her to tell me the cause of her grief ; and Rover seemed as distressed as myself. At last, when she had recovered somewhat, my aunt told me, with many sobs and tears, the story of her lost love.

"It is just four years to-day, Nelly," she began, "since I first saw him, and it was in this very spot. I had come to

visit my pet flowers; and as I was clambering down the bank, I do not know how it was, but my foot slipped, and I fell for some distance before I was able to recover myself; and then, when I attempted to rise, I found that I had hurt my ankle, and that I could not walk. You see that this is a very lonely spot, and that few people come this way. Well, it was so then. I remained here a considerable time, and not a soul came near."

"Oh, auntie!" I cried, "were you not very much frightened?"

"No, Nelly," my aunt continued, "I was not frightened. I knew I should soon be missed at home, and that your grandpapa would easily find me, for they knew where I had come. But my ankle was much swollen, and I dreaded having to wait very long. At last, after about an hour, I heard something moving rapidly among the bushes; and presently a large Newfoundland dog stood before me."

"How had he found you out? Did you know him?" I asked.

"No," auntie replied, "I had not seen the dog before; but I have known him very well since," she said, and turned to Rover, and caressed him.

"Was it Rover, then?" I exclaimed.

"Yes, Nelly, it was Rover; but as I have said, I had never seen him before. When he saw me, he stood and looked so earnestly at me—just as he is looking now—as if he wondered why I should be there. Presently a voice called him: 'Rover! Rover!'"

While my aunt was telling me this, Rover looked in her face and listened, just as if he understood everything she said, and were quite interested in her story.

"And did he leave you, then?" I asked.

"He turned," auntie continued, "and went a few steps, and then came back again, and looked at me, as though asking if he could help me. I patted him and said, 'Good Rover!' and he continued to look first at me, and then in the direction of the lane above, as if uncertain whether to go or stay. Presently the voice called again: 'Rover! Rover!' and then he bounded up the bank. I thought I was abandoned once more, when down came Rover again, followed by a gentleman, also a stranger to me.

"When the gentleman saw me, he stood, and apologised for disturbing me. 'But Rover acted so strangely,' he said, 'and seemed so anxious that I should come down, that I determined to follow him.'

"I then explained to him my accident. He at once offered his assistance, and I directed him to the farm. He hurried

off immediately, bidding Rover stay with me until his return. Rover seemed quite contented to obey, and lay down by my side, and looked in my face, as if he would say he perfectly understood the situation, and that I was quite safe under his protection. And you did mean that, did you not, Rover?" said auntie, stroking him fondly; and Rover's eyes and tail said "yes," as plainly as *yes* can be said without speech.

"It was not more than half an hour before the stranger returned with papa and the trap," aunt Emily continued, "but it had seemed to me more than an hour. Time drags along very slowly, Nelly, when one is waiting; but when one is in pain, the waiting is much more wearisome still: and my ankle was very painful. It had swollen very much. I had managed to remove my boot by means of a pair of scissors I carried in my pocket, and I had slit my stocking. I nearly fainted in doing so, but that had relieved me considerably."

"It was very thoughtful of the gentleman to leave Rover with you," I said, "for you must have felt much less lonely with even his company."

"Yes, indeed, Nelly," auntie replied; "Mr. Riding—for I soon learned that that was his name—both then and afterwards showed that he possessed, in a very high degree, that most necessary qualification of a gentleman: thoughtfulness for others. On our way home he introduced himself as a friend of the Vicar's, with whom he was spending a few weeks, before leaving England upon a voyage to South Africa."

"But how did you get up this steep bank, auntie? you have forgotten to tell me that."

"Papa and Mr. Riding carried me up. It was a very difficult task, for I was quite helpless; but they succeeded at last, and placed me as comfortably as they could in the trap. On our arrival at the farm, Mr. Riding went in the trap to the village for the surgeon, whom he brought in a very short time. He then left us, but called again in the evening with the Vicar, by whom he was formally introduced to us."

CHAPTER IV.

"From that day," continued aunt Emily, "Mr. Riding, or—as we soon learned to call him—George, was a constant visitor. I was kept a prisoner by my ankle for about a fortnight. George soon learned my fondness for flowers, and almost daily brought me a bouquet of my pets, which he had gathered for me. It was he, Nelly, who taught me nearly all I know about flowers; for though I was so fond of them, I, till then, knew little else about them than their names."

"It was a strange coincidence, auntie, that you should both have just the same tastes, was it not?"

"Yes, Nelly; but George had been a scientific student of botany, and he beguiled many weary hours by telling me what he knew of the flowers he brought me. He had travelled a great deal, and he described to me the beautiful flowers he had seen in other lands. When I grew sufficiently strong, he sometimes took me out for a drive; and when I could walk a little, he was with me to help me. I had no brother or sister with me, Nelly, to assist me, and so it came quite naturally about that he should take their place; and so, by the time my ankle was strong again, George Riding was my affianced husband."

Here my auntie paused, quite overcome by her feelings, and the tears came trickling down her cheeks.

"He soon had to leave us, however," she presently continued, recovering herself; "for his time of absence from duty had expired; but it was arranged that that voyage should be his last, and that on his return we should be married."

"And has he never come back, auntie?" I asked.

"No, Nelly; he left us expecting to return in about eighteen months. We promised one another to keep up a constant correspondence; but one letter, dated from Madeira, was all I ever received from him."

"Was the ship lost, then, or did he die on the voyage?" I asked.

"The ship, after leaving Madeira, was never more heard of, Nelly."

"What a dreadful thing!" I exclaimed. "Oh, auntie! I do not wonder at your crying so. I wonder how you can always be so cheerful as you are."

"I have not yet given up the hope of seeing him again, Nelly," she replied. Aunt Emily had now to a considerable extent recovered her spirits, as often happens when we unburthen our hearts of their griefs to a sympathising friend.

"It is four years since he left us now," she continued; but many people have returned to their friends after being missed for a longer time than that. Almost everybody else has ceased to hope, I can see; but—I hardly know why—something seems to assure me that I shall see George again."

"I *do* wish you may, auntie;" I said. "Would you not be happy if he were to return! That would make up for all your long, sad waiting."

"It would indeed, Nelly. But I am afraid to tell you what made me come here to-day," she continued, "for fear you should think me superstitious and foolish."

"You said it was just four years to-day since you first met him : was not that your reason for coming here ?"

"Yes, Nelly, partly ; but strangely enough, I dreamt of him last night. I dreamt that he had returned, and that I met him. I seemed to be returning from this very spot, where I had first seen him ; and, just as I was passing the elm-tree that stands where the lane bends to the right, he stood before me. I had a bouquet of wood-sorrel in my hand."

"What a strange dream, auntie !" I exclaimed.

"Yes, Nelly ; I have never been so superstitious as to believe in dreams, but I could not get this one out of my mind. And besides that, ever since I awoke, I felt as if I must come here to-day. I kept telling myself all the morning that it was a foolish notion, and made up my mind a hundred times not to come ; but I could not resist the impulse, and I came."

"That is stranger than your dream, auntie," I said. "But I have read of dreams coming true ; perhaps yours may also."

CHAPTER V.

While my aunt had been telling me her story, the time had passed on, and it was now rather late. We rose to go. Aunt Emily's face was pale, and she was very quiet ; and I could see that she was still feeling considerable emotion.

"Shall we not gather some flowers before we go ?" I asked ; seeing she was preparing to ascend the bank.

She quietly assented ; so we each gathered a beautiful bouquet of wood-sorrel, and then began to climb up the slope.

Rover had been lying by auntie's side, while she told her story, looking as intelligent as a dog can do. When we had reached the lane he seemed to become greatly excited, and began racing up and down, and around us, as if he wanted to enliven both himself and us.

"How frolicsome Rover is !" said aunt Emily, as he came bounding to her after one of his excursions.

Off he ran again, and was soon out of sight round the corner, where the elm-tree stood.

This tree was now only a short distance in front of us, and I could feel my aunt's hand tremble in mine, as we approached it. I too felt strangely excited. Neither of us spoke a word. It seemed as if a spell was upon us.

Suddenly we heard a loud barking. Then Rover came running towards us, evidently extraordinarily excited. Then he was off again.

"What can be the matter?" murmured aunt Emily; her face as white as a sheet.

Just then we passed the elm-tree, and turned the corner; and there, only a few yards off, stood a dark gentleman, caressing Rover who was jumping and fawning round him.

At the same moment I felt a sudden twitch at my dress, followed by a low "It is he!" and my aunt was fainting in my arms.

I supported her to the bank. Just then the gentleman came up. I knew perfectly it was Mr. Riding; but neither he nor I spoke. He got some water, while I loosened aunt Emily's dress, and presently she recovered. It was joy mingled with excitement that had overcome her. And I was a witness to their strange but joyful meeting, after such a separation. "My Emily!" "My George!" burst from both their lips at once. Auntie's dream had come true.

When they had recovered from their first emotions, Mr. Riding explained that the vessel in which he had sailed had been wrecked, and that he, with some others, had escaped to a desert island, where they had remained upwards of three years. At last they had put to sea upon a raft, and had been fortunately picked up by a merchant ship. He had at length reached England, and had reached Greenthwaite only half an hour before.

"I left my luggage at the station," Mr. Riding continued, "and hurried off in the direction of the farm. As I passed the end of the lane that runs along the glen, a strange impulse made me advance up it. I had not advanced far when I saw a large Newfoundland dog racing towards me. It was Rover. I felt sure you must be in the glen. Rover left me, but presently returned. The rest you know."

Both auntie and I were silent with astonishment.

"I cannot tell what made me come up the glen; for I was anxious to arrive at the farm. I had no thought of meeting you here. It was such a feeling that impelled me to come as I never felt before."

We then told him of auntie's dream, which excited his astonishment still more than his story had excited ours.

Talking of these things we reached home, and soon our joy was shared by all the family.

George and aunt Emily became immediately the talk of the whole neighbourhood. The shipwreck, the desert island, and his unexpected return made him into quite a hero; while the second meeting in the glen, along with aunt Emily's dream, was considered the height of romance. And so, when the marriage took place a month after, spectators came, and

congratulations poured in, not only from the village of Greenthwaite, but from all the villages round about ; and such a fuss was made, that versions of the story even got into the newspapers.

I stayed to be one of aunt Emily's bridesmaids ; and papa and mamma came to the wedding. The married couple did not go upon a wedding tour, but remained at the farm ; for grandpapa and grandmamma could not bear to lose them even for a short time. Shortly after grandpapa resigned the farm into George's hands.

Such is the story of aunt Emily's dream.

Poetry.

AN OLD MAN'S SONG.

My locks are growing grey, dear,
 My brow is wrinkled o'er,
 And my heart is not so blythe and gay
 As 'twas in days of yore ;
 For you know though love is sweet, dear—
 Though love is very sweet—
 It cannot chase all care away
 That we in life must meet.

But though my locks be streaked with grey,
 And my heart be growing old,
 There's still a green, fresh spot within
 That ne'er for you is cold ;
 • For the days of old—the dear old days—
 Can never be forgot,
 • While you and I, my love, are spared
 To this our earthly lot.

DE WYLDE.

Reviews.

Ye Palaverment of Birds, by SYLVANUS SATYR.
 London : L. N. Fowler.

Under this title has been published a most amusing parody of the incidents of Mr. Bradlaugh's connection with Parliament. The aim of the writer seems to have been, to show up the ludicrous side of these events, and this he has done very completely. An "Eastern question" is the original cause of the "Palaverment." Among other delegates, the Jackdaw is chosen to represent a certain fowl-con-

stituency. Preliminary rites of the most ridiculous kind are ordained by the assembled fowls as necessary. Jackdaw at first refuses to perform these rites. They were a "sell." On being refused admittance into the assembly, he begs most abjectly to be allowed to perform the rejected ceremony; but is refused permission. Then follow much talking, various appeals, and, in short, we have a very clever caricature of the Bradlaugh incident, which is very well worth reading.

Fashions in Deformity, by PROFESSOR FLOWER, F.R.S.
London: Macmillan & Co.

Professor Flower has produced a very interesting account of some of the chief ways of deforming the body at the dictates of fashion. It is surprising enough to find savage and semi-barbarous peoples cutting, maiming, and disfiguring the body, by way of propitiating some devil or deity, or to meeting some absurd canon of fashion. Everybody has read of, and been shocked at, the deforming of the feet of Chinese girls, in order to produce the "golden lily," as the Chinese lady calls her crippled foot; but it has probably occurred to few that the Chinese have cause to be almost equally shocked at the stupidity of many Western people, who, though claiming to be the most civilized of any in the world, yet subject themselves to bodily distortions, if possible, more injurious than the feet cramping of the Celestials. Professor Flower thus speaks of the constricting of the waist, as much in vogue as ever among women:—"Of all parts of the body, the elastic and mobile walls of the chest would seem most to need preservation from external constriction, if they are to perform efficiently the important purposes for which their peculiar structure is specially designed. * * * The body * * * may be compared to a cylinder with a fixed length, determined by the vertical column, and closed above and below by a framework of bone. Circular compression, then, must actually diminish the area which has to be occupied by some of the most important vital organs. Moreover, the framework of the chest is a most admirable and complex arrangement of numerous pieces of solid bone and elastic cartilage, joined together in such a manner as to allow of expansion and contraction, for the purposes of respiration; expansion and contraction which, if a function so essential to the preservation of life and health is to be performed in an efficient manner, should be perfectly free and capable of variation under different circumstances. So, indeed, it has been allowed to be in all parts of the world and in all ages, with one exception. It was reserved for mediæval civilized Europe to have invented the system of squeezing together, rendering immobile, and actually deforming, the most important part of the human frame; and the custom has been handed down to, and flourishes in, our day, notwithstanding all our professed admiration for the models of classical antiquity, and our awakened attention to the laws of health. * * * When it is considered that the organs

which are affected are those by which the important functions of respiration, circulation, and digestion are carried on, as well as those essential to the proper development and healthy growth of future generations, it is no wonder that people suffer who have reduced themselves to live under such conditions." The author, in conclusion, remarks that, in admiring such distorted forms as the constricted waist and symmetrically pointed foot, we are opposing our judgment to that of the Maker of our bodies, and are putting ourselves on a level, in point of taste, with savages. We should be heartily glad if Professor Flower's expostulations and warnings had the effect of opening people's eyes to "what a deformed thief this fashion is;" but we can hardly hope that it will.

Facts and Gossip.

WE have to announce the death of Mr. Hewett Cottrell Watson, the eminent topographical botanist, which took place at Thames Ditton on July 20, after a long and painful illness. Mr. Watson was a son of Mr. Holland Watson, a magistrate for the counties of Chester and Lancaster, and was born in May, 1804. Having completed his education at the University of Edinburgh, for some years he edited the *Phrenological Journal*, but after his withdrawal from that position he devoted himself more exclusively to botany, on which he published many works. He was also the author of numerous pamphlets and papers, and among the best known of those is the "London Catalogue of British Plants," the sixth edition of which bears the date of 1867.

LADIES who wear high-heeled boots may sometimes wonder why they suffer so much from backache. A doctor lately had a fair patient who complained very much of pains in her back. She could no longer dance, and walking was a daily growing torture. He was puzzled, gave her a tonic, and asked her to call again. She came, said she was no better, and fell into hysterics. He was more puzzled, and hearing that some of her lady friends suffered in the same way, asked her to bring them. They came, a melancholy band. They had left their nods and becks and wreathed smiles on the door-step, and gazed at the doctor with undisguised agony. He made them walk about the room. It was the promenade of purgatory. Then he smiled at his own simplicity, and told them they must wear slippers and woollen stockings for a week, and then shoes with scarcely any heels. It was now their souls and not their bodies that were torn with anguish. But they yielded, and their backs were racked no more. The moral is too obvious to be pointed, or, rather, so pointed as to be obvious.

AFTER the so-called "visual purple" was discovered by Professor Boll, and it was found possible to produce pictures on the retina, which might be examined after death of the animal, the possibility of obtaining such pictures produced during murders, &c., was discussed. In a recent article in the *New York Medical Journal*, Dr. Ayres, who made over a thousand experiments in taking "optograms" on the retina of animals, in Professor Kühne's laboratory at Heidelberg, comes to a negative conclusion on the point. While working in the laboratory, Professor Kühne proposed that he should make a picture of Helmholtz, and send it to the latter in acknowledgment of the value of his researches on physiological optics. Dr. Ayres, therefore, got a large negative of Helmholtz, and placed it over the eye of an animal, which had been dosed with atropine. The animal had been in the dark room for hours. The sun was shining brightly, and every precaution having been taken, the retina was exposed for four minutes. There was a dull picture on the cornea, and when the retina was examined there was found an image of Helmholtz's shirt-collar, and of the end of his nose. The light transmitted through the negative was not sufficient to bleach the visual purple. As the purple is rapidly regenerated in the living retina, and may have been restored in this case as fast as it was bleached, Dr. Ayres cut off the head of a rabbit, and waited till all such power in the retina was certainly done away with. Then he repeated the experiment. The result was a little better, but the optogram was by no means distinct enough for one to recognise even that it was intended for a picture. Dr. Ayres therefore concluded that an optogram could not be so obtained. He believes it utterly idle to look for the picture of a man's face, or of the surroundings, on the retina of a person who has met with a sudden death, even amid the most favourable circumstances.

"OVERWORK," properly so-called, says the *Lancet*, can only occur when the organ upon which the stress of the labour falls is as yet immature, and, therefore, in process of development. When an organ has reached the maturity of its growth it can only work up to the level of its capacity or faculty for work! Fatigue may produce exhaustion, but that exhaustion will come soon enough to save the organ. Repeated "efforts" may, under abnormal conditions, follow each other too rapidly to allow of recuperation in the intervals of actual exertion, and as the starting point will, in each successive instance, be lower than the previous state, there may be a gradual abasement; but even this process should not seriously injure a healthy and well-developed organ. In short, a great deal of nonsense has been said and written about the "overwork" of *mature* brains, and there are grounds for believing that an excuse has been sought for idleness, or indulgence in a valetudinarian habit, in the popular outcry on this subject which awhile ago attracted much attention. Nevertheless there can be no room to question the extreme peril of "overwork" to growing children and youths with *undeveloped* brains.

THE
Phrenological Magazine.

OCTOBER, 1881.

ALFRED TENNYSON.



MR. TENNYSON has a distinct and remarkable organization. His constitution is most powerful, he having a large frame and a prominent, bony structure; yet he has a fine, delicate skin, and is highly nervous and susceptible. He combines in a remarkable degree a high order of the masculine in size, strength, and will, and a full degree of feminine delicacy, susceptibility, and intensity of mental action. He has more than an average volume of brain, and his head is peculiar in shape, being very high, rather narrow, and longer in the front of the ears than behind them. His forehead is somewhat sloping, rather narrow, but full in the centre, with a large, bony arch to the eyebrows. His head is specially high in the coronal portions, which indicates some of the strongest traits of his character. The base of the brain, as connected with the animal passions and selfish feelings, is the weakest portion, hence he is not characterised so much for blustering, impulsive actions, as for moderation, tenacity, and perseverance. He has the appetite of an epicure. He values wealth as it administers to his comforts, independence, and intellect. He is not secretive, artful, or given to tricks and management, and abominates deception and double-dealing.

Being very sensitive he is easily annoyed and vexed. He has strong likes and dislikes, yet he is not destructive or cruel, and will never commence a quarrel. His dignity and sensitiveness give him reserve more than secretiveness, yet he is cautious and prudent in action, for he will act from motive rather than from impulse.

Approbativeness is not so large as Self-esteem, hence he is not so affable, familiar, demonstrative, or ambitious, as he is dignified, distant, and conscious of his own individuality. He prefers to command respect rather than admiration, and

is more proud than vain ; hence he would find it very difficult to cater to popular feeling, or do things simply to please or conform to fashion. This consciousness of his own individuality is too strong for the other powers of his mind.

He is very distinct in all his mental operations, and positive in all his desires, likes, and dislikes. He cannot see things with other men's eyes, nor allow others to be his guide or do his thinking for him. Self-esteem and Firmness are the ruling elements of his mind.

There are no sudden changes in his general character ; but he is tenacious, persevering, and determined. Whatever conclusions he comes to, he retains, and whatever course he decides upon to pursue, he works altogether upon that line. The action of the moral brain gives tone to his character and elevation to his mind and loftiness to his conceptions.

He has not so much faith, hope, and devotion as to render him enthusiastic or very demonstrative. He thinks and feels more than he expresses on religious subjects ; hence his religion is more between his Creator and himself than between his neighbours and himself.

Benevolence modifies his whole character. He is in sympathy with all nature, and drinks in inspiration from every source. His humane feelings towards others are much greater than some of his other faculties will allow him to express. He has refinement of feeling rather than extravagance of imagination ; yet he can appreciate the sublime, grand, and terrific. He is no imitator of others, and is not disposed to take pattern after others, but prefers to act just as he thinks and feels,—thus to some he would appear odd and awkward. He has a fair sense of the ludicrous and mirthful, and can in retort be quite pointed and sarcastic ; yet, generally, he enjoys his fun in a quiet way, and is much more in earnest than jolly or witty.

He has the quality of organisation to appreciate music and to enter into the spirit of it, yet his genius is not very great in it. He has a long, frontal lobe, and his forehead is high and full in the centre ; very large in the lower perceptive faculties, but not so full and broad in Causality. He is more practical than theoretical, and more scientific than philosophical. He learns from observation and experience, and is a good judge of the qualities of what he sees, as to condition and use. He has a correct sense of forms, shapes, and proportions of weights and colours, of time and rhythm.

Order is very large, and must have a marked influence on his character, rendering him very particular how everything is done and arranged. It aids to give him uniformity

of character and settledness of habits ; it also assists in giving arrangement of thoughts and expression.

Language is very large, as is seen by his full projecting eyes. It enables him to be a good verbal critic, and to use language correctly and appropriately.



Comparison and Human-Nature are large, giving him the power to analyse, criticise, discriminate, compare, and combine. He is intuitive and quick to perceive the motives in actions, and the spirit of others. His mind is far-seeing and

penetrating; he knows and understands human-nature so well, that he is able to pourtray character correctly.

His Agreeableness not being large, he cannot say and do things for mere effect; neither can he flatter, put on airs, or appear to speak differently from what he really thinks and feels. He is very much in earnest and wants no nonsense or trifling. More youthfulness, playfulness, mirthfulness, imitation, hopefulness, and enthusiasm would enable him to appear to a better advantage. He would be able to adapt himself more easily to a greater variety of persons and circumstances if he had more ease of manner, affability, warmth of the love-nature, and executiveness of mind, joined to a greater capacity to mix up in promiscuous society,—with less dignity, sensitiveness, positiveness, and individuality of character. He is fond of stories, and likes to tell them. He does not talk to make an effect, but is plain and direct in his style of speaking.

His artistic and mechanical talents are not very marked. He requires great motives to call him into action, and has much reserved force. His poetry and poetical talents come from his strength of susceptibility, intensity of mental action, extensive powers of observation, expression, arrangement, rhythm, comparison, and intuition, and from the elevated and refined tone of his mind, joined to his great patience, perseverance, and good general memory.

L. N. F.

THE excessive use of an immature organ arrests its development by diverting the energy which should be appropriated to its growth, and consuming it in work. What happens to horses which are allowed to run races too early happens to boys and girls who are overworked at school. The competitive system as applied to youths has produced a most ruinous effect on the mental constitution which this generation has to hand down to the next, and particularly the next but one ensuing. School work should be purely and exclusively directed to development. "Cramming" the young for examination purposes is like compelling an infant in arms to sit up before the muscles of its back are strong enough to support it in the upright position, or to sustain the weight of its body on its legs by standing while as yet the limbs are unable to bear the burden imposed on them. A crooked spine or weak or contorted legs is the inevitable penalty of such folly. Another blunder is committed when one of the organs of the body—to wit, the brain—is worked at the expense of other parts of the organism, in face of the fact that the measure of general health is proportioned to the integrity of development, and the functional activity of the body as a whole in the harmony of its component systems. No one organ can be developed at the expense of the rest without a corresponding weakening of the whole.

THE FACE AS INDICATIVE OF CHARACTER.

THE EYES AND EYEBROWS.

The most beautiful eyes are almond-shaped rather than round; that is, they have a long instead of a wide opening. Eyelids which are widely expanded (as in Fig. 63), so as to



Fig. 63.

give an open expression to the eye, indicate ability to readily receive impressions, but these impressions are apt to be vague and uncertain. Eyelids, on the contrary, which more nearly close over the eye (as in Fig. 64) denote less quickness of impression, but a clearer insight, more definite ideas, and greater permanence of impression. Round-eyed

persons, in other words, see much, live much in the senses, but think less. Narrow-eyed persons, on the other hand, see less, but think more and feel more intensely. It will be observed that the eyes of children are open and round. Their whole life is to receive impressions. It is only when childhood is maturing towards man or womanhood that thought comes, if it comes at all. Then it is more natural to see the eye become more closed and elongated. Nor is the reason of this far to seek. When we wish to see as much of a thing or sight as possible we open the eye; whereas when we wish to reflect we close the eyelids somewhat, we turn the eye inwards so to speak.

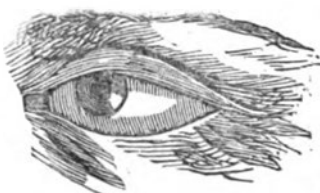


Fig. 64.

But what is it that most leads to reflection? Experience. Our errors, our shortcomings, our failures,—these teach us to think before we act, to consider each step, to weigh every motive. If we have been led into faults by precipitate action or by unchecked impulse, the more necessary is it that we reflect in order to avoid the like evils in the future. When, therefore, the upper eyelid—for it is that which has the greatest amount of mobility—droops over the eye, it indicates not merely reflection, but something painful to reflect about. Hence the length or drooping of the upper eyelid betokens Confession and Penitence (Fig. 65). The drooping of the half of the eyelid from the outer angle to the centre indicates,

according to Dr. Redfield, the disposition to confess one's faults to parents or seniors, to a "father confessor," or to the Supreme Being. The drooping of the half of the eyelid from the inner angle to the centre betokens the disposition to repent, and to "do works meet for repentance." These signs are large in religious devotees—in ascetics, nuns, &c. ; also in reformed inebriates, gamblers, and profligates.

Closely allied to these signs are those of Prayerfulness and Humility. The former is indicated by the muscle which turns the eye directly upwards (See Fig. 66). Sir Charles Bell, in speaking of this action of the eye, says: "When wrapt in devotional feelings, when all outward impressions are unheeded, the eyes are raised by an action neither taught nor acquired. Instinctively we bow the body and raise the eyes in prayer, as though the visible heavens were the seat of God. In the language of the poet—



Fig. 65.

"Prayer is the upward glancing of the eye,
When none but God is near.

"Although the savage does not always distinguish God from the heavens above him, this direction of the eye would appear to be the source of the universal belief that the Supreme Being has His throne above. The idolatrous negro, in praying for rice and yams, or that he may be active and swift, lifts his eyes to the canopy of the sky.



Fig. 66.

"So, in intercourse with God, though we are taught that our globe is continually revolving, and though religion inculcates that God is everywhere, yet, under the influence of this position of the eye, which is no doubt designed for a purpose, we seek Him on high. 'I lift mine eyes unto the hills,' the Psalmist says, 'from whence cometh my help.'"



Fig. 67.

The faculty of Humility is indicated by the muscle which turns the eye directly downwards (Fig. 67), as represented in the pictures of the Madonna. Prayerfulness is usually large in connection with the sign of Confession, and Humility in connection with that of Penitence; the reason of which is, that between the faculties of Penitence and Humility there is the same close connexion as between Confession and Prayer. One who has more prayer than humility has the eye turned

habitually somewhat upwards, so that the upper part of the iris is a little covered by the upper eyelid, and so as to leave a slight space between the iris and the lower lid. The reverse is true of one who has more humility than prayer.

The faculty of Truth—that is the love of it—is indicated by the muscle which surrounds the eye, causing folds and wrinkles, as represented in the annexed figure (Fig. 68). Justice is indicated by the muscle which causes perpendicular wrinkles between the eyebrows, as also shown in the above figure. Fulness and wrinkles under the eye, for which some persons are remarkable, indicate the love of mathematical accuracy; and wrinkles curving upwards from the outer angle of the eye and eyebrow, indicate Probity or personal truthfulness. Persons with this sign large, according to Dr. Redfield, are noted for always keeping their promises, and for doing as they agree to do. Wrinkles downward from the outward corner of the eye indicate Mirthfulness.



Fig. 68.

There are three degrees of the faculty of Justice. The first is a kind of exactness or strict honesty in small money matters, which some people would call closeness, and is indicated by a single perpendicular wrinkle or line between the eyebrows. The second is the disposition to require justice in others, and is indicated by two perpendicular lines or wrinkles, one on each side of the centre—a very common sign. The third is conscientiousness, or the disposition to apply the rule of justice to oneself, and is indicated by three, or more, wrinkles or lines, especially noticeable extending above the eyebrow when the muscle is in action.

“Related to Truth and Justice,” says Dr. Redfield, “are the Love of Fiction and the Love of Collating.” He gives the first as indicated by the muscle of the socket which turns the eye directly into the outer angle towards the ear; and the latter as indicated by the opposite muscle, which turns the eye directly into the inner angle towards the nose. These two signs generally act together, and in exact proportion to each other, one eye turning outwards while the other turns inwards. The reason of this is, says Dr. Redfield, that fiction has generally to be made up from scraps of reality, while disconnected objects or events have to be linked together by

fiction or the creations of fancy. Novelists and compilers are no more remarkable for these two faculties than for their signs. Sometimes, however, the love of fiction, or of story-telling, is less than the love of collating, and in that case the eyes squint towards the nose, and at other times the love of collating is less than the love of fiction, in which case the eyes squint outwards. Unless the squinting be from deficiency of one of these faculties, rather than from excess of the other, there is the disposition to tell falsehoods or to plagiarise—to tell falsehoods if the squint be outwards, and to plagiarise if it be inwards. If these faculties be strong, there is need of large Truth and Justice to counterbalance their influence, and to prevent their excessive and perverted action.

The student of physiognomy may exercise his observation on these two faculties. The writer does not vouch for their existence; nor can he say that they do not exist; but it is within his experience that there are many accomplished liars who squint neither inwardly nor outwardly.

The Love of Command is indicated by one or more short transverse wrinkles across the root of the nose, exactly between the eyes. It may be seen in great military commanders, in masters and teachers, and in those generally who are fond of exercising authority. In those who are wanting in the power to command, and have no desire for responsibility, this sign is also absent. The faculty of Command frequently acts with that part of Justice which reprimands, or requires others to do right, and both together produce that frowning and lowering brow which is so terrible to evil-doers, or to those who love to be approved rather than condemned.

THE TEACHINGS OF PHRENOLOGY.

Phrenology teaches that man has a soul or spirit aside from bodily organs and functions; that that soul or spirit is composed of a variety of faculties adapted to the various wants, conditions, and relations of man; that these powers of the soul or mind are distinct and individual in their functions and operations, and may act separately or in combination with other faculties, as the case may require; that mind has all the executive and protective powers necessary to overcome difficulties, destroy enemies, supply natural wants, and exert an influence over others; that the mind is composed of social elements constituting man the agent, disposing him to parent children, take care of them in their

tender age and dependent condition, and to unite in wedlock and be devoted to another so as to better accomplish that end, and to impress the influence of both parents upon the nature of the child, and to have a permanent home where the children may be trained to uniformity of life and habit while their characters are being formed ; at the same time to be social and friendly with others, to help to form society for the purpose of further development and improvement of the mind by a greater variety of contact with other minds, and also for greater safety and protection.

Phrenology also teaches that man is an aspiring being, by possessing qualities of mind that have that influence. Thus one mind vies with another in various ways, giving sense of character and desire for the approbation of others. It teaches that man has sense of power and desires to exercise it and dominate over others, thus preparing those who have it to take the lead and responsibility ; that the mind is composed in part of prudential, restraining powers that put a check on the positive qualities, thus aiding in giving balance, harmony, and circumspection of mental action ; that man has versatility and powers of contrivance, and ability to see the same thing in different ways, and to do a variety of things and use many different kinds of tools, and be adapted to a great variety of circumstances and conditions ; that the mind is very impressible and easily called into action in new channels, and has the power of expansion, enlargement, and embellishment ; that the mind recognises sounds and tones of voice, and by the aid of other faculties connects sounds with thought, emotion, and feeling ; and that there are faculties particularly adapted to the recognition and study of laws and their relationship and use, to the study of the material world and how to make the best possible use of it, and in this way man becomes knowing and scientific. These perceptive faculties enable him to see nature and things as they are, to recognise individual existences, actions, powers and results, to perceive the forms, proportions, weight, colour, order, number, and locality of objects, and to take cognizance of events and passing time.

Phrenology also recognises the powers that put thoughts, feelings, and sentiments into words and songs, that perceives the aptness of speech and the understanding of words, sentences, principles, and the origin of things. It recognises the power that condenses thought and feeling, that says much in a little, and that most appropriately ; also the prophetic powers of mind and those giving intuitive perception of hidden truths and traits of character and forecast of mind ; as well as aptness of speech and manner.

Phrenology not only recognises man as having the mental qualities that render him executive, self-protective, and adapted to the increase and care of the infantile race; as being social and a lover of peace; as having an aspiring, ambitious spirit and love of power; also as having genius, impressibility of mind and power to control voice and connect it in words and song, to give ease and blandness of manner, aptness of speech, and due restraints over the impulses;—it not only gives perceptions of the laws of nature and their application and adaptation to man's wants, and all that belongs to their action, together with power to condense thought and feeling and say much in a little, to have judgment and understanding, intuition, and prophetic vision,—but it recognises man as having a moral and religious nature, as having faculties rendering him conscious of duty, truth, obligation, and the great law of equity and integrity, as a fundamental principle in nature. It recognises too a faculty giving consciousness of immortality, of future existence, of hopes without end; also a faculty giving consciousness of spirit-life, faith, and confidence in spiritual existence and influence, and in a relationship between this life and the life beyond the grave. It also recognises a supreme, creating, controlling, superintending power, who has given off all the life-force, light, and law that is manifest; that not only has the attributes of law and justice, but of mercy, love, and charity, and these qualities are recognised through the faculty of Benevolence.

These moral faculties exist in the nature of man as climax powers to control and guide the action of the lower and more animal part of man's nature. Phrenology says that they exist in man because they existed first in the Divine mind, and that we learn through a correct knowledge of our own nature, those faculties that belong to the Divine mind, so far as it is necessary for us in this life to know them. It also teaches a natural theology and a natural religion such as God expects man to manifest, because He has given him the faculties to manifest them.

Phrenology is in harmony with all the fundamental principles of religion. The principles of justice, mercy, obedience to a higher power, and humility before the supreme recognition of the principles of immortality and of spiritual existence and influence, are generally admitted, and these are recognised by phrenology. What kind of a theology and religion, then, would phrenology give to the human race? It would give a theology with a foundation based in justice and mercy, in a faith in immortality and spiritual existence

and influence, in an approachable God by prayer, whom it is man's duty to love and obey. Phrenology acknowledges through Veneration a creating power possessed of all power, or having all power centred in him—complete in all his attributes, and possessed of so many as to give perfect consciousness, with nothing lacking—so perfect as to be far beyond the capacity of man to comprehend or understand. Only so much of God is made known to man through his works, and especially as indicated in the mind of man, as is necessary for him to know in this life. How much more of his character will be unfolded to the human mind in the other life eternity only can reveal. It would take a God-like mind to appreciate the infinite.

L. N. FOWLER.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE VI.

I have spoken hitherto of the animal propensities, and there remain three to be considered.

SECRETIVENESS.

Among the different characteristics found in society, there is one distinguished by the name of cunning. It is not always that persons excel by judgment; persons may be very cunning and have but little judgment. It is difficult for such persons to give direct answers to questions; they will turn the point, if they can, by evasion, and in speaking with them you must insist upon the argument, to induce them to pay attention and to answer you; they prefer to tell lies. Some individuals are exceedingly fond of intriguing, and they are fond of shifting; they turn with the wind. If ever you have to defend an opinion they are ready to join you, and do as you do; and if you alter your opinion, they alter theirs. Hence, observing this versatile disposition in some individuals, it was very natural to be attentive to the organization of the brain, to see whether it corresponded with the actions observed; and we observe that a very intriguing fellow, who plays a double character, will often succeed well in the world. There are some individuals without great merit who know how to find their way through life; they know how to play off to the greatest advantage; whilst others never succeed, but fail in every thing they undertake.

Gall was attentive to the organization of such characters,

and he found that they were broad above the ear, above the organ of Destructiveness. This (showing a cast) was an individual of the character I have described ; if you look at the configuration of his head, you will find that it is broad here, at the middle, and on the side of the head, above Destructiveness. This individual (showing a cast) belonged to a good family—a very respectable family ; he spent a great deal of money, and then, to get more, he deceived all his friends. He borrowed large sums of money of one and then of another, but no one person thought he had borrowed of a second ; he obtained a sum so large, and having spent it all, he could in the end pay nobody, and thus he was discovered.

Dr. Gall found very cunning individuals always very broad here, and he called it the organ of Cunning. If you examine cunning individuals, you will find that they are broad here, laterally. Individuals in different countries, who are cunning, you will find broad here. However, shall there be an organ



Secretiveness large.

of Cunning ? I will give you my opinion. In order to be cunning, we must possess a certain quantity of intellect ; and the feelings I have hitherto spoken of are without intellect, and blind, and I have stated that they are blind because they produce a determinate impulse without the exercise of judgment. To be cunning is also natural, but persons do not like to be considered cunning, although nature appears to have given a propensity. What, then, is the fundamental power of this organ ? If you reflect on the actions of men and animals, you will find that there is a peculiar instinct to hide and conceal : an instinct which is very necessary and important to animals. Many escape from their enemies by hiding themselves ; the fox, being pursued, runs into a hole and hides himself. Many other animals do the same to obtain their prey ; the cat, when watching for a mouse, contracts her

body into as narrow a space as possible, and moves in a very peculiar way. Cunning persons always try to conceal their motions; everything they do is concealed and kept secret. An individual may conceal his intentions to do good, but he may also conceal them to do mischief; if he do mischief, we call him an intriguing being; but if he do good, then we call him a prudent man. Thus, the name is given to the application of the power; but, in phrenology, we must try to find out the fundamental power, not the result of its application, because that very much depends upon accidental circumstances.

The instinct to conceal is active in animals and in men. Look at children: you will see some very active in concealing any thing they meet with. We see that some animals not only conceal themselves, but their provision. If a dog finds a bone, after he has satisfied his appetite, he will conceal it until a future time. Indeed, you will find, in animals and in men, that to conceal is a fundamental power. Tell one man a secret, and he will keep it; tell another, and he will repeat the secret to everybody. Some will make presents to their friends, but will do it in a very concealed way. So, in a general way, we find that it is a fundamental power, and one that is very necessary; its organization is quite ascertained. Whenever I find this part large (No. 10), I know that the individual has a great tendency to conceal, but I will not say to what purpose he will apply it—whether to a good or to a bad purpose. There are some individuals who will sometimes tell you things—known to every one—quite in a secret way, and in them you will find this individual part much developed. Whenever you see heads of this kind (showing three or four), you may rely on the person being very secret. You must not expect that such an individual, having the organ large, would always say what he means. The organ, then, may be observed, and we call the power or feeling among mankind Slyness, and in animals Cunning; but I prefer the term Secretiveness.

ACQUISITIVENESS.

I come now to the consideration of another power, which has done harm to phrenology; it has been made quite the scape-goat, for all persons have spoken of an organ of Theft, and it required great courage in Dr. Gall to show that their was an organ of Stealing. There are thieves in all countries, and individuals who have a great inclination to steal. Characters of the first kind—or the thieves—we know, exhibit great dexterity in contriving to accomplish their purpose under a

variety of circumstances, and among the latter, we know that persons of good education and good families have yet shown a peculiar inclination to steal. It must have come under the notice of every one present, that there are individuals among the rich and the poor who do not need to steal, and yet exhibit the greatest pleasure in stealing. Lavater speaks of a physician who used to steal anything he could lay his hands upon from the rooms of his patients. A lady of fortune used to take a great pleasure in visiting shops, and she contrived to steal something from every one; and her friends used to send persons with her to watch, and afterwards to restore the articles. These are positive facts. We see among idiots this propensity very strong; for although they may have their pockets full of bread, or other eatables, they will go on stealing. In insane persons we find this instinct to steal sometimes



Acquisitiveness large.

strong. Unfortunately, there are too many persons who have a propensity to steal; and Dr. Gall, observing such individuals, found the cerebral part hereabout much developed. I can show you many examples: they are not scarce. This is the part of the brain where the organ is situated (showing a cast) here, anterior to Secretiveness (it is marked No. 9, on the model bust.) Here is the cast of the head of a man who first cheated his friend and then murdered him; here is another who did the same—Patch. We have observed many facts of this kind, and it is positive that the greater number of such persons have the brain large in this region.

We must now reflect on this power a little. We see that such actions as I have mentioned do take place, although we have the law given expressly on the point, morally and politically, "Thou shalt not steal," yet we find that some

persons will steal. However, we shall not admit that there is a peculiar power for stealing, but we observe thus much, that persons who are very active in that way, and who show a great propensity to steal, have this part large; but we do not say that every one who has this cerebral part large shall be a thief. No; this is an organ which is very large in mankind, and it is the cause of infinite mischief; there are few organs to which a fundamental feeling is attached which do so much harm as this. It is this feeling which separates mankind one from the other, and nations from nations; it is the propensity against which Christ himself was so severe. Look at an individual in whom selfishness is a very prevalent feeling: talk to him about charity, and he will say, "Charity begins at home;" and he will place his personal interest above every other consideration; he cannot conceive that any person can be gratified without getting something by it. In individuals who, in an honest manner, from infancy, try to become rich, to acquire riches, you will see this part much developed. It is a power absolutely necessary for existence; if we wished to exist, must we not take care for our subsistence? Animals make a provision for the winter; they do it by instinct, as it is said, but you will not only see this feeling among the lower animals. You will see persons who are very fond of bringing things together; they are not satisfied with collecting what is merely necessary, but as the organ of Destructiveness is sometimes so powerful as to cause the animal to kill more than is necessary, so the organ of Acquisitiveness induces persons to bring together more than is necessary, being never satisfied; and in such people you will always find these organs large. There are certain species of animals, as magpies, that take away and collect what they have no necessity for, as spoons, and glistening things of any kind, and will conceal them. There are some dogs who appear to think that stolen meat is always better than that which is given them. We admit, then, as a fundamental power, that which gives the desire of acquiring or collecting, and in phrenology it is called Acquisitiveness. It does not determine the objects to be acquired, nor the means of acquiring them, the choice of objects in which this feeling is to be exercised depending upon other powers. People generally try to acquire money, because that will procure all other things; but it is peculiar that, in the application of this power of acquisition, some will, like the magpie, collect together things which can never be of use to them. A gentleman at Vienna had collected together a great quantity of things into one room—things which he never could use. It is very interesting to contrast these two examples of

the development of this organ : now, in which do you think Acquisitiveness is the largest ? (Showing the casts, in one of which the organ was much more developed than in the other.) Which do you suppose of these would gain by a bargain ? (Contrasted with this, was the cast of an unfortunate female, who, even in her reverse of fortune, declined to accept of more than she considered necessary for her existence.)

I hope, then, that you will have no objection to Acquisitiveness. What would mankind be without Acquisitiveness ? But whether you gain by industry, or by stealing,—whether by commerce, or in any other way,—that does not depend upon this individual power, but upon a combination of powers. This organ gives the instinct only, the propensity or power of wishing to get. If you find an honest man who has made his fortune with a particular desire to get rich, you will find the organ large in his head. When we speak of stealing, we must admit that legislation has drawn a distinction, and fixed arbitrarily certain regulations for the public good, but legislation does not destroy the power of selfishness.

Look at animals : there is no tenure by which property is held among them but by force. We see, that among birds, the stork will fight with its neighbours to try to gain possession. A stork comes back every year to build in the same chimney, and will allow no other to build there. We know that in certain districts there is only a certain number of birds of prey, and they will allow nothing to come into their estate ; they will fight with them, and drive them away. Even among the chamois, which feed on herds, one herd will not allow another to feed on the same mountain. There is a feeling, then, which leads us to acquire and collect.

CONSTRUCTIVENESS.

We come to another point. In animals we see an instinct which leads them to build or construct. Birds especially build their nests—some in trees, others in holes—and show great skill in the manner in which they do so. Among mankind we observe a disposition to build. Some men show a great disposition to architecture, to become architects, and the question is, whether there is a natural disposition to do so, independent of a combination with any other power ? There are children who sometimes show a particular talent for the mechanical arts ; they invent machines, and sometimes they are prohibited from exercising their talents, and punished for doing so. As we see in schools, if a boy will draw when he ought to be reading his lesson, he is punished. If you observe persons who excel in drawing, and show any talent for inven-

tion, you will find that they are differently organized from others in this spot here. Look at this head : you observe that it is large just behind the external angle of the eye. Anterior to Secretiveness is Acquisitiveness ; still more anterior than Acquisitiveness is an organization which gives the power called Constructiveness—it is the power I now speak of. This is the cast of the head of a boy only eight years old. He had the talent of imitating in paper the figures of whatever he saw ; you observe how broad it is here (pointing to the part). Here is the cast of a person who was punished for his talents, and he ran away to satisfy his talents, and you see the organization is very full in this part. Do you think that such a person (showing a cast very flat in this place) would show a great talent for construction ? Shall we find the powers of constructing in the arts different in different nations ? You will find this part more developed in the French than in the



Constructiveness large.

English. If you observe persons in the streets of Paris, you will observe the organization large, generally speaking. Here are two French skulls : you see that this part is full, not that I would draw any inference from them that the heads of Frenchmen are so generally ; I give you the remark in a general way. If you observe in common life persons showing great dexterity in the use of instruments, as mechanics in the use of their tools, you will find this cerebral part well developed. Many mechanics can devise very ingenious things, but they have not the power of carrying their inventions into effect ; they must have others to manufacture for them, because they have not the power I speak of. As far as manual dexterity is concerned, you will certainly find a greater number of persons who possess it in the French than in any other European

nation. Here is the head of a person who had the power of putting a few things together ingeniously ; she was a *merchande de mode*, one of those people who, by constructing bonnets, give the fashions all over the world. You see she has this organ large. From the many observations which have been made, the situation of the organ may be considered as certain. It is situated behind, and a little above, the external angle of the eye, and it is situated in this country a little higher up than it is abroad, for this reason : when the cheek bones are narrow and contracted, the organ is situated a little higher up than it is when the cheek bones are very prominent, because all anatomists know that the cheek bones form a part of the orbit externally as well as below. Hence, then, a distinction would be necessary, if we spoke of the situation of the organ in relation only to the external angle ; but in phrenology we never confound the face with the brain. It has been often said, that Voltaire had a small head, but the truth is, that he had only a small face.

This is a cast of what is considered the true skull of Raphael ; I know there has been some dispute about it, but it is considered in Rome to be his skull, and I can only say, that you might examine thousands of skulls and not find one presenting such organization indicative of the mental powers which, from his works, Raphael must have possessed. The cerebellum is very large, and the organ of Construction is very large—organizations essential to a fine painter, added to other powers. But our opponents cannot conceive how we can compare the organs of such sublime conceptions, as those of Raphael, with the head of a marmot. I do not say that a marmot has the same extent of powers as Raphael ; but, combined with other powers, construction, which is fundamental and acts as instincts in animals, gives rise to a particular application of the higher faculties. The power of construction is one thing ; but whether a person possessing it will be an artisan, a painter, or an architect, is another ; you must never confound the power with its application. These are the several powers called propensities.

SENTIMENTS.

I come now to other feelings, which have certainly claims to be considered more than mere propensities, and I wish to speak of two of them to-day. These have a great influence on mankind, and they have been considered as factitious. If you will observe phrenology, you will be convinced that it is easy to prove that they exist fundamentally in nature, and yet that they depend upon the brain. I should wish any one,

who does not like phrenology, to reflect on these two, as I am sure that they are as great obstacles to morality as extreme selfishness, and the Christian code is very severe against them, and whenever that is the case, you may rely on it that there exist strong fundamental powers.

SELF-ESTEEM.

Do you think that pride exists naturally, or that man can be proud from nature? It is quite astonishing that philosophers have not more insisted upon the fundamental nature of pride. We are told that the first man fell from pride, and we shall find throughout mankind, the feeling very strong. I admit a fundamental feeling which gives to man a disposition to have a good opinion of himself; make that feeling a little stronger, and then it is called pride.



Self-esteem large.*

Take it up, then, as pride—the feeling in a higher degree—and you cannot deny its existence. There are those who maintain, that such feelings are the result of society; that if in society any one has great natural talents, or if any one without the possession of such talents acquire a great influence on society, such an individual will be proud. But is every man of talent proud? Some are—others are not; these circumstances then, the possession of talent, and the influence of that talent on society, do not produce pride. Some very inferior persons, poor and having no talents, have a very high opinion of themselves. Others have again said, that great talent gives humility, but I do not admit that as a cause; I consider the feeling as fundamental. If you know an indi-

* The Indians of North America, or at least those who formerly inhabited the Atlantic Sea-board, were noted for their pride of character; and their skulls are remarkable for the sign of Self-esteem. In the illustration Approbativeness is small, and the quality does not appear to have been a general characteristic of these peculiar and interesting people.

vidual in any profession who knows a thing better than another—if he knows better how to give medicine if he be a medical man—or if he knows how to give a better interpretation if he be a metaphysician—if he thinks he can do them better than anybody else, and if asked his opinion, will say, I have not examined, and have not made up my opinion, and therefore, the matter cannot be settled, you may be sure this organ is large in his head. There are people who speak in a very positive way, and who have greater opinions of themselves than any other persons: you will in them find this part of the brain much developed. You may go through sexes, and families, and nations, and then you will decide as those have who have already done so. You will find throughout each, that such persons as place their opinions above all others, and have great notions of their own worth, are high here, at the vertex (the upper and back part of the head): it is the organ of the feeling of Self-esteem, and in a higher degree—Pride.

This power is very necessary, it preserves individuals from lowness of mind; I cannot conceive a noble mind to be without some self-esteem or independence. We have no hesitation as to the seat of the organ; it is here, and you may see it large. Some nations manifest much more self-esteem than others, and in individuals it manifests itself in a good or bad way, so that we can speak very positively of the power. A very rich man in Paris, a man worth millions of francs, shut himself up in a little house near the Palais Royal. On the contrary, you will see that the feelings of individuals, who are sunk much in that part, are meek and humble, whilst those who like to command and to take the lead, to be the first in anything, have the part largely developed. You see the feeling among boys, those who will play at soldiers; some will never consent to be common soldiers, they must be captains, or generals, and those who have the feeling strong are also fit to command. You will understand this feeling better if you consider another at the same time. The neighbouring parts are sometimes larger, and these combinedly have a great influence upon society. You may have the organ of Self-esteem well developed, but you may have the lateral parts, the parts on each side, still more developed, and when that is the case, another strong power is brought into action. I speak of a fundamental power in phrenology, which is called the

LOVE OF APPROBATION.

This feeling is very evident among children, and it is encouraged in the schools under the name of Emulation; there

we make use of it for an excellent purpose. If you notice the organ full in children, you may depend upon it that they are fond of approbation; the feeling being called forth is said to be the love of glory, but whether the love of approbation be considered in a general or in a slave, it remains essentially the same. Hold out some public honour to men and they will do anything, no matter whether it be the gift of a pebble, a bit of metal, or a ribbon. Some men will do anything to have a ribbon. I might be severe, because we may notice the errors of all nations founded on this anxiety to be distinguished from others by some external distinction. Combined with other powers, self-esteem and the love of approbation do good in society. Does a man do good and wish to keep it a secret? No, he wishes everybody to know it. I do not blame the feeling, because I cannot expect to limit it by the rules of philosophy; it is often productive of great good; it is a very active feeling in mankind; the desire of being noticed publicly is very great. If a man wished to be remarked by the world, he would, Erostratus-like, put fire to the Temple of Ephesus to obtain it;* he would rather be pitied than be unnoticed. Some persons will do anything provided the world will notice them, and in such persons you will always find this cerebral part large. Sometimes both this organ and the one I before described are large; look at the different bumps, as they are called, in inhabitants of different countries, and you will observe great differences. You find great difference also in the sexes, particularly in the young; you may talk to boys and point out the value of what you tell them, and say, what will people think of you if you do not learn? but they will not pay much attention; but if you observe in girls their lateral parts large, they will be attentive to what you say, and you can make use of this feeling to instruct them, and if you appeal to the opinions of others as motives for excitement, they will be very attentive; they ask, "What will they say of me?"

The feeling produced by a combination of these powers, very largely developed, is very curious. I have never seen an individual who had them both large who was satisfied with the world. Such a person thinks that the world has not done so much for him as he deserved; he imagines that he has deserved very much more than the world is inclined to remunerate him for. Some people are very touchy, and even sometimes among labourers, the lower classes of society, the love of

* The famous temple of Diana at Ephesus was burnt by Erostratus on the same day that Alexander the Great was born.

approbation is so strong, that when they are drinking together, the one who has felt his consequence much hurt will even stab his fellow-labourer. In looking for this organ you will not always find it very elevated, but it is generally very broad in the characters I have been describing.* I give the feeling as fundamental, and the organ as quite certain.

The doctor then briefly recapitulated, and exhibited the casts of several persons known to possess this feeling in considerable activity.

INFLUENCE OF TOBACCO ON THE FUNCTIONS OF THE BRAIN.

BY DR. COUSTAN.

Our inquiries have extended to three groups of educational establishments, viz., primary, secondary, and higher, or special schools. Whether the use of tobacco is entirely prohibited, or only indulged in surreptitiously, or on going-out days, or permitted under certain restrictions, and consequently more largely practised, the figures show that it affects the quality of the studies in a constant ratio, and this influence is more marked in the different establishments where tobacco is more extensively used.

We have examined the second rhetorical and philosophical classes in the grammar schools (*lycees*) of Douai, Saint Quentin, and Chambery, making a total of 155 pupils, distributed in about equal proportions. The average rank of the pupils is as follows:—

Non-smokers.....	4.08
Moderate smokers.....	6.53
Heavy smokers.....	9.35

The above shows a very distinct gradation, and all in favour of those who smoke the least. Tracing the progress of the same pupil through the different classes, we observe that as his propensity for smoking becomes more marked, his place in the class becomes lower.

B—, a pupil in the second class, session 1876-77, is marked as smoking only on going-out days, and ranks No. 4 in his class. The same pupil passes into the rhetorical class

* The organ of Approbateness, or Love of Approbation, is situated on each side of Self-esteem, and when large gives great breadth and fulness to those parts. When it is combined with small Self-esteem, a hollow, in which the little finger may be laid, will be observed. This peculiarity is often noticeable in women.

in 1877-78, and is then marked as smoking both on going-out days and secretly at school. His place is now No. 10.

F—, in the second class (1876-77), is marked as smoking only on going-out days, and stands No. 7 in his class. He enters the rhetorical class (1878-79), and is observed to become more addicted to smoking. His place in the class is No. 14. The same pupil passes into the rhetorical class (1879-80), and is marked as being a great smoker. He is now the 21st of his class.

C—, one of the pupils in the second class (1876-77), is marked as smoking on going-out days and secretly at school. His place is No. 13. After his removal to the philosophical class he is marked as continuing to smoke on going-out days and, as before, at school. His position is now No. 21.

One of these young scholars, whom we questioned, gave us a very accurate definition both of the effect and the charm of tobacco smoking in such cases; he said that a cigarette made him dream. In other words, the use of the cigarette intoxicates these young people, causing them giddiness, fits of absence, and a dislike to all mental exertion.

We have been furnished with particulars relating to a portion of the class of special mathematics in the College Rollin, and although these young people only smoke on going-out days, and the table of comparison only comprises a portion of the pupils, we see the same tendency as shown above—the non-smokers lose 1.2 in rank, whilst the smokers lose 2.8.

At the Polytechnic (*Ecole Polytechnique*), we made inquiries respecting the pupils promoted in 1878. The use of tobacco is very general in this institution, and the results, though not embracing the whole of the pupils, are very significant:—

The non-smokers have lost	21.2	places.
The moderate smokers	„ 27	„
The great smokers	„ 38	„

We have applied the same method of classification to a certain number of other schools, or we have had it done by trustworthy persons, and we give below an abstract of the results shown in the statistical tables which we have presented in our report.

At the mining-school of Douai, out of eight pupils who do not smoke, five have gained places, one has kept his rank, and only two have lost them. Out of thirteen pupils who smoke, only three have obtained higher places, three have kept theirs, seven have lost them.

The volunteer recruits belonging to the 14th batallion of

light infantry have been grouped as follows, during their year of study (1878-79) :—

Non-smokers, average rank.....	15.42.
Moderate smokers " "	20.04.
Great smokers " "	23.40.

These pupils are 40 in number. The ten first consume between them (nine centimes) 8 1-2d. worth of tobacco per diem : from 10 to 20 they consume 10 1-2d. worth ; from 20 to 30 they consume 11 1-2d. worth ; from 30 to 40 they consume 1-6 worth.

At the military veterinary school at Saumur, out of the pupils promoted in 1879-80, the non-smokers take the average rank of 4.6, the smokers 16.7.

The civil engineering pupils examined in 1877 show the following results :—

The average rank of the non-smokers is, on entering, 11 ; on leaving, 9. That of the moderate smokers, on entering, 11 ; on leaving, 15.6. That of the heavy smokers, on entering, 14.3 ; on leaving, 15.6. According to the testimony of one of the pupils, there is not much smoking at the school of civil engineers ; and thus we see that the results, though still characteristic, are little marked.

In two other schools, where the habit of smoking prevails in a still less degree, the differences in rank in proportion to the amount of tobacco consumed become still less apparent.

First, at the primary normal school at Douai, the pupils, all of them very steady young men, intent upon obtaining the diploma of teacher, do not smoke inside the establishment. They have no leave of absence during the year. Those who do smoke are thus exposed to the influence of tobacco only during the vacation. We, therefore, merely state that the non-smokers gain two places on an average, whilst the smokers only gain one.

It is the same at the higher normal school in the class-list of 1878. These young men furnish the *élite* of literature or science. With them the love of study is a passion. They possess a vast, well developed, and superior degree of intelligence ; the use of tobacco is the last thing they care about. Thus the differences of classification in reference to the habit of smoking are almost inappreciable.

The average rank of the non-smokers on entering the school is 8.2 ; their average rank after one year, 9.2 ; the average rank of non-smokers on entering, 9.25 ; their average rank one year after, 10.2. The pupils in each division have lost one place. We observe, however, that the average rank

of non-smokers on entering the school is one higher. This affords, therefore, a negative proof, which has also its value.

But more striking results are met with in the naval school at Brest. This school, which is established in a vessel moored in the harbour of Brest, exists for the purpose of training officers for the navy (*marine militaire*). Every year it admits from 40 to 45 pupils by competitive examinations—an examination as difficult as that of the *Ecole Polytechnique*. The candidates are from 14 to 17 years of age.

During school term they are completely cut off from all communication with the land, and obtain leave of absence only once a month; but they are allowed to smoke one hour a day—half an hour in the morning and half an hour at night. Generally, these young people, fresh from their grammar schools, want to comport themselves like men, like full-blown sailors, and so begin to smoke. They often climb up into the shrouds to smoke a pipe, like the old salts in novels, without knowing whether after smoking it they will be steady enough to find their way down again. We have even known some who chewed tobacco at the age of fifteen!

Taking these habits, and the age of the smokers, we infer that tobacco will produce a marked effect upon their intellectual development. Indeed, we gather from the table of the class-list of 1878 that only four pupils do not smoke. They entered the school with the numbers, 4, 12, 31, and 40. After a year's study they stand respectively, 1, 2, 31, and 8. The four have together gained 45 places, which is a marvellous result.

As to the great smokers, if we take the half included among the first 20, we find that they enter the school with the numbers 7, 9, 10, 11, 14, 16, 17, 20. After a year's study, they have numbers 17, 32, 9, 40, 23, 37, 24, 44. The whole eight have lost between them 123 places. If we take the whole list, we see that the average rank on entering the school is:—

For non-smokers.....	20.7
For moderate smokers.....	23.3
For heavy smokers.....	22.8

And the average rank, after a year's study, is:—

For non-smokers.....	10.5
For moderate smokers.....	22.1
For great smokers.....	32.2

That is to say, the non-smoking pupils have gained 10.2 places; the moderate smokers have gained 1.1; and the great smokers have lost 9.4.

The depressing action of tobacco on the intellectual development is, therefore, beyond question. Its influence clogs all the intellectual faculties, and especially the memory. It is greater in proportion to the youth of the individual and the facilities allowed him for smoking.—*Journal de la Societe contre l'abus du Tabac.*

BREATHING.

The combined forms of midriff (diaphragm) and rib breathing are the right method of inspiration, while collar-bone breathing is absolutely wrong, and should never be made use of. The reasons for this are not far to seek. The lower part of each lung is large and broad, while the upper part is cone-shaped, and very much smaller. It is self-evident, therefore, that by downward and sideways expansion (enlarging the *lower* part of the lungs) you will inhale a much greater quantity of air than by drawing up the collar-bones. This consideration alone should suffice to prove the utter falseness of collar-bone breathing. Collar-bone breathing has also the additional disadvantage of causing much fatigue, because all the parts surrounding the upper region of the lungs are hard and unyielding, so that a great amount of resistance has to be overcome (the "*lutte vocale*" of French authors), while the very opposite is the case with the lower part of the lungs.

The lungs, as we have seen, are the bellows of our vocal organ; they supply the air which is the motive power on which the voice depends. Without air no tone can be produced. Nay, more, life itself must cease without it. Breathing goes on regularly while the voice is silent; but in speaking and singing both inspiration and expiration have to be regulated according to the nature of the phrases to be spoken or sung. If the speaker does not know how to take breath and how to control the expiration, his delivery will of necessity be jerky and uncertain. But in the singer it is even more important that he should be able to fill his lungs well, and having done this, to have absolute command over his expiration; because, while the speaker can arrange his sentences, his speed, and his breathing-places very much at his own pleasure, the singer is bound by the music before him. It must, therefore, be his aim to cultivate a proper method of breathing with the object of first getting, with the least possible fatigue, the largest possible amount of air, and then of controlling the exit of that air in the most scrupulously careful manner, so as to prevent even the smallest fraction of it from being wasted.

Yet how seldom is breathing systematically practised as an indispensable preliminary to the production of tone!

From what has been said above about midriff and rib breathing *versus* collar-bone breathing, the folly of tight-lacing, or, indeed, of in any way interfering with the freedom of the waist, will be at once apparent. We pride ourselves upon our civilization, we make a boast of living in the age of science, physiology is now taught, or at least talked of, in almost every school, the laws of health are proclaimed in lectures and lessons innumerable all over the country, and we laugh at barbarous customs of other nations, such, for instance, as that of Chinese women preventing the growth of their feet by forcing them into boots of only half their proper size; and yet our ladies wear instruments of torture called corsets, altering the shape of their bodies, and positively driving the lower ribs *into the lungs*! Now which folly is the greater, that of doubling up the toes, or of crippling the body in its most vital parts? Let ladies answer the question, and let them further most solemnly consider that the girls of to-day are the mothers of to-morrow, and that upon the measure of their own health and strength depends the well-being of coming generations.

It is only fair to add, that if the practice of interfering with the freedom of the waist is reprehensible in the case of ladies, it is, in one sense, still more so in the case of the male sex, because men depend more for their breathing upon the action of the abdominal muscles than women. They should, therefore, neither wear tight-fitting vests, nor suspend their pantaloons by means of waistbands, belts, or buckles. Loose garments and braces are the proper thing, though the latter are commonly, but erroneously, considered to be injurious. *Abdominal* belts may be worn with advantage by persons of either sex requiring their support; but these are very different from stays or waist-bands. I find that an enterprising firm is advertising corsets for gentlemen (!), and a woodcut may be seen in some papers representing a young Adonis laced up in regular ladies' fashion, so that, if it were not for his luxurious moustache, one would certainly take the drawing to be meant for a woman. It is almost impossible to imagine that a man could ever make such a fool of himself.

With regard to the question whether inspiration should take place through the mouth or through the nostrils, I must enter my most decided protest against making it a practice to inhale through the mouth. There are, of course, occasions when this is unavoidable, as, for instance, where the singer has rapidly to take what is called a "half breath." But com-

plete inflation, or "full breath," is not the work of a moment; it takes time, and must be done gradually, steadily, and without the slightest interruption. This should *always* be done through the nostrils. The mouth was never intended for breathing, while the nose is specially and admirably adapted for this purpose. Not only can the lungs be well and quickly filled through this channel, but it is so cunningly devised that it acts at the same time as a "respirator," both purifying and warming the air before it touches the more delicate parts of the vocal organ. On the other hand, when inhaled through the mouth, the air carries with it, sometimes right into the voice-box, dust and other impurities, and its temperature is not materially altered. The consequence is that the throat and voice-box, when heated by singing or talking, or by hot rooms, are often exposed to cold, raw, and foggy winter air, and serious derangements of the respiratory organs are the natural consequence. If, moreover, this pernicious habit of breathing be once contracted, we shall soon also sleep with open mouths, thus parching our throats, and sowing the seeds of many a serious disorder.

OVER-WORK.

That the modern struggle for existence, the unremittent high-pressure of an age of competition and of incessant battling against time, proves fatal over and over again to many a private, and here and there an officer, in the great army of brain-workers, is nowadays a commonplace remark. Yet few who make it, seriously examine the real nature of the evil they deplore, or the means by which it may be cured or avoided. There is often, indeed, a vain-glorious complacency in the light talk about a "high-pressure" age. It is very unpleasant, very sad, all will admit, for those who suffer from it; but without breaking of eggs there will be no omelettes, and it is something after all to think that we are so much better workers than our sires; that "gentleman Leisure" has been slain and buried; and that "they of old time," compared with ourselves, were little better than ingenious idlers. One might fancy sometimes, to listen to such moralisings, that the giants of the Revival of Learning were simply so many graceful *dilettanti* who took to letters because fashions had changed, and the world begun to feel a surfeit of hard knocks, or that the Butlers, Newtons, Paleys of a later date were but a group of easy-going gentlemen who dallied with philosophy in sunny orchards, or gave occasional birth to happy thoughts in

evening strolls upon the yellow sands. There seems a little reluctance to admit that it may not be after all excess of work—an heroic martyrdom which demands its victims—but the way in which we do our work, which needs amendment; that the strain we feel comes not of giant burdens which only Titan shoulders can support with ease, but from the continuous irritation of ignoble “worry.” Yet if real over-work may boast its tens, it is “worry,” on the other hand, which has slain its thousands.

Upon this matter it is worth while to hear an expert preach to us in the *Nineteenth Century*. Dr. Granville, the author of more than one clever treatise on obscure diseases of the nerves and brain, will not allow that working at “high pressure,” so long as the effort made is “natural,” does any injury to the trained mind. If anything, “work at too low a pressure” is the more harmful; work which in the main is purposeless and desultory, and thus deteriorates the brain-power by excess of relaxation. Sometimes, it is true, the trained mind makes default; for brains reared up for modern competitive examinations, and fed in youth not on “the processes by which minds are developed,” but on “results,” crammed full of knowledge, but not educated, may prove badly prepared for independent exertion. “The work is not greater than that exacted from our predecessors, but we are less well prepared for its performance.” On the whole, however, sheer hard work, the work which is only resolute concentrated tension of all our energies towards a single aim, even though it be prolonged for a considerable space of time, will rarely carry exhaustion to the point where the natural reserves of reparative energy will fail to accomplish their appointed task.

Far otherwise is it when work is complicated with worry; when the rhythm of the mental movement is broken by irritation from without, and discord takes the place of harmony in the subtle sequence of thought vibrations. Injury which may prove fatal is then near at hand. And here the expert comes practically to our aid. Not every cause of worry can of course be banished. Worry *ab extra* may have sources beyond the worker's immediate reach. But the worry of work, “that which grows out of the business in hand,” which comes for instance from attempting uncongenial work, from trying to do too many things at once, or too much within a given time, is always possible and often easy to avoid. Such avoidance may involve certain sacrifices. But in comparison with the danger to be escaped, the sacrifices are really slight. For the worry which disorganises the mental action cannot be trifled with or set aside. Vainly do we seek aid in stimulants or

sedatives, or try to dominate the feeling of distaste and weariness by a supreme effort of the will. We may, indeed, thus force it into the background for a time. But the temporary disappearance of the more annoying symptoms means no more than the disappearance of pain in certain maladies when "the mechanism of sensation has become disabled," or of hunger when "starvation has assailed the seat of nutrition." The real evil—the deterioration of the brain tissues—goes on none the less actively because for a time we fail to notice it. And soon again the evil symptoms return. "The effort to work becomes daily more laborious, the task of fixing the attention grows increasingly difficult, thoughts wander, memory fails, the reasoning power is enfeebled; prejudice—the shade of defunct emotion or some past persuasion—takes the place of judgment; physical, nerve, or brain disturbance may supervene; and the crash will then come suddenly, unexpected by on-lookers, perhaps unperceived by the sufferer himself." Nor will the remedy then be easy. For it is a mistake to suppose in such a crisis that rest alone suffices to effect a cure. When the natural reserves of force have been once seriously attacked, they are liable not only to "waste," which rest might possibly allow them to make good, but to "depreciation," for which rest in itself can do but little. "The palsied faculties" will have "to be strengthened and incited to healthy nutrition by new activity, at first, perhaps, administered in the form of passive mental movement, and then induced by appropriate stimuli applied to the mind." Work that is orderly, pleasurable, unhurried, can alone repair the ravages which have been wrought by work over which the mind has worn itself away like an engine working with heated bearings.

So far Dr. Granville, in a lay sermon, which most brain-workers would do well to lay to heart. Yet one little moral may, perhaps, be added. The worker is not always master of his state; and worry may be forced upon him against his will. A little consideration may often smooth the path of those weaker toilers whose overthrow is easy to bring about, but whose restoration may be difficult to impossibility.—*Graphic*.

Give thanks, heart, for thy rootless flower of bliss,
Nor think the gods severe though thus they seem;
Though thou hast much to bear and much to miss,
Whilst thou thy nights and days to be canst deem
One thing, and that thing veritably this—

The imperishable memory of a dream.—B. P. MARSTON.

A LONG SLEEP.

Early in February last, a young man, a stranger, was discovered in what seemed to be profound sleep in the sitting-room of a country tavern near Allentown, Pennsylvania. He could not be roused, and was sent to the Lehigh County Poorhouse. A small devotional book found in his pocket bore on a fly-leaf the name Johann Gyumbere, written in German script. On the opposite page was written "Saros Cometat, Post Raslavidz, Austria." It was inferred that the man was from Saros, a county in Hungary, and that his name was Gyumbere. He has since been known as the sleeping Hungarian, and his long coma or trance has attracted the attention of many physicians, as well as much popular interest.

Until April 22 he had to be fed with liquid nourishment only. On that morning, the seventy-first day of his sleep, he arose from his bed, dressed himself, and sat down on a chair, staring wildly about the room. The attendant placed him in bed again, and went down after his breakfast. On his return Gyumbere was sitting up in the same chair, looking deathly pale, and with his eyes wide open. He was given something, but instead of eating freely, as usual, he seemed to have difficulty in swallowing, and ate very little.

He kept his eyes open all day and showed some signs of intelligence, but could not speak. Later he fell asleep and his attendant left him for a moment. Thereupon Gyumbere rose, locked the door, opened the window, and jumped out, falling twenty-five feet. He was found lying on the ground near a high fence, ten feet or so from the window. He was somewhat bruised, but not seriously hurt. For four days he continued to rise from his cot of his own accord, but never spoke. The physician of the almshouse reported that during the four days of his wakefulness he was weak and feverish. His eyes were staring, but continually open. He acted like one delirious during a fever. On one occasion, when his eyes were held open, Dr. Erdman repeatedly threatened him with clenched fist, and every time he did so the patient laughed. This convinced the physician that he could see. When a flute was played in the room, Dr. Erdman noticed that the patient's feet moved in a manner that suggested dancing.

Hopes were expressed of his speedy recovery; but on April 26 he relapsed, closed his eyes, and did not open them until May 20, when he spoke, a flower having been held to his nose. Six hours after he closed his eyes again, and kept them shut until late of the night of July 31, when he was

roused by a Pole, who spoke to him in Slavonic. Subsequently he sat up and told his story, which confirms the report published by the *Jeffersonian*, of Charlottesville, Va., some months ago, with regard to the victim of a practical joke at that place some time last summer.

His recollection of events shows a complete gap between the time of his falling asleep in the tavern and some day about four weeks ago, when he began to realise again that he was living. He knew nothing of his fall from the window, or of an abscess which formed on his head during his sleep. Altogether, the case is a curious one, and the report of the conditions and progress of it by Dr. Erdman, the almshouse physician, is likely to be of considerable interest.

LIGHT BEHIND THE CLOUDS.

The night is dark, my love, he cried,
No single star can be espied
From horizon to horizon ;
No ray nor glimmer far and wide
The longing eye may rest upon.

Patience, dear love, she whispered soft,
Though all is dark and black aloft,
Behind those clouds the bright stars shine,
As thou hast seen them shine so oft :
Then wherefore let thy heart repine ?

For soon the spirit, wind, shall come
And break this heavy pall of gloom,
And bright Urania and her train
Shall then the cloudless vault illumine
With their bright, hopeful eyes again.

A PURPOSE is always a companion. An earnest purpose is the closest of companions. To fulfil duties is more than to enjoy pleasures : it carries its own reward. There is no bitter loneliness for those affectionately devoted to blessing their fellow-creatures. The keeper of the lighthouse, when night settles around him, and the tempest holds revelry, and he looks out on the ghastly glare of the breakers, and hears the shrieking of the storm fiend, finds good company in the thought that the friendly light he trims will warn endangered crews of their peril, and perhaps save them from death. Gifted souls find solace and companionship in their works.—W. R. ALGER.

LITTLE KATE AND I.

AN AMERICAN BRAKEMAN'S STORY.

We didn't wait for an income to marry on, little Kate and I. We had no rich relations to leave us legacies or to send us pearl necklaces, diamond ornaments, or thousand-dollar bonds for wedding presents. I was simply a brakeman on the Eastern Michigan Railway, a long and lonely stretch of rails over desolate marshes, steep mountain grades, and solitary sweeps of prairie land; she was the bright-eyed waitress in one of the restaurants along the line. But when I fell from the platform, when the great accident happened—you've heard of the Great Accident, I suppose, when there was such a shocking loss of life—it was Kate's care, and nothing else, that brought me back into the world I had so nearly quitted for good and all!

"I would have done it for anybody, Mark!" said she, when I tried to thank her.

"Would you?" said I. "But it isn't everybody that would have done it for me, Kate!"

So I asked her to marry me, and she said "Yes." And I took a little cottage on the edge of the Swampscot woods, and furnished it as well as I could, with a red carpet, cheese-cloth curtains at the windows, a real Connecticut clock, and a set of walnut chairs that I made myself, with seats of rushes, woven in by old Billy, the Indian, who carried his baskets and mats round the country, and Mrs. Perkins, the parson's wife, made us a wedding-cake, and so we were married. Pretty soon I found out that Katie was pining a little.

"What is it, sweetheart?" said I. "Remember, it was a contract between us that we were to have no secrets from each other! Are you not perfectly happy?"

"Oh, yes, yes!" cried Kate, hiding her face on my shoulder. "But it's my mother, Mark. She's getting old, and if I could only go East to see her, just once, before the Lord takes her away!"

It was then that I felt the sting of my poverty most. If I had only been a rich man to have handed her out a cheque, and said "Go at once," I think I could have been quite happy.

"Never mind, sweetheart," said I, stroking down her hair. "We'll manage it, after a little. We'll lay up a few dollars, from month to month, and you shall go out to see her before she dies."

And with that, little Kate was forced to be content. But

there was a hungry, homesick look upon her face which it went to my heart to see.

"If I were rich," I kept saying to myself. "Oh, if I were only rich."

One stormy autumn night we were belated on the road, for the wind was terrible, shaking the century-old pines and oaks, as if they were nothing more than tall swamp grasses, and driving through the ravines with a shriek and a howl, like a whole pack of hungry wolves. And the heavy rains had raised the streams so that we were compelled to go carefully and slowly over the bridges, and keep a long look ahead for fear of accidents.

I was standing at my post, in front of the second passenger-car, stamping my feet on the platform to keep them warm, and hoping that little Kate would not be perturbed at my prolonged absence, when the newsagent came chuckling out.

"We're to stop at Stumpville Station," said he.

"Nonsense," said I, "I know better. This train never stops short of Waukensha City, least of all when we are running to make up for lost time, as we are to-night."

"Oh, but this is an exceptional occasion," said Johnny Mills (which was the newsagent's name), "we're going to put an old woman off. She has lost her ticket, she says. More likely she never had one. Goes on as though she'd had her pocket picked."

"It's 'most a pity, isn't it, to put any one off to-night?" said I, "Least of all at such a lonely place as Stumpville Station, where there are only two houses and a blacksmith's shop."

"Yes, I know," said Mills, adjusting the newspapers that he carried in a rubber case under his arm. "But the Superintendent of the road has got out a new set of instructions, and he's that particular that Jones wouldn't dare to overlook a case like this. There's been so many confidence games played on the road lately."

"Which is the one?" said I, turning to look in at the end window of the car, which was at the rear.

"Don't you see? That old party at the back of the two fat women in the red shawls. She's haranguing Jones now."

"I see," said I. It was a little old woman in a black silk poke-bonnet, a respectable cloth cloak, bordered with ancient fur, and a long green veil, who was earnestly talking and gesticulating with the conductor. But he only shook his head and passed on, and she sank back into a helpless little heap behind the green veil, and I could see her take a small handkerchief from her small basket, and put it piteously to her eyes.

"It's too bad," said I. "Jones might remember that he once had—if he hasn't got now—a mother of his own."

"And lose his place on the road," said Mills. "No, no, old fellow, all that sort of thing does very well to talk about, but it don't work in real life."

So he went into the next car, and the signal to slack up came presently. I turned to Mr. Jones, the conductor, who just then stepped out on the platform.

"Is it for that old lady?" said I. He answered "Yes." Said I, "How far did she want to go?" "To Swampscot," said he.

"You needn't stop, Mr. Jones," said I. "I'll pay her fare."

"You!" he echoed.

"Yes, I," said I. "I'll take her to my own house, until she can telegraph to her friends, or something. My wife will be good to her, I know, for the sake of her own old mother out East."

"Just as you please," said Mr. Jones. "But when you've been on the road as long as I have, you'll find that this sort of thing doesn't answer."

"I hope I shall never be on the road too long to forget my Christian charity," I answered, a little nettled. And I took out my worn pocket-book and handed over the money.

We did not stop at Stumpville Station, after all, but put on more steam, and ran ahead as fast as it was safe to drive our engine—and when, a little past midnight, we reached Swampscot, where we were due at half-past seven, Pierre René, the Frenchman, came on board to relieve me, and I helped my old lady off the train, flat-basket, travelling-bag, and all.

"Am I to be put off after all?" said she, with a scared look around her.

"Cheer up, ma'am," said I. "You're all right. Now, then—look out for the step! Here we are."

"Where am I?" said the old lady.

"At Swampscot, ma'am," said I.

"And you are the kind man who paid my fare?" said she.

"But my daughter and her husband will repay you, when—"

"All right, ma'am," said I. "And now, if you'll just take my arm, we'll be home in a quarter of an hour."

"But, said she, "why can't I go directly to my destination?"

"It's middling late, ma'm," said I. "And houses don't stand shoulder to shoulder in Swampscot. My nearest neighbour is a mile and a half away. But never fear, ma'am, I've a wife that will be sure to bid you welcome, for the sake of her own mother."

She murmured a few words of thanks, but she was old and

weary, and the path was rough and uneven, in the very teeth of the keen November blast,—and talking wasn't an easy task. And presently we came to the little cottage on the edge of the Swampscot woods, where the light glowed warmly through the Turkey-red curtains.

"Oh, Mark, dearest, how late you are!" cried Kate, making haste to open the door. Come in quick, out of the wind. Supper is all ready, and—but who is that with you?"

In a hurried whisper I told her all. "Did I do right, Katie?" said I.

"Right! Of course you did," said she. "Ask her to come in at once; and I'll put another cup and saucer on the table!"

Tenderly I assisted the chilled and weary old lady across the threshold.

"Here's my wife," said I. "And here's a cup of smoking hot coffee, and some of Katie's own biscuits and chicken pie! You'll be all right ma'am, when the cold is out of your joints a bit!"

"You are very, very welcome, ma'am," said Kate brightly, as she advanced to untie our visitor's veil, and loosen the folds of her cloak. But, all of a sudden, I heard a cry, "Mother! oh, mother!"

And looking around, I saw Kate and the old lady clasped in each other's arms.

"Hold on, Kate!" said I, with the coffee-pot still in my hand, as I had been lifting it from the fire. "This is never—"

"But it *is*, Mark!" cried out Kate, breathlessly. "It's mother! my own mother! Oh, help me, dearest, quickly; she has fainted away!"

But she was all right again presently, sitting by the fire with her feet on one of the warm rug cushions, which Kate had knit on wooden needles, and drinking hot coffee. It was all true. The unfortunate passenger whose pocket had been picked on the train, and to whose rescue I had come, was no other than my Kate's own mother, who had determined to risk the perils of a journey to the far West to see her child once again!

And she has been with us ever since, the dearest old mother-in-law that ever a man had, the comfort of our household, and the guardian angel of little Kate and the baby, when I am away on my long trips!

And little Kate declares now that she is "perfectly happy!" God bless her—may she never be otherwise!

Poetry.

THE DIVINE HARPER.

On the hill-top stands a castle,
All its windows gleaming red,
While above the eastern mountains
'Gins the moon her light to shed.

Sounds of feud and lamentation
Break upon the silent eve—
Sounds of anger mixed with weeping
Making nature's heart to grieve.

In the castle all is uproar,
Broken up the festival,
For a traitor foul and cunning
Has bred treason in the hall.

Angry lours the kingly visage,
Knows he not whom he may trust ;
Guests in wild dismay uprisen
Seize their blades with vengeful lust.

Women shriek, and rushing forward
Strive to calm their wrathful lords,
When a music sweet as sea-winds
Makes them droop their itching swords.

Softly through the banquet chamber
Soundeth soft a harp divine,
Making hearts towards each other
With forgiving ruth incline.

Then the king : " The serpent traitor
From our midst hath crept in fear ;
Call within that noble harper,
It is well he should be here."

Straight before the kingly presence,
Stept the harper undismayed,
And with all their gorgeous trappings
Was not one like him arrayed.

Form and face and brow majestic,
Eyes to hold a host in awe,
Voice that bids the troubled bosom
Beat to its harmonious law.

Gently with inspired fingers,
Touched he now the tuneful strings,
Till with rapt soul-stirring music
All the gilded chamber rings.

Stept the king down from his daïs,
Bowed before the minstrel guest,
Said : "Thou shalt be ruler o'er us ;
Thou can'st wield the sceptre best."

Sounds of gladness fill the castle,
Evermore the harp resounds,
And among the joyful people
Sweetest concord aye abounds.

S.

Facts and Gossip.

THE results of an inquiry into the subject of myopia in schools are given in a recent number of the *Elsass-Lothringische Volksschule*, showing that myopia is greatly spreading amid the boys and girls of the German schools, the mischief being more marked as the children get up into the higher classes of the schools. The number of short-sighted in the elementary classes was from 5 to 11 per cent. (the examination embracing 10,000 children); in the higher schools for girls the proportion was from 10 to 24 per cent. ; in the *realschulen*, between 20 and 40 per cent. ; in the gymnasias, between 30 and 55 ; and in the two highest classes of all, between 35 and 88 per cent. A physician at Tübingen has found in an examination of 600 students of theology 79 per cent. suffering from myopia, and he attributes this frequency to the small, crabbed print of the dictionaries. No doubt, also, a large proportion of the children's short-sightedness arises from defective living and bad sanitary conditions. In connection with this branch of the subject may be mentioned the report of a society at Leipsic for enabling children under this condition of life to be sent either to the seaside or the country. During 1880 there were 131 children sent away—viz., 67 boys and 64 girls. Of these, 119 were forwarded to the Ergerbirge, and the remainder to the baths at Frankenhäusen, in Thuringia. During the six weeks of the stay the average weight of each child increased to about 1½ kilogramme, the measurement of the chest in nearly every case was also increased, and the sight of many perceptibly improved. The expense of the visit per child was about £2 13s.

COMMENTING upon the remarks of one of those daily papers that take upon themselves to decide finally and authoritatively on every subject mundane and supermundane, the *Lancet* says :—"It is not surprising to find the unlearned in things medical unable to under-

stand that brain development, which of course is generally a matter of heredity, determines character. Such however is, and must needs be, the fact. Whether the mind is something outside matter which acts through or by the brain, as a musician may use a musical instrument, or whether, as some think, what we call mind is simply brain function, it should be manifest on consideration that upon the quality and conformation of a man's brain must depend his mental capacity; and, consequently, also his characteristics, both intellectual and moral. We are not disposed to urge specialties of development as excuses for conduct, because, given an average degree of intelligence and fairly strong will-power, the individual is clearly responsible for his actions; but it must not be forgotten that his instincts of right or wrong, and the faculty of judgment with which he distinguishes between good and evil, will be acute or dull in proportion as his brain is developed. The mind is in a large sense the character of a man, and as directly dependent on the physical growth of his brain as the speed of a racehorse is dependent on its muscular development. This is not sufficiently recognised, and because it is not we every now and again find silly remarks in print such as the following: 'The convolutions of the brain may have something to do with the difference between mediocrity and genius, but at present they are not recognised in the law courts, and it is difficult to see how they can be.' With such weak and wide moral reflections as that 'it would be scarcely satisfactory to a pickpocket to have his brains (*sic*) examined, in order to prove to those he left behind that he really could not help being a thief!' And yet the facts are sufficiently plain and simple—so plain and simple that anyone should be able to understand them."

WHAT does the halfpenny *Echo* think of that?

THE PLEA OF KLEPTOMANIA.—When a thief himself raises a plea that he is suffering from kleptomania, it is only natural that his judges should regard the assertion as a mere excuse. In the great majority of instances, doubtless, this view of the defence would be just. It is, however, right to bear in mind that self-consciousness of an uncontrollable—or uncontrolled—impulse to steal is not incompatible with innocence of intentional wrong-doing. On the contrary, it is characteristic of certain forms of the malady, of which kleptomania is one variety, that there *is* self-consciousness, not only of the act of committing the offence, but of its evil nature. The power to discriminate between right and wrong exists, and the wrong is done consciously, and yet the offender is irresponsible so far as being the victim of a morbid impulse can make him so. If society determines to inflict a penalty for the sake of example, it should be recognised that the agent is punished, not the principal. We may think it wise to chastise the sufferers from mental disease, that is an intelligible position; but it is not intelligible, or intelligent, to punish them in

ignorance of their real condition. The choreic patient will strike his best friends—in certain forms of the disease—and to all appearance he will strike them intentionally, but all the while he is struggling against the impulse; and the energy he throws into the effort to restrain himself only makes the matter worse. There is, or was recently, a choreic patient in London afflicted with a variety of this complaint, in which the choreic movements are formulated so as to closely resemble a distinct squaring of the fists, with intent to attack a bystander. When this man is accidentally touched, unless his hands happen to be in the pockets of his coat—the only safe place—he will instantly turn on the person who has touched him, and with all the appearance of purpose commence to fight him. This poor fellow is not insane, but he has not the slightest power to control his actions when he is excited. The energy liberated from his nerve centres travels along the lines of least resistance, and produces the organised movement. This is an example of true “barrel-organism.” What in this case takes place in the lower centres may, in certain cases, take place in the higher cerebral centres, and issue in a mental chorea, which will so closely resemble intentional action that no lay judge or jury can distinguish between the two. Nevertheless, in the one case the action is morbid and not only involuntary, but against the will. The time will come when science must be heard in the councils of the State, and have a voice in personal as well as general nitation.—*Lancet*.

BRAIN-WORK AND THE HEART.—Over-working of the brain is now so common that it is interesting to find the subject taken up by men of science. M. Gley, a French biologist, has been engaged recently in studying the connection between the action of the heart and intellectual work involving strain on the attention. The most important result which he has arrived at is that when the attention is engaged by intellectual exertion there is a decided increase of cerebral circulation, or, in homelier words, an increased flow of blood to the brain, accompanied by an acceleration of the rhythm of the heart. The rhythm, in fact, seems to quicken in direct ratio to the intensity with which the attention is engaged. When a new and unfamiliar study—for example, geometry—was undertaken by M. Gley, his pulse was found to have become much faster than when he confined his reading to philosophy—a subject of which he knew a good deal previously. With the quickened pulse the carotid artery running to the brain was observed to dilate, and the pulse in it became dicrotic, or having a double beat. It follows, then, that brainwork on a subject which has become familiar to us by habit and early training is far less trying to the system than a study which is new to us. Hence it is that routine work becomes in time very easy, and agreeable from its easiness. The moral obviously is that the mental cobbler should, on the whole, “stick to his last,” and not wear out his life by ever attempting fresh lines of effort and acquirement.

SOME observations on hearing have been lately recorded, which suggest striking analogies between that sense and vision. Herr Urbanttschitsch, in *Pflüger's Archiv*, indicates a way of demonstrating "fatigue" of the ear. Two tubes having been adapted to the ears so that a given sound equally affects the latter, a strong tuning-fork is vigorously sounded and brought to the mouth of one tube for a few seconds. It is then deadened somewhat, but not wholly, by touch. The ear on that side then fails to catch the weak sound, but if the fork be brought to the other tube the sound is heard distinctly. The fatigue passes off in two to five seconds. A weaker tone of different pitch from the strong one is heard equally with both ears. Again, the same author has experimented with regard to subjective sensations of sound occurring after a strong tone has been heard for a little. The after sensation may come close upon the other, or be separated from it by a short pause. In the latter case (the only one studied as yet by the author) the pause varies up to 15 seconds; then the sensation is revived, generally for five to ten seconds, then a pause and a renewal of the sensation, &c. Some persons have only one after-sensation, while others have as many as six or eight. The time thus occupied (from cessation of the objective tone) is seldom over two minutes.

A CORRESPONDENT of the Cleveland (Ohio) *Leader* has described some experiences of his own in hearing, which remind one of colour blindness. Certain sounds he never hears—e.g., the song of birds. A room might be full of canary birds all singing, but he would never hear a note, though he would hear the fluttering of their wings. Nor does he hear the hissing sound of the human voice. He was taught to make it, and he never makes it without effort. About a quarter of the sounds of the human voice he fails to hear; and he has to be guided a good deal by the motion of the lips and the sense of remarks made. The upper notes of musical instruments he misses, but he hears the lower ones. In the Pennsylvania Medical Society, once more, Dr. Turnbull has recently called attention to the danger to life and property arising from deafness on the part of railway men, a considerable minority of whom have ear-affections resulting from the conditions of their work. After citing personal observations and the evidence collected by Moon and Hirt, he recommended that all candidates for railway service should be carefully tested as to hearing by the company's physician, who should also report to the superintendent each case of deafness discovered in locomotive men, so that they might be transferred to positions where perfect hearing is less important.

IN the Island of Rio there are wild men who live in trees, and who have no language but cries; and in Sumatra there are men who live in the forests, with whom not only the Europeans, but the Malays themselves can have no intercourse. They stay in the woods, and

subsist by the chase. They hunt tigers, not with the gun, but with arrows, which they blow out of a tube with such force, and which are so keen of point and touched with such deadly poison, that a wound is almost immediately fatal. Their tiger skins or elephant tusks they bring for barter. They never sell anything, for money is about the most useless thing they can have. They cannot eat it, nor drink it, nor wear it. But, as they have wants, they exchange. Yet they themselves are never seen. They bring what they have to the edge of the forests, and leave it there; and the Malays come and place what they have to dispose of, and retire. If the offer is satisfactory, when they return again they find what they had brought gone, and they take what is left and depart. If not, they add a few trifles to tempt the eyes of these wild men of the woods; and so at last the exchange is effected, yet all the while the sellers keep themselves invisible.

THERE are certain evil consequences of the civilized mode of feeding by appetite on the basis of habit, which it may be useful to point out. First, separating appetite from hunger, and developing it as an independent sense or function, there naturally springs up a fashion of life which may be described as "living to feed." The purveyor of food trades on the tastes and cultivated longings of the consumer, and the consideration what to eat and what to drink comes to occupy a place in the self-consciousness which it was probably not intended to fill, and in so far as this is the case man is more animal, and less spiritual and intellectual, than he ought to be; although it may be conceded that the refined taste of cultivated nature is less offensive than the simple voracity of the savage. There are some who contend that man is the gainer by the development of his appetite. If this be so, the gain is a good not unmixed with evil. Another drawback is that by severing appetite from hunger we lose the indication of quantity which nature gives with her orders for food. The man who eats a regulated number of meals daily, with a duly stimulated and organised habit, probably eats much more in the twenty-four hours than his system requires, or the organism as a whole is constituted to deal with.

THE following recipe for making oatmeal porridge will be appreciated by some of our readers. Put 2 lbs. 3 oz. water into a stew jar (having a lid with a small hole in it), stir 5 oz. coarse oatmeal gradually into the water; let it stand about eight hours; put it on a fire grate or in an oven, and let it boil, giving it a stir with a spoon now and then. When the surface of the mixture becomes smooth, which happens in an hour or more, it is done, and can be eaten by itself or with sugar and milk out of a saucer, either warm or cold. The quantity being about sufficient for five persons.

WHAT is the natural food of man? asks the *Popular Science Review*. As an abstract truth, the maxim of the physiologist Haller is absolutely unimpeachable: "Our proper nutriment should consist

of vegetable and semi-animal substances which can be eaten with relish before their natural taste has been disguised by artificial preparation." For even the most approved modes of grinding, bolting, leavening, cooking, spicing, heating, and freezing our food are, strictly speaking, abuses of our digestive organs. It is a fallacy to suppose that hot spices aid the process of digestion; they irritate the stomach, and cause it to discharge the ingesta as rapidly as possible, as it would hasten to rid itself of tartarised antimony or any other poison; but this very precipitation of the gastric functions prevents the formation of healthy chyle. There is an important difference between rapid and thorough digestion. In a similar way, a high temperature of our food facilitates deglutition, but, by dispensing with insalivation and the proper use of our teeth, we make the stomach perform the work of our jaws and salivary glands; in other words, we make our food less digestible. By bolting our flour and extracting the nutritive principle of various liquids, we fall into the opposite error; we try to assist our digestive organs by performing mechanically a part of their proper and legitimate functions. The health of the human system cannot be maintained on concentrated nutriment; even the air we inhale contains azotic gases which must be separated from the life-sustaining principle by the action of our respiratory organs—not by any inorganic process. We cannot breathe pure oxygen. For analogous reasons, bran flour makes better bread than bolted flour; meat and saccharine fruits are healthier than meat-extracts and pure glucose. In short, artificial extracts and compounds are, on the whole, less wholesome than the palatable products of Nature. In the case of bran flour and certain fruits, with a large percentage of wholly innutritious matter, chemistry fails to account for this fact, but biology suggests the mediate cause: the normal type of our physical constitution dates from a period when the digestive organs of our (frugivorous) ancestors adapted themselves to such food—a period compared with whose duration the age of grist-mills and made dishes is but of yesterday.

A STRANGE phenomenon in connexion with vision is reported from Litchfield, Conn. "Six months ago the girl's eyes were straight and natural; now she is cross-eyed. She sees things just the same as she always did, but let her close her right eye and look out of her left, and she can see a distance of eight or ten miles, and distinguish things as well as an ordinary person can only sixty rods away. The distant hills are brought close to her, and she can see the farmers getting in their hay, even counting the number of heaps, which, in an air line, are seven miles from her. To test her, a field-glass was used, and her sight far out-reached any object that could be seen with the glass. If she closes her left eye, and looks out of the right, then she cannot see anything except close to her, but that eye is a perfect microscope. She is able to distinguish things that the natural eye cannot see. The point of a needle looks as blunt as a crowbar, and it is wonderful to hear her describe the beautiful colours of flies and other insects. To her the hairs on a person's head look as large as darning needles, and in the finest piece of linen she can count the threads as easily as another can count bean-poles. The moment she opens both, she sees again as any other person." We give this strange fact on the authority of an American paper.

JAMES ABRAM GARFIELD.

(DIED—SEPT. 18, 1881.)

Out of the turmoil, out of the din,
Away from the passion and strife, and sin,
He lies at peace with the dead of his kin,
The President slain !

Like to a king he went to his rest,
The thoughts of a myraid going with him west,
Saying a prayer and pronouncing him blest,
While the nations wept !

Like to a king !—and yet where is there one
Whom the despot death could strike from his throne,
And call forth such grief as the great chief hath done
From high and from low ?

Greater than king ! yea, greater by far
Than those that are kings by the fortune of war,
Whose thrones are upheld by the thund'rous car
And bayonets cold !

He sprung from the ranks, where each mother may sing
To her prattling babe : " Sweet, prune thy bright wing,
'Tis thine to be great as the greatest king
Who sits on a throne !"

And mothers will point in the days to come
To the murdered President's lowly tomb,
And tell the tale of his grievous doom
To their list'ning young ;—

Bidding them pattern their life by his,—
Who earned his own bread, and accounted this
The true man's worthiest honour and bliss—
To be tax on none !

Build him a pile on the lake's sad shore,
Where the wild weeds climb and the wild birds soar,
That his fame may flourish for evermore
A beacon to all !

Let it be high as he was in mind,
Broad as his sympathy with his kind,
And simple and sweet as the loves that twined
His life-way about.


So it shall be for the nation that bred him,
For the world that with noble aspirings fed him,
And for the great cause of right that shed him,
A promise and hope !

A. T. S.

THE
Phrenological Magazine.

NOVEMBER, 1881.

MRS. GARFIELD.

HE head of Mrs. Lucretia R. Garfield, widow of the late President of the United States, indicates a strong and varied character. She has a brain fully sustained by a well-balanced organization and a strong constitution. She is of medium size, rotund in form, self-contained in disposition, and possessed of a fair blending of the masculine and feminine type and tone of mind. Through the influence of her feminine nature, and her strong affections and domestic disposition, she shows the qualities of the woman, wife, and mother to perfection; and she married, not to be supported, but to be help and be a helpmate to her husband.

Her head and face are an interesting study. The expression of the face is very pleasant, and indicates an amiable disposition, high culture, mental harmony, and presence of mind. The mouth betokens rare affection, friendship, love of home and place, cheerfulness, application, together with perseverance and a fair amount of decision. The face, as a whole, gives evidence of great strength of constitution, and a full development of all the vital functions, as though she came of a healthy, long-lived family. Some of her ancestors have probably lived to a good old age.

The well-developed base of the brain indicates a good foundation on which to build. The organs which minister to animal life and vitality are well represented. The width of the brain in the region of the temples, betokens the presence in strength of the organs that give ingenuity, versatility of talent, taste, and constructive power. Order and Calculation, joined to Constructiveness, give her extra ability to make estimates and calculations, to organize and to arrange work according to some plan. Her large Ideality, acting along with the organ of Constructiveness, also large, gives breadth

and scope to her mind and vividness to her imagination, intensifying her desire to acquire knowledge and to have things in taste around her. Her head being broad from ear to ear shows that she possesses, in a full degree, the qualities which give force of character, power of endurance, courage and ability to bear up under trials and difficulties.

The forehead is prominent and fully developed in most of its parts, betokening general strength of intellect, originality, soundness of judgment, and scholastic ability. She has a good memory, especially of events, history, and all that relates to her own and her family's experience. She has a full but not an extravagant command of language; indeed, she will be more known among her intimate friends for thought than for talk, although by no means lacking in conversational ability. She has some of the powers that go to make a good artist, and should be almost remarkable for her exquisite sense of form and proportion, as well as for her power to make, adapt parts, and construct.

Although the social brain is not indicated in the portrait, we are able to judge of her character in this respect from her face, according to which, all the social and domestic feelings are full or large in development.

The head is high in the coronal region, which favours a high-toned moral nature. Mrs. Garfield, according to her head, could not be indifferent to matters of a moral and religious character. She is devotional, respectful, sympathetic, just, and honourable in a high degree, or she belies her phrenological developments. It falls to the lot of few to be so well balanced all round as she is, and one whose good fortune it is to get such a wife, secures a helpmate indeed.

When, in 1848, James Abram Garfield, the late President of the United States, then a tall, ungainly lad of eighteen, was attending the Geauga Academy, at Chester, Ohio, there was, at the same school, the daughter of a farmer, whom one who knew her then, describes as "a quiet, thoughtful girl, of singularly sweet and refined disposition, fond of study and reading, and possessing a warm heart and a mind capable of steady growth." This was Lucretia Rudolph, then in her seventeenth year. James Garfield was awkward and bashful, but he noticed and admired the girl, and some slight acquaintance sprang up between them. There was no romance in it, and there could have been no thought of marriage in the mind of the lad who, during this very term in which he first became acquainted with his future wife, had to lie in bed while his clothes were being mended.

In 1851 he presented himself at the Eclectic Institute at Hiram, in Portage County, and having obtained admittance to the room where the Board was sitting, he said: "Gentlemen, I want an education, and would like the privilege of making the fires and sweeping the floors of the building to pay part of my expenses." The Board took the young man at his word, and after two weeks probation, during which



Garfield lighted the fires and swept the floors to the satisfaction of the Board, he was duly installed as janitor of the Institute.

At the Eclectic Institute Garfield was again brought in contact with Lucretia Rudolph, who was also attending the

Institution. A mutual attachment sprang up between the two, and though the prospects of the young man at that time must have seemed to Miss Rudolph unpromising enough, she accepted his proffered love, and promised that when he had graduated and was in a position to support a wife she would marry him. In 1856, Garfield commenced life on his own account. He was twenty-five years of age; he possessed a score of college text-books, a college diploma, a good education, and a magnificent physique. His indebtedness amounted to four hundred and fifty dollars. He was elected teacher of Latin and Greek in the Institute at Hiram, where he had been janitor, and he was now in a position to offer a home to the young lady of his choice. Miss Rudolph knew his poverty, but she also knew the character of her lover, and she was ready to fulfil her promise.

On November 11, 1858, they were married at the house of the bride's parents, and in the varying and changeable fortunes of the subsequent years, she was the faithful and devoted wife, the wise counsellor, and the loyal friend of her husband. She was by no means unfitted for her station as a professor's wife. She was a good scholar in Latin, Greek, German, and French, was well read in philosophy, mathematics, and general literature, and could aid the young professor in the preparation of his lectures by collecting facts and references for his use. One who was acquainted with the bride Mr. Garfield brought to Hiram, describes her at this time in the following words: "She was of medium stature, with dark hazel eyes, wavy brown hair, a rounded form, and an expression about her mouth denoting a calm, sweet temper, combined with a strong will. With all her learning, she was still a quiet, trusting, affectionate country girl, who had but one hero in life—her lover and husband, but one ambition—to hold fast his love, and make him a happy home. The marriage was a happy one. Indeed, it could hardly have been otherwise, for there was congeniality of taste, a high ideal of a pure home life, identity of religious belief, a great love of study and culture, and a long-standing affection to base it on."

The Garfield family consisted of seven children, of whom five are living. The first-born, Mary, died while her father was absent from home, serving with his regiment in the war; the second, Harry, was born in 1866; then follow James, Molly, Irwin, and Abram. The youngest, Edward, died in Washington in 1876. Harry and James are preparing for college at St. Paul's School at Concord, New Hampshire.

Mr. Garfield had always had a strong desire to own a farm, and having paid off the mortgage on the little frame cottage,

and being a little ahead in money matters, this desire increased upon him. A farm of 160 acres was, he heard, for sale at Mentor, Lake County, and he made arrangements for its purchase. On the farm was an ancient and somewhat dilapidated farm-house, a story and a half high, and there the family removed in 1876. Things prospered on the little farm, and in 1879 it was found practicable to enlarge and modernise the house. Mrs. Garfield had considerable talent in architecture, which she had improved by study, and she now prepared the plans for the new house, the builders were set to work, and the present elegant but unpretentious dwelling was erected around and over the old one.

This is the home to which, in the crisis of the President's suffering, he pathetically entreated to be removed.

With Mrs. Garfield's devotion to her husband during his illness the public is well acquainted. She showed herself the loving, faithful wife, unfaltering in devotion, unshaken in courage, and unsparing in her exertions for her husband's welfare.

L. N. F.

WHAT CAN I BE?

Several boys were observed one day talking very earnestly together. They were just of the age when youths are generally taken from school and put to business. It was a rare school they were at; they had a teacher who was educated for, and by nature qualified to be, a teacher. He was not one of those who are hired by the month and who only teach to get their bread and butter, and care but little what becomes of their pupils after they leave school; but took a deep interest in those entrusted to his charge, and acted as though he felt that he was moulding their minds and training their bodies for the work of life. He made himself conversant with all their thoughts and actions, and was one with them in all their studies, in all their amusements, and in their griefs and disappointments. He looked carefully after their health, their habits, and their morals. Being in thorough sympathy with them, he had their perfect confidence, and no boy was long in the school before he became convinced that his teacher was employed for another purpose, and had something else to do than to watch, scold, and punish. The boys soon caught the spirit of their teacher and came to the conclusion that they were sent to school for some other purpose than to annoy their teacher and to see how many times they could avoid complying with the rules of the school without being found

out and punished, or how successful they could be in skimming over their lessons without fully understanding them. The teacher took particular care to explain to his pupils all about the organs and functions of their bodies, as well as all the qualities and faculties of their minds, and the need of using them legitimately, thus disposing them to place a high value on themselves, and stimulating their ambition to make the most of their powers.

It was out of school hours, and several of the boys were together and got to talking about one thing and another. Finally, one of them, John, straightened up, and said, "I wonder what I can be, anyhow? There cannot be much hope for me, for my parents and grand-parents were under-sized, not strong, having small bones, hands, feet, and neck rather small, with rather small chests and large heads. They were clever people, but could not do or endure much, so they have not amounted to much so far, and I am the only child in the family and much is expected of me, and they are always pleased to hear when I am at the head of the class. When I break down in health and have to go home, they make me well as quickly as possible and send me back to school, so as not to get behind in my class; but I find that these break-downs occur more and more frequently, and I do not recover so quickly. If I keep on in this way, I shall break down altogether; and as I have but one life to live, it is a matter of some importance to my parents that I should outlive them. Boys, which would be the best?—to get a good education and break down altogether in doing so, and go to an early grave, or to spend less time at my books and pay more attention to getting health and strength?" One of the boys spoke up, and said: "You had better live longer and know less, than to live shorter and know more." So said they all. The bright eyes of John sparkled as he said earnestly: "I've got it." "Got what?" asked the other boys. "Got an idea," he replied. "The teacher said that judicious exercise gives health, strength, and size. I shall stop going to school for the present and go to work, and take as great a variety of exercise as possible, and if I can, I will go to sea for a while and see if I cannot get rid of this headache and feverishness, and I will see if I cannot live to bury my father and mother instead of allowing them to bury me.

The second boy, George, said he was not afraid; study never hurt him, but work did. He did not like work any how, but he loved to read and study. His parents and grand-parents were robust and healthy, and got their living by their wits; but they could have done much better if they

had had a better education ; and, said he, "I am going to get a good education and see what my wits will do for me, for I have to get my own living. All father can do for me, with his nine other children, and more than half of them girls, is to give me an education."

The third boy, Henry, who had large hands, head, and feet, and was in every way above the average size for his age, said, "I do not intend to be one of your house birds, and sit on a bench all day with a pencil or pen in hand, making my brain hot with reckoning figures and such work. My parents and uncles and aunts were all large, tall, and strong. My father built most of the factories and storehouses in our town ; all the family are well, and eat heartily, and love to work, and I mean to get at it as soon as I can. If I can stay at school long enough to get education enough to be a builder, engineer, surveyor, or navigator, I shall do as much as I expect to in the schooling line ; the rest I will pick up as I go along. As soon as I am old enough, I shall be off to some new country and grow up with a new town, or I will study mining and prospecting till I find a good mine and make my fortune out of it. I see nothing but hard work before me, as was my father's case, unless I do something of the kind. Father has a house full of little ones, and I cannot expect him to do much for me, so I shall strike out for myself."

The fourth boy, Stanley, a handsome, rosy-cheeked boy, with a well-developed body, said he had not yet made up his mind what he should be ; one thing he did not intend to be, and that was a careless, shiftless man. He intended to make the most of his time for study, so as to prepare himself for the day when it should be necessary for him to adopt some profession. Perhaps he might become a doctor—for he thought that was the highest calling which enabled a man to benefit his fellowmen. Next to being a doctor he thought he should like to be a merchant, because it seemed to him a noble calling to send ships to and fro with merchandise to supply the wants of the world.

So the youths talked, each one finding he had a gift or inclination for one calling or profession or another. Presently the bell rang again for lessons, and the subject was dropped. But the subject was recurred to again and again, until the boys got to trying themselves, in order to test their various powers and capacities. As usual, their teacher was invited to take part in their counsels, and he aided them very much in their discussions. He showed them that they had but one life to live, and that they might as well try to make the most

of it. One way to do this was to make their business a pleasure instead of a toil. This could only be done by adopting a trade or profession for which they were qualified, and which, when thoroughly learned, came to them like play. He convinced them that this was possible, and that it was the only way of making the most of life. Most people, he said, spend a great deal of time and energy uselessly, because they look upon work as a great evil, to be offset as often as possible by a spell of play. They get no pleasure out of their work, and find it necessary to spend a deal of time, and much of their hard earnings, in seeking what they call pleasure, which generally costs the dearest of anything we buy.

Then each of the youths told the teacher what his ideas about the future were, and how he could best turn his hands and wits to account. He agreed with them so far that he advised them to test themselves, and offered to assist them to the extent of his power. What he did was to call in a doctor, a man who had spent his lifetime in the study of the human constitution both mentally and physically, for he said: "He is the one best able to tell you the worth and power of the instrument—that is your mental and physical organisation—you have to work with." The doctor took each boy separately, examined him thoroughly, questioned him as to his parentage and prospects, and lastly, inquired of the master what his conclusions were as to each boy's capabilities. This done, he gave his opinion as to the line of life each should follow. It happened in nearly every case to be curiously in accordance with the wishes of the youths themselves. But he cautioned them all to examine themselves well, and to make themselves as thoroughly acquainted as possible with the nature of the callings to which they thought of devoting themselves, so that they might be under no misconception thereto. "Then," said he, "having made up your minds as to what you can and would like to be, go to work with a will, determined to make yourselves as completely master of your respective trades or professions, whatever they may be, and you are sure to succeed. Ninety per cent., or more, of the failures in business, are the result of imperfect knowledge, and the lack of trained judgment, or else of an unstable, unsteady character." The result of this care and forethought was as might have been expected: each of the youths succeeded in the line of life which he had adopted.

L. N. F.

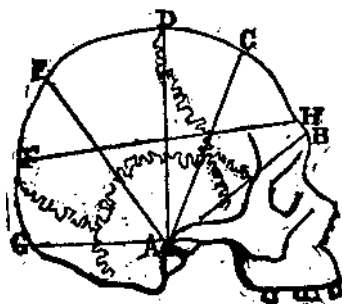
LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE VII.

(Dr. Spurzheim briefly recapitulated what he had said on the preceding evening, respecting the power of the love of approbation, and proceeded to make some general remarks on the powers situated in the occipital region.)

We have now finished the functions of the parts of the brain situated in the occipital region. To judge accurately of the force of these powers I should say, in a general way, look at the occipital region; see whether it is small or large, and you may know, by comparing this part of the head with the other, which will be most active. But to come more to particulars: be attentive to the occipital region, and you will find the upper part more developed in some than the lower. There is a great difference in this respect between some nations, particularly between the English and French; and you will find, generally speaking, in the English a greater mass of brain hereabout (the upper and back part) than you will in the French, the greater development of this region being, in them, at the lower part. A line being drawn from the ear to the upper and back part of the head, would show a larger radius than if carried horizontally backwards in the English, generally speaking, and the contrary in the French.



Outline of the Skull, showing the different regions.—Lines A B and A C indicate the extent of the intellect; A C and A E the extent of the moral; A E and A G the social; F H divides the moral from the basal faculties.

Now, without comparing one individual with another, the question is, in phrenology, whether such feelings are stronger than other feelings in the same person. To decide this, you must contrast the front with the back part of the head, and if you do not find the other organs developed in equal propor-

tions, you may be sure that these will be more active than the others. Again, if the other organs be not very active, and although the development should appear to be equal, these organs will generally be found to possess greater activity than others. If a man be of a nervous temperament, as it is called, he will be found to have these organs very active. Then learn the influence of the whole mass of the brain.

Would you not, on looking at this head, seeing that the upper part of the occipital region is more developed than the lower, say the love of approbation was pretty strongly marked in him? That was the fact. Seeing this head (showing another) might you not conclude that the mind would show the love of approbation, in proportion to the other feelings, strong, since the upper part of the cerebral mass is largely developed? Not that this part is developed so as to form a protuberance—and I hope you will all understand the distinction I made between a protuberance and development—but because the neighbouring parts are also large. You see the love of offspring, and attachment to places, also large. In a general way, we should say that these parts were large in proportion to the other parts of the head of this individual, and, therefore, more active. (Several other casts were shown, to illustrate the subject, large and full in the upper part of the occipital region.) I should say then, in order to estimate the powers situated in the occipital region, observe whether the base, the middle, or the upper region is most developed, because you find in some the base very narrow, in others the base very broad. Where the base is broad, and the upper part contracted, you will see the lower propensities more active than the others. As to the individual parts, you will recollect their functions, as I have already mentioned them, but I cannot speak here of action; I repeat this because it is important. Now as to Acquisitiveness, the wish to acquire, that is fundamental; but whatever we wish to acquire, to take possession of, depends upon a peculiar power, different from that of Acquisitiveness. Some men show a disposition to steal, to get unlawfully the things of others; some again will show a disposition to collect things about them according to their talents; some again show a talent to possess and to accumulate money; in all these persons the feeling of Acquisitiveness is active, but the peculiar application of the feeling does not depend upon it.*

* What the doctor wishes to say is that the manner in which Acquisitiveness manifests itself will depend upon other organs. With Veneration it may show itself in the collection of antiquities, with Ideality in the accumulation of works of art, and so on.

CAUTIOUSNESS.

I go now to new ideas. There are individuals who sometimes reflect well, and who at once resolve to act ; and there are others who can never come to a resolution ; they think of doing something, but they do not act. Some are so hesitating that it is almost impossible to get them to determine. Look at individuals who are careless, they will always say, if you advise them about anything, "Never mind"; and there are others who always say, "Take care"; and you will find, among scientific men, some who, in discussing any subject, will always have a "but." Look at such individuals, and observe the part of the brain situated here about, in the middle of the parietal bones, and see whether such individuals will hesitate or act as soon as the feelings give the impulse. I have spoken from the beginning of certain feelings destined to give impulses to animals and to man, called propensities, and now I speak of feelings which modify the lower propensities, which modify their actions.

If you see individuals very narrow here, you will not find that they hesitate so much as persons who are very broad here (the middle of the parietal bones). What would you think of such an individual (very broad in this part)? Look at the head from behind forwards, and you will see that the head is very large here ; try if you can get him to an immediate resolution, or whether he will not say, "Let me reflect upon this." See what he will do. There are nations known for their cautiousness, and you will find great breadth in this part of their heads. The man who does everything cautiously is sure to be broad hereabout. In women you find this part large, and it seems that nature has given them this power to watch over many of the other feelings with which she has endowed them, and you will find that the organ is proportionately broader in females than in men. If you reflect on what I stated before, you will remember that I said that the heads of men were broader, laterally, than those of women, and this is true, because the organs of Courage and Destructiveness are broader ; but in speaking of this individual cerebral mass, the organ of Cautiousness, it will be found broader in women than in men.

Certain animals have this feeling ; they do not act as soon as the propensity impels, but pause and take care as to what they do. Look at the roe ; being pursued, he pauses, looks about him, acts with care, and then starts off. Nature, probably, has given this power to animals, and in man we call it circumspection, from the Latin verb *circumspicio*, to look

about. The fox acts differently ; he does not start up and look about, but runs away to conceal himself. If you look at cautious animals, you will find this part of the head broader than in those which act with less care. Moreover, we find that certain animals place sentinels, and they are always broad in this part of the head. If you look at the hyæna, you will find this organ very little developed, and the same in the wolf, whilst in the roe and chamois it is very much so.

If this feeling be very predominant, then the individual becomes fearful, particularly if the lower feelings be but weak, so that if we speak of fear it must be combined with other conditions of the mind. Speaking of caution, I can speak of it alone, as it appears to be a fundamental feeling. From infancy you may observe, in some children, this feeling very strong, and if the feeling of courage be not active, they will always keep in the background and be timid, and you generally observe, in such children, this part predominant. Those who are of a melancholic temperament, and have been so from infancy, have this part largely developed, that is quite ascertained. These are the feelings which are common to men and animals, hence I have stated that, as far as these go, man is an animal. But man has great advantages over animals, because the different feelings I have spoken of are given to no other animal altogether, hence the great superiority of action furnished to man by having all these feelings congregated within himself, added to which, there are many others of still greater importance, which will hereafter be pointed out. Some animals have a great love of approbation ; our dogs and our horses show this ; there is the love of approbation remaining the same fundamentally, but modified in its action according to the circumstances in which the individual is placed.*

We come now to the upper region of the head, to the top—a part which deserves all the attention of phrenologists, and first we try to ascertain the proportion which the upper part of the brain bears to the lower. In looking at a head it is necessary, in order to arrive at this, to draw an imaginary horizontal line from the points I before described, so as to divide the head into two regions, and then you can compare them, and you will find that by far the greater number of persons have the base larger than the upper part. This is a

* The student will have no difficulty whatever in verifying the organ of Cautiousness (No. 11). It is generally very prominent in women and children, and the quality is as marked in their characters. A line drawn from the ear to the crown of the head passes through the middle of the organ, which almost invariably forms the broadest point in the upper portion of the head.

fact ; nobody can deny it. Go to nature, and you will be convinced of it ; look at mankind generally, not confining your attention to those who attend to the sciences only ; take both classes together, and compare the upper and front part of the occipital region and base, and you will find much more brain in the latter. Here are the specimens (pointing to those on the table) in which you observe by far the greater number as I have described. If you find the upper region as large as the lower, that is well, that is what we like in phrenology ; we like to have the upper as large as the lower : perhaps it may not be so good an organisation for the individual himself as for others. The delicate, soft, good feelings which we shall have to examine, have not strength enough when the animal feelings, which give energy to them, are wanting ; if we have not courage, determination, self-esteem, and so on, little good is done. In comparing the species which possess the same superior feelings, we find that they derive a certain degree of energy from the lower. The lower feelings may be larger, but provided that the upper are also well developed, that will do.

In speaking of the superior cerebral parts, we come to a very interesting subject, and one which is also very difficult. I shall speak of a feeling which has been called moral and religious, as far as these feelings appear to be dependent on the cerebral parts. If we look at the productions of artists in ancient times, we shall find that they have given to the superior beings—beings celebrated for their moral and religious actions—very high heads. Lavater has observed, that some persons who are bald are religious, but I do not say that every bald person is religious. However, if you look at the head designed by the ancient artists of the Saviour, you will see that it is very elevated, whilst the head of Judas is represented as quite depressed. (Casts were shown intended to represent the heads of these persons.) Which form would you like the best of these? Anyone by intuition almost would give the preference to such a forehead (pointing to one very elevated). It is always agreeable to see the cerebral mass full in the upper part, but it must be compared with the base ; and again, not only the elevation itself, but the surrounding development ought to be large, not elevated and tapering like a sugar-loaf ; we like to see not only a good elevation, but a good development of the circumference of the upper part. You know that I have stated already that I prefer breadth to elongation.

BENEVOLENCE.

We shall find the upper region the seat of the moral feelings. Study man from nature, and you will find that he is by

nature a moral and religious being ; he has feelings which invite him to listen to such considerations. If I speak of moral and religious feelings in phrenology, I do not speak of any determined application of them, I speak merely of the fundamental feelings. They may be applied in various ways, and the application cannot be seen in the head any more in the superior feelings than in the lower. It was an opinion formerly entertained by the adversaries of phrenology, that phrenology would be unfavourable to religion ; but we know that truth can be dangerous to nothing ; if we say only what we find, we can do no injury. Every man, I say, has naturally that which disposes him to be a moral and religious being, but that many external circumstances may very much influence him ; I am borne out in that assertion by phrenology, although I know there are some who think the contrary. As soon as we can show that certain cerebral parts are destined to such and such functions, that is all we can do. Hitherto philosophers have judged of mankind by their own feelings, and what they found in themselves they took as the standard or representation of mankind, and they have admitted that some individuals have these feelings weak, but shall we say that they are weak in all mankind ? Phrenology does not say so ; it says that they are more or less active in different individuals.

Before going into particulars, I wish to call your attention to some distinctions which I make between the two orders of feelings called moral and religious. I call that feeling moral which is given to mankind in order to direct his actions, in reference to other beings around him, particularly to his neighbours ; whilst I call that feeling given to man religious which brings him into communication with superior beings—supernatural beings : and all conditions of that kind belong to the religious feelings. There are some persons who venerate very much superior beings ; they have the fear of God always before them, and they will not do what they consider to be disagreeable to Him, they would not do anything to offend Him. There are others who pay great attention to morals, who wish to do good to everyone, but, at the same time, are less inclined to believe in religious opinions. We see the greatest differences in mankind, and if phrenologists will be attentive, they will find great differences in the organisation of such individuals. We observe that some children reason with their parents, and are afterwards inclined to admit and believe things, whilst others admit things to be as they are told them at once, and never reason. Some children are very attentive to the lessons they receive with respect to other individuals, and again in others it is quite different. These are

facts ; everyone must have observed them. Now we shall find that there are several feelings which influence our actions relative to other individuals, and that there are several feelings which lead to the adoption of religious opinions merely as far as we are concerned with superior beings. We shall find that there is a peculiar organisation in those who are much inclined to believe in a supernatural power, and in those who are less disposed to believe. We find in animals nothing analogous to this feeling called religious ; but there are some animals that feel so attached to each other that they will place themselves in circumstances of the greatest danger, and even allow themselves to be killed to save others. No man can go farther than that. We see the feeling of attachment as strong in animals as in man, but there is nothing in animals which gives any indication of their having any communication with superior beings. We have something in animals which shows



Benevolence large.

a touch of what we call benevolence and good heart. We find that among dogs there are some which are very kind to their masters and mild in their temper, and there are others very mischievous. There are some dogs courageous, but mild at the same time, and there are others courageous but very vicious. Look at such animals as are mild in nature, and you will find that their brains are much more developed than in such animals as are mischievous. Look at two tribes of monkeys, the one tribe being good-natured, and the other vicious, and you will find the heads of one tribe more raised than the other ; you never find a monkey with a little forehead good natured. The flatter the head the more vicious you will find them. The chamois is found to be more vicious than the roe. If you look at horses you will see some much more vicious than others. There is a less number of vicious horses

in this country than in France ; that is, among an equal number of horses in Paris and London, you will see a greater number of vicious horses in Paris. If you see a horse whose ears come out very much, appear to be much separated from each other, and which is at the same time flat upon the middle part of the head, you may depend upon it that there is more vice in that horse than in another where the part is elevated. (Two skulls of horses were here shown, which exhibited a striking contrast in this respect.) Is there anything of that kind to be observed in man? It is common to speak of a good heart and a good head, we place the good feelings in the head, whilst the heart is made the seat of benevolence, affection, and so on ; but in phrenology we are content with a good head.

Do you suppose that this feeling has been assigned to this part of the head by caprice or by reflection? It could be done by neither, it has been done only by experience. If you examine the head of a person who takes great delight in doing good to others, who is continually employing himself in framing schemes for their comfort, and so on, you may depend upon finding his head well developed in this particular part ; whilst, on the other hand, if you examine the head of a person, and find it flat upon the top, "Oh!" he will say, "charity begins at home." This feeling is very strong in mankind ; fortunately there is a great deal of natural benevolence in man in all countries ; but I shall have to complain, in my next lecture, of other feelings not being sufficiently active. Some few children are inclined to give what they have to others ; they will give anything—their toys or confectioneries, or anything ; and other children will not give a bit ; they will say, "No, I will keep it myself." You may always find in the former the organ of Benevolence very prominent. We have multiplied our observations on animals and on man, and may add a few more cases in illustration. If you observe the skulls we have here of Hindoos and Caribs, you will see these organs are more developed in the Hindoos than the Caribs, and that is in conformity with the history we have of these people. Benevolence would not be predominant, in my opinion, in such a skull as this, and I do not know that Robert Bruce was much celebrated for benevolence, but there certainly is little of it shown in his skull. What are called kindness, benignity, compassion, hospitality, good nature, are so many modifications of this feeling, which I consider as fundamental. We may even see its influence on thieves ; some there are who have this feeling pretty strong, but Acquisitiveness much stronger, and would rather steal from

the rich than from the poor. This is the cast of a person who was the leader of a band of robbers, and he always prevented his companions from stealing from the poor. Some people steal from churches rather than from other places; and again, there are others who would never steal from churches. We must look first for the fundamental powers, and having made ourselves acquainted with them, we can go further, and observe their combinations, and the modifications produced by the action of one on the other. There is a fundamental feeling of benevolence which disposes us to be kind and agreeable to others; if we see a suffering being, we are disposed by this feeling to assist him. This feeling is given to direct our actions in relation to other beings; if we had merely selfishness or attachment to offspring, or to our homes, and if we paid no attention to beings surrounding us, would society go on as it does? No, I am sure it would not; man's beneficence would be confined to his personal friends, or his family connections at most, and we should never see that disinterested liberality extended to mankind. Benevolence is the feeling which inclines us to act in obedience to that law which requires that we should love our neighbours as ourselves. I have now given you an explanation of what I consider a moral feeling, and the next time we meet I shall go to another feeling, which I consider also as fundamental, and which is evidently given to make man a religious as well as a moral being.

THE ORIGIN OF THE ORGAN OF HUMAN NATURE.

There are two ways by which a person is enabled to judge of character. The first is founded upon observation, and upon laws deduced from those observations. The second is a process which is regarded as an "intuition," or an "instinct," and is carried on by a single faculty of the mind—the faculty which phrenologists have named Human Nature. The success of this second process depends on the size, activity, quality, &c., of the organ; and these conditions are primarily due to hereditary transmission; and secondly, to the use or neglect of the faculty by its possessor. These two methods are generally carried on together by physiognomists, but it is possible thus to distinguish them.

The first method is purely intellectual, and is founded originally upon observation; it may be illustrated as follows. It is observed that a strongly marked Roman nose is

accompanied by an executive and energetic disposition. This is always found to be the case, sometimes showing itself plainly, sometimes hidden under various disguises. As cases multiply, this observation is confirmed, and whenever we see an individual with a well-marked Roman nose we expect to find the above-mentioned element in his character. The faculty of Human Nature is not concerned here; it is quite possible to arrive at the above conclusion without the aid of the organ.

The second process, however, is carried on solely by Human Nature, and does not depend upon the intellectual organs, though, of course, it may be aided and stimulated by them. It consists in "Discernment of character, perception of motives, intuitive physiognomy" (*Self-Instructor*). Take as an instance, two persons, one with Human Nature large, and one with it small; suppose both to be introduced to a third person. The first person will carry away with him certain impressions as to the character of the person to whom he has been introduced; but those impressions will not have been arrived at by a conscious process of reasoning: they will strike him at once, as soon as he sees the person to whom he is introduced; and if asked *why* his conclusions were so and so, he possibly might not be able to say. The second person, having Human Nature small, might very likely observe closely the appearance, dress, features, &c., of the same individual, but his conclusions as to his character would be very scanty, and very likely wrong. This is supposing neither of them to make a definite study of the individual's character, by applying known laws and deducing conclusions.

It is needless further to illustrate the first method; its rules are abundantly set forth in "New Physiognomy," and the various articles in this magazine. Suppose we now enquire into the origin of the second method of obtaining a knowledge of character, the origin of the faculty of Human Nature. It must evidently have originated in one of two ways. It was either implanted in the human mind at the time when man was created, that is to say it has always been the same functionally as now; or it owes its origin to a process of evolution, being gradually built up out of the materials collected by the intellectual faculties. If we accept the hypothesis of Divine creation, then no more need be said, it is altogether accounted for; or rather, the difficulty we meet with in attempting to account for its existence is at once merged in the insurmountable difficulty of attempting to explain the origin of the Creator. But how could its evolution have taken place? Let us take a case in illustration.

A man comes to the conclusion, through repeated observation, that a firmly-closed mouth is accompanied by a character possessing self-control, perseverance, and determination. The firmly-closed mouth would be noticed by the Perceptive faculties. In the absence of the organ of Human Nature, here supposed to be absent, the man could only become aware of the above characteristics by watching them in action, by taking note of habits and incidents which exhibit self-control, perseverance, or determination. This would be effected by the Perceptive faculties, and the habits, incidents, &c., would be stored up by Eventuality. After observing several cases of this kind, the firmly-closed mouth and the above-mentioned characteristics would become definitely linked together in the man's mind; and henceforth, reasoning by analogy, he would conclude that the external sign would be accompanied by the mental characteristic. This process would be carried on by the faculty of Comparison. He would probably see many illustrations of this during his lifetime, and the more he sees the more firmly it is impressed on his mind. He will naturally transmit to his children a slight tendency to regard a firmly-closed mouth as a sign of the above qualities; this tendency will only be a slight one, because it has only existed for a short time—one generation. The children would perhaps repeat the above intellectual process, and would come to the same conclusion as their father, that a firmly-closed mouth is a sign of self-control, &c.; they would arrive at this conclusion more quickly than the father: it would seem more natural for them to do so, owing to the inherited tendency. They also, during their lives, see a great many illustrations of this; each illustration confirms their conclusion, and they transmit the same tendency to their children, but in a stronger degree, for it has now existed for two generations. Thus the process goes on; the tendency to associate the mental characteristic with the external sign growing stronger and stronger as generation after generation lives and dies. It is very evident, that if we only extend the process over a sufficient number of generations, the tendency will come to assume a very definite shape. The members of the second generation came to the same conclusion as their father, by going through the same intellectual process that he went through, being helped, however, by a very slight hereditary tendency to arrive at the same result. But later on, as the tendency becomes stronger, the need to go through an intellectual process to arrive at this conclusion has grown less and less, and in time has disappeared; and the tendency to regard a firmly-closed mouth as a sign of self-control and determination has assumed the form of an

instinct. The sign and its characteristic are naturally or instinctively associated in a person's mind without his being able to say why, except that it seems only natural that they should be so associated.

Another illustration may be taken. It is universally recognised that a drawing back of the lips—exposing the teeth—is one of the facial indications of malignant rage; and, as Mr. Darwin says,* it is most probably “a remnant of a habit acquired during primeval times, when our semi-human progenitors fought together with their teeth, like gorillas and orangs at the present day.” Now, any animal seeing this expression on the face of another animal, would recognise the signs of anger which he himself had exhibited when in a rage—or if he did not at once recognise them, he soon would from practical experience—and, reasoning from analogy, either with himself or with other examples he had before seen, he would conclude that the animal who exhibited these signs was actuated by feelings of hatred. This reasoning by analogy would, as in the first example, be carried on by the faculty of comparison. This animal would transmit to his offspring a tendency to regard a drawing back of the lips as one of the indications of rage, and this tendency would gradually become strengthened and converted into an instinct just as in the first illustration.

These two illustrations show us how the evolution of the faculty may have taken place; of course, no definite commencement of the process can anywhere be pointed out, since the existence of the faculty, more or less developed, is compatible with a comparatively low order of intelligence. The faculty is certainly present in the lower animals to some extent.† “All domestic animals read human character well, so far as it has reference to their comfort and well-being. Fear, anger, kindness, or malice are detected in the human voice and countenance with a quickness that is astonishing, and this proves their possession of the faculty of Human Nature.” This faculty has thus been built up gradually, so that at the present day the smallest movement, sign, word, expression, occurrence, &c., is sufficient to indicate some characteristic, emotion, idea, or cause.

It is to be noted that the process of reasoning by analogy, by which the expression was associated with the emotion, the sign with the cause, was carried on by the organ of Comparison, and this shows us that the organs of Human Nature

* “Expression of the Emotions,” 1873; p. 243.

† “Phrenological Journal,” May, 1881; p. 242.

and Comparison were originally one ; in fact, Human Nature is a modified portion of Comparison, the two organs having been gradually separated off, and made distinct from one another. This is confirmed by the localisation of the two organs, Human Nature being next to (above) Comparison. It is also confirmed by the division of the organ which is made by Mr. L. N. Fowler in his new bust. He says,* "The lower part gives intuitive perception of character and motives, and desire to study mental manifestations. The upper part gives penetration and power to see far into a subject, and to form correct conclusions speedily." The upper part, which must have been the first to separate from Comparison, has thus been the most modified, and is the most unlike the latter organ.

There are one or two other organs which may perhaps have arisen in this way, that is by separation from a preformed organ or organs. Agreeableness, which consists in an unconscious imitation of those actions which are most pleasing and acceptable to people, may have arisen from Imitation. Sublimity may have arisen from the modification of adjacent parts of two organs—Ideality and Cautiousness. The great majority of the organs, however, must have arisen—through the operation of natural influences—quite independently of one another.

G.

THE INTELLECTUAL STATUS OF WOMAN.

A French *savant*, M. Delaunay, has just published an able and interesting *brochure*, the purpose of which is to show by a scientific examination of all existing *data* on the subject, that woman is intellectually, as in every other respect, in a lower stage of development than man, and, therefore, inferior to him. He writes expressly against the school that would advocate the intellectual equality of the two sexes, a school which he considers absurdly sentimental. At the same time he professes to conduct his examination of the subject purely from an anthropological point of view. He admits that among certain lower forms of life, as insects, some fishes and reptiles, the females show a superiority to the males, but among the higher vertebrates it is very different. Among birds and mammals, the male is nearly always superior to the female. The two sexes, he tells us, at first unequal in consequence of the pre-eminence of the female over the male

* "Phrenological and Physiological Register."

which characterizes the more inferior species, become equal among certain species a little more elevated in the animal scale, and again unequal in consequence of the pre-eminence of the male over the female observed in all the superior species. The supremacy of the female is, then, the first term of the evolution undergone by sexuality, while the supremacy of the male is the last term. M. Delaunay then shows in detail the points in which he thinks the male is superior to the female. Among birds and mammals, including man, the nutritive phenomena are more intense in the male than in the female. The blood is denser, contains more red globules and hemoglobine, and fewer white globules and water. Man eats more than woman. Yet although she eats less, the woman is more of a *gourmande* and eats more frequently. Our city women feed like children. The respiratory phenomena are likewise more intense in the man than in the woman ; for an equal height he has a greater pulmonary capacity and a larger thoracic index than the woman, and he also absorbs more oxygen, though his respirations are less frequent. The temperature is higher in man than in woman and the pressure of the blood greater, though the pulse is less frequent. The pre-eminence of the male over the female is especially evident from the point of view of animal life. The skeleton of the female is lighter in proportion to the total weight of the body ; the woman, in all the physical characteristics of her skeleton, is intermediate between the child and the male adult, according to Topinaud. The woman is not so right-handed as the man ; the pre-eminence of the right side over the left is less in the female. Externally, the male is always larger than the female. The woman is not so heavy as the man, although she would often appear larger on account of the development of the adipose system, which in her is greater than in man. "In all our Indo-European series," says Topinaud, "the woman is more prognathous than the man." According to M. Delaunay's own researches, the woman is more flat-footed and less arched than man—a sign of inferiority ; hence, he maintains, the preference of women for high-heeled boots. The female voice is always sharper than that of the male. Both in wild and domesticated animals, the male has the muscular system more developed than the female. The movements are more precise in man than in woman. Among pianists of the two sexes, the mechanism reaches a much higher degree of perfection in the men. The cranium has a greater capacity in the male than in the female. Huschke estimates for Europeans the mean capacity of the cranium at 1,446 cubic centimètres in man, and 1,226 in woman, or a difference of 220

centimètres in favour of man. The form of the cranium also differs according to sex; in women, according to Broca, the cranium is less high and more elongated. The brain of the male is heavier than that of the female; according to Broca, the brain of man is to that of woman as 111 is to 100. "The graphic curves of feminine brains of various races," says M. Le Bon, "show that even in the most intelligent societies, as the Parisians of to-day, there is a notable proportion of the female population whose brains approach more to the volume of those of certain gorillas than the least developed crania of the masculine sex." Further, the frontal lobes, the seat of the highest intellectual faculties, are less developed in woman than in man. On the other hand, the occipital lobes which especially preside over the life of sentiment, are more voluminous in the woman than the man. In its totality, according to Professor Wagner, the brain of the woman is always in a state more or less embryonic. Is woman more moral than man? M. Delaunay refers to the many authors who have maintained that women are more prone to every kind of wickedness than man, though, putting these aside, he shows that women commit proportionally fewer crimes than men. Statistics, however, prove that poisoning is more frequent among women than among men, which of course may be easily accounted for. As to the intellectual faculties, M. Delaunay points out that all known legislators take for granted the intellectual inferiority of the feminine sex as compared with the masculine. Everywhere woman is regarded as a minor, incapable of taking care of herself, and requiring a guide and tutor. But the advocates of the equality of the two sexes reply that the laws sacrifice woman to the man because they have been made by the latter. Moralists have noted that woman is more playful, more changeable, more capricious than man. She is also more destructive and less circumspect. The number of women run over in the street is much greater than that of men. Certain men of science maintain that woman is less intelligent than man. "Woman," says Broca, "is a little less intelligent than man." According to Darwin, man in all he undertakes goes further than woman, acts from profound thought, from reason or imagination, or simply from the use of his senses or even of his hands. If, he says, we prepare a list of the men and another of women most distinguished in poetry, painting, sculpture, science, and philosophy, each containing a dozen names, the two lists would not bear any comparison. It is objected to this that the intellectual inferiority of woman is due to the fact that for centuries she has not received the same education as man. This objection, M. Delaunay maintains, is not just

In past centuries the mass of the people were sunk in ignorance ; neither the one sex nor the other received any education. M. Delaunay maintains, then, with Professor Bischoff, of Munich, that women have not had, to the exercise and evolution of their brain and their intelligence, any other hindrances than those proceeding from their constitution and their capacity for development. M. Delaunay, moreover, points out that female musicians receive the very same education as males, and yet it is well known that, though there have been some excellent female performers, there is no instance of a great female composer. It is the same with painters and with the culinary art ; among the thousands of women who have exercised the latter, there have been few, if any, *cordons bleus*. M. Delaunay cites the opinion of manufacturers and commercial men who employ individuals of both sexes. They all agree that women are more assiduous, but less intelligent than men. In printers' establishments, for example, women work with minute care, mechanically, without knowing very well what they are doing. Thus they make good compositors in the case of reprints, a work not demanding much intelligence, but set up manuscripts badly, not understanding them so well as men. M. Delaunay then examines the position of women in various races, and concludes that the superiority of women is sometimes met with among the inferior races, ancient and modern, but never among the superior races, who are, on the contrary, always characterized by the supremacy of man. In reference to age, again, after a detailed examination of *data*, he concludes that the female excels the male in certain respects during the first 12 years, then the male in his turn begins to excel the female, and his pre-eminence endures to adult age, and decreases in old age. This pre-eminence is in most devolution, since its *maximum* corresponds to the apogee of evolution, which we know takes place between 40 and 50. The difference between the sexes increases as we rise in the scale of culture ; it is greater between educated men and women in the city than between illiterate peasants. In conclusion, M. Delaunay infers from the examination of the *data* that the pre-eminence of the feminine over the masculine sex, being met with among certain inferior species in races and among the children of the superior races, marks a lower degree of evolution.

EDUCATION.

We are all interested in the subject of education, and therefore a few inquiries into its true nature and purpose cannot be regarded as out of place.

Suppose then, in inquiring into this matter, we divide our inquiries into three, and consider—

- (1.) What is meant by education.
- (2.) What is the proper time for education.
- (3.) How we are educated.

As to what is meant by education, many people make a great mistake. They think that it consists in learning to read, write, and cast accounts, along with the acquirement of one or more other arts or accomplishments, according to our opportunities, and the position in life we are intended to occupy. Is this the right idea of Education?

If we consider the original signification of the word *Education*, we shall be led to a better idea of its meaning. We know that the word itself means literally *a drawing out*. *A drawing out* of what? Of the various faculties and powers of our nature. We may thus define education as being, when rightly directed, the development of all those powers, both of the body and of the mind, which are implanted in our being, so that we may be enabled to fulfil, as perfectly as possible, the object of our existence.

I have said that education, when *rightly directed*, is this; for there are of necessity two kinds of education. As our faculties can be developed in such a way as to enable us to fulfil the end of our being, so they may be directed in quite a contrary direction. And this gives us the significations to which the terms *good* and *bad education* ought to be applied.

We see now the great object of education, and we can also account for the common misuse of the term. The training, which generally goes by the name, is that *special* instruction which is given to us, to enable us more perfectly to follow the avocations of our daily life, and the business, trade, or profession which we are to practise; and the terms *well* or *ill-educated* are applied, as one is well or ill-fitted by previous instruction to perform these special duties. In the present article we are considering Education in the general and truer sense, and not in the special one.

Education, then, has a much higher and nobler aim than that of teaching merely the arts and sciences. Indeed, if we consider the matter well, we may easily comprehend how a poor labourer, who can neither read nor write, and who has

acquired none of the accomplishments usually taught in schools, may be really a much better educated man than one who possesses all those accomplishments. The illiterate peasant, who can do little more than guide well the plough, but who has learned to be truthful and upright, to fear God, and to be faithful in all his engagements, is far better educated than one who speaks many languages, and has learned many arts, but who is not just and upright.

And now let us consider the proper time for education. Is it not clear that it commences with our birth? Does not the child begin to learn from the moment when it first feels the sensation of life? And does not this go on from day to day, enabling it to judge more and more accurately of the sizes, qualities, and distances of things; of what acts will meet with approbation, and what not, and so on? Does it not gradually learn how to apply the various members of its body to their proper uses? Does it not, if rightly taught, learn to appreciate, more and more correctly, what is good and beautiful, and to dislike what is bad or unbecoming? Does it not learn, by painful experience, where danger is to be feared, and how to avoid it?

And not only does our education begin with life, but in the child the mind is so plastic, so sensible to every impression, so ready to learn for good or evil, that the ideas and habits acquired in the first few years of our lives are rarely removed by any subsequent teaching or experience. When we consider this, does it not impress itself upon our minds that there is a very grave responsibility resting upon those who have charge of young children? How can a child receive a good education if it has bad examples constantly before its eyes? How can it learn to practise virtue, when it sees vice daily practised by those, to whom it must look for example? How can it learn to love the truth and hate a lie when a lie is on the lips of those around it on the slightest temptation, and often even in jest? How can it learn to be patient and cheerful when it sees in those whom it should revere constant impatience and bad-temper?

It is unnecessary to dwell further upon this point. The conclusion is plain: we cannot expect children to learn what is good, and to eschew evil, unless those who have charge of their early education set them the example, for example is better than precept.

Education, then, begins with life. It also ends with it. We are, from our first moment to our last, learning either good or evil. Nothing is stationary in this world, and I think it very probable that it will be the same in the next. Every

day's experience, every thought, word, and deed leaves its mark upon our being, and has done something towards our development either for good or for ill.

We thus see that school-books and schoolmasters are only some of the many agents that are educating us. We are being educated by every circumstance of our lives, by every person with whom we come in contact, by every occupation we pursue, and by everything we see. It is not in our power during our earliest years to choose for ourselves the effect that surrounding circumstances shall have upon us ; but when we have attained the age of reason, and especially if our previous education has been good and our minds have been wisely directed, we acquire the power of controlling to a considerable extent the process of our development. We can then discriminate more or less between good and evil, and so can decide what example and what teaching we ought to follow and what avoid. If we do this wisely and perseveringly then we shall be constantly improving every event and every experience to our own good, and shall day by day more and more thoroughly perfect all the powers of our being, and be always more and more advancing in a *good education*.

J. A. S.

TREES AND HEALTH.

Very near to London there is a patch of the old Kentish forest which has not yet been cleared by the pioneering builder. In the midst of this unsullied greenwood a pretty house stands, surrounded by a shrubbery, and it struck me that the shrubbery might be a pleasant place wherein to dream through a morning. So I bowed my head, and tried to find out an open space amid the quiet of the low bushes. The laurels emptied their jewelled drops upon me, and a "soap-verry" bush twined a few lissom arms around me and left humid marks on my attire. But I found a quiet little open where I could just look easily over the heads of the lower shrubs and watch the village slumbering in the deep hollow. The ground was a little soggy, even in the open space, while underneath the darker and thicker plants there was a soft covering which made a squelching sound when the foot was placed upon it. Presently a certain heavy odour penetrated across the keen aroma of my tobacco, and I knew that I was feeling what Mr. Tennyson calls the moist, rich smell of the rotting leaves. It then struck me to look at some of the tiny pools of water that had not managed to drain away into the earth. The point of a stick sharply applied to

the bottom of these pools brought up certain round and silvery bubbles that glittered for an instant, and then broke with an insignificant sound as of a single "tick." The shrubbery embraces the house very closely, so that the happy tenant has an excellent miasma all to himself, and need never think of going to the Pontine Marshes. This will encourage native industry.

The rotting leaves smell very moist, but the richness discovered by the Laureate did not seem so obvious, for hydrocarbons are being generated in those tiny glades. If you placed a large gas jar over a heap of the brown, damp mass during only one day the contents of the jar would either put a candle out at the day's end, or would give a single bright flash when a light entered the cavity. Methyllic hydride is formed in awkward quantities. We make statutes to protect our miners from the effects of hydro-carbons and carbonic anhydride, while we cheerfully make those compounds in our gay shrubberies, and let them season the air of our drawing-rooms. In the forest the same thing was to be seen. The rough leaves of the elm were glittering with damp, the brown arms of the planes were shining, and the early beech-mast was falling to rot and germinate. Not a conifer was to be seen saving the one solemn cedar on the lawn, and the dry, delicate carpet underneath this cedar might surely have taught lessons to the owner of the shrubbery. But the coniferæ are not approved very much by those who superintend the planting of private grounds and public parks. Three miles from the squelchy shrubbery I saw a magnificent cedar growing in dark richness on another lawn. No finer tree could be seen in all Kent, and yet it was planted right over the London clay. How was this managed? The conifers must have a light soil, because their delicate radicles cannot push through clay with that robust steadiness which characterises the roots of the elm and oak. But there is no difficulty about making such a soil. The superb cedar which I saw was planted in a kind of huge tank made with concrete. This tank was filled with prepared light soil, and the cedar is enabled to feed itself with silicates without bruising its spongeoles against an impassable wall of clay. The same thing could be done at a small cost in a hundred other places where at present the elm and the beech and the oak shed their showers on the earth. London especially would benefit if copses even of *pinus sylvestris* were planted in the open spaces where people go for pleasure. It is to be feared that conifers will never thrive well in the actual heart of the town. Many people fancy that the stomata of the trees becomes clogged by the black dust, and that respiration thus becomes impossible. But the real reason

is, I fancy, somewhat farther to seek. I have found that the coniferæ require less carbonic acid than almost any other description of forest tree, and so they die in town, not so much from the clogging of the stomata as from excess of carbonic acid. It would seem as though the plants were unable to select their nutriment, and I have decided that the evil which causes the trees to droop arises from the gases absorbed. *Pinus pinaster* will thrive heartily on a bleak foreshore where the spray lashes nearly to its roots, but it dies when transferred to a large town. Yet there is no reason whatever why pine groves should not be planted on prepared soils round about London and other great towns. The trees have an inestimably beneficial effect on health. The strong man who remains among them for a while gets residual air of a pure and delicate sort into the lung cells, while one who has weak lungs breathes with ease. It is as though the air took on a silken quality from winding its course amid the dainty needles. The reason is not very obvious, but may be found out by a simple test. If sensitive starch-paper be placed under an arch where fir branches meet thickly, the paper shows a definite reaction, for the air is ozonised. One who breathes it is really breathing a life-giving fluid, and that is why an invalid's map of Europe would be coloured in the very spots where the conifers best grow. It is unwise to leave anything important to the intelligent mercies of vestrymen and boards of works, but surely sensible people will begin to advocate the planting of firs in England instead of the trees that are so little useful. It may be asked whether the miasma generated among the fallen aciculate leaves of the pine is not as dangerous as that which slumbers in the hollows of fashionable shrubberies. The absence of generated gases is just the very cause that makes the *débris* of a firwood delightful to the tread. The leaves have a very large quantity of sclerogen and lignine, and a very small quantity of cellular matter. Six months after a needle has fallen the chlorophyll will have gone, but the real frame of the leaf will remain, and the shape is almost perfect. Look at the stripped leaf which has fallen from an elm and lain long in a ditch. A weavery of fairy fibres can be seen with such great gaps in the meshes as show the quantity of cellular matter that has been macerated off the framework. There is no such maceration possible with the fir needle, and that is why the brown carpet of silk-coated spears is so good to see and so harmless to smell. We are getting rational in a great many matters that pertain to health. Perhaps by and bye we may grow rational in our sylvan efforts, and take to growing healthy trees and plants to add health to beauty.—*Morning Post*.

A NOCTURNAL ADVENTURE.

FROM THE RUSSIAN OF LERMONTOFF, BY J. N. SCHNURMANN.

Taman is the wretchedest little hole of all the seaside towns of Russia. Besides almost dying of hunger there, I ran the risk of being drowned into the bargain. I arrived by post-chaise late at night. The postillion drew up his tired team in front of the gate of the only stone-house in the place, which was situated near the entrance to the town. The sentinel, a Chernomorsky Cossack, when he heard the sound of our carriage bells, cried out, half asleep :

"Who goes there?"

Thereupon an under-officer, and a Desyatnick,* immediately made their appearance. I informed them that I was an officer, on my way to the Acting Corps on governmental affairs, and that I desired an official lodging. The Desyatnick led us about the town, but to whichever apartment we came, there was the same tale—it was occupied. It was very cold; I had not slept for three nights, was tired to death, and began to get cross.

"Get me under some roof-tree, anyway," I cried at length to the Cossack, "never mind the quality, so long as it affords shelter!"

"There is certainly another barrack," replied the guide, scratching himself under the ear, "but I'm afraid your honour will not like it; it is not clean there."

Not catching the exact meaning of the last words, I desired him to proceed. At length, after wandering for a long time through muddy bye-lanes, on both sides of which nothing could be seen but old wooden enclosures, we reached a small hut situated on the very brink of the sea. The moon shone upon the little thatched roof, and on the white walls of my apartment; in the court-yard, which was surrounded by a wall of flint stones, stood another miserable hovel, attached to it, which was much smaller and older than the first. The cliff descended precipitously into the sea from the very walls of the hut, and below, with incessant murmur, rolled the dark blue waves. The moon looked down upon the restless, but to her submissive, element, and I could see by her light, far from the shore, two ships, whose black riggings reflected themselves immovably on the pale-coloured horizon, reminding one of a spider's web. There are vessels in the harbour, thought I, and to-morrow I shall set out for Helendshick.

I had a Cossack of the line who performed the duties of a servant. After having told him to take down the portmanteau from the carriage, and dismissed the driver, I began to call for the host. . . . All was quiet! I knocked. The same silence prevailed. . . . What is the meaning of this? At last there crawled out from the house a boy of about fourteen years of age.

"Where is the master of the house?"

* An officer over ten men.

"There is none."

"What, no host at all?"

"No, not any."

"Well, the mistress, then?"

"She has gone into the village."

"Who will open the door then for me?" I cried, at the same time kicking it with my foot.

Upon this the door flew open of itself; a gust of polluted air rushed out upon me. I struck a match, and held it up to the boy's nose; it illumined two white eyes. He was perfectly blind, and had been so from birth. He stood immovable before me, and I began to examine the lines of his face. I must confess that I have a strong prejudice against all who are blind, deaf, dumb, or in any way deformed. I have observed, or fancied I had, that there always exists a certain strange affinity between the external appearance of a man and his soul, as though the loss of a limb deprives the spiritual part also of something of its quality. And thus I began to examine the blind boy's face; but what can you expect to read in a countenance that has no eyes?

Long did I look at the lad's face with an involuntary feeling of pity. All at once there passed over the boy's thin lips a smile which was scarcely perceptible, but which made—I know not why—a most unpleasant impression upon me. This caused a suspicion to arise in my mind that he was not so blind as he appeared. I tried in vain to reason with myself, that it was impossible to imitate the cataract in the eye, and if so, to what purpose? But what could I do? I could not throw off the unfavourable impression that had taken possession of my mind.

"Are you the son of the hostess?" I asked him at last.

"No."

"Who are you then?"

"An orphan—forsaken."

"But has the hostess any children?"

"No; she has a daughter, but she has crossed the sea with a Tartar."

"With what kind of a Tartar?"

"God knows who he is. A boatman of Kerchi."

I entered the hut, the whole furniture of which consisted of two benches, a table, and an immense trunk. On the wall there was not a single picture of any saint—a bad sign! The wind from the sea rushed with great impetuosity through the broken window-panes. I took from my travelling-bag a piece of wax candle, and having lighted it, began to unpack my things. I put my shashka* and gun in the corner, and my pistols on the table; spread my bourka† over one of the benches, whilst my Cossack put his over the other.

In about ten minutes' time my servant began to snore, but I could get no sleep; there hovered before me in the dark the boy with the white eyes.

* A Circassian crooked sword.

† A felt cloak.

About an hour passed in this manner. The moon shone in at the window, and her rays played on the clay-floor of the hut. Suddenly I saw a shadow obscure the streak of light which the moon was throwing upon the floor. I sat up and looked out of the window. Somebody passed quickly and hid himself—Heaven only knows where! I could not for the life of me imagine how anyone could run along the precipitous face of the cliff, and still I knew that such was the case. I got up, threw my cloak about me, put my dagger into my girdle, and very quietly left the hut. Whom should I meet but the blind boy? I ducked under the wooden enclosure, and he passed me with steady, but cautious steps. He was carrying something under his arm,—it looked like a bundle,—and having turned towards the harbour, he began to descend the narrow foot-path. The thought came to me: "On that day the dumb shall speak again, and the blind shall see."

I now followed the boy at such a distance as not to lose sight of him. In the meantime the moon was beginning to envelop herself in clouds, and a fog ascended from the sea, so that the light from the deck of the guard-ship (which was near) could scarcely be seen; but on the beach sparkled the foam of the billows, which threatened to annihilate the boy at every moment. With great trouble I managed to scramble down the rocky cliff, and now I saw that my blind boy stood below for a moment, and then turned to the right: he went so very near to the water's edge that it appeared as if the billows would at every moment seize and carry him away; but the steadiness with which he jumped from stone to stone, and the way in which he avoided every gully, showed that it was not the first time that he had traversed this road. At last he stopped, as if in the act of listening to something, sat down on the ground, and laid his bundle beside him. I hid myself behind a piece of rock which projected from the shore, so that I could observe all his motions. After a lapse of a few minutes, a white figure became visible, it approached the blind boy, and sat down beside him. The wind from time to time aided me to overhear their conversation.

"Well, blind one," said a feminine voice, "the storm is violent; Yanko will not come."

"Yanko is not afraid of the storm," replied the former.

"The fog thickens," began anew the feminine voice, with an expression of anxiety.

"It is all the more easy in a fog to steal through the guard-ships," was the reply.

"But if he should be drowned?"

"What of that? Then next Sunday you would have to go to church without a new ribbon."

Thereupon a silence ensued. Something struck me as remarkable: the blind boy had spoken to me in the "little Russian" dialect, whilst now he expressed himself in pure Russian.

"Now don't you see that I am right," exclaimed the blind boy, clapping his hands, "Yanko fears neither seas, nor winds, nor fogs,

nor coast-guards. Just listen. That does not sound like the splashing of the water ; I cannot be deceived ; those are his long oars."

The woman jumped up with signs of perturbation, and began to look into the distance.

"You are certainly mad, blind one," said she, "I see nothing."

I must confess that all my endeavours to distinguish anything like a boat in the distance were fruitless. About ten minutes passed in this manner. All at once a black spot became visible between the billows, which seemed alternately to increase and decrease in size. It neared the shore, appearing sometimes as if it were rising to the top of the waves, and again rushing with great velocity into the trough of the sea. It must have been a daring sailor to have ventured to cross the Straits, a distance of twenty versts, in such a night ; and weighty must have been his business to have induced him to do it. Thus musing, and with an involuntary beating of the heart, I looked on the solitary boat, which like a duck, dived down, and then the oars, looking like wings, fluttered up again, and so from surge to surge. I expected to see him, while in the act of rowing towards the shore, dashed into fragments ; but he turned skilfully aside, and rowed unhurt into a little bay.

A man of middle size, having a fur cap on his head, jumped out, and beckoned with his finger, and all three began to drag something out of the boat ; the weight was so great that up to this day I cannot understand how it did not sink. Each of them took a bundle on their back, and took their way along the shore, until at length I lost sight of them. Nothing remained now for me to do but to return home. I confess that these mysteries excited me so much that I longed for the coming of morning with the greatest impatience.

My Cossack, on awakening, was not a little astonished to see me up and dressed, but I gave him no explanation. After having gazed for some time with admiration at the sky, which was covered with dark blue rent cloudlets, and on the distant coast of the Crimea, which extended itself in lily-coloured stripes, ending in a rock whose summit was illumined by a light-house, I now went to the fortress of Tangorio in order to learn from the Commandant the time when I could proceed to Helendshick. But, alas ! the Commandant could not tell me anything definite. The vessels that were in the harbour were either guard-ships or merchant vessels ; besides, they had not even begun to load. "Perhaps in three or four days a packet will arrive here," said the Commandant.

"Well, and then — ?"

"We shall see further."

Gloomily and vexed I returned home. My Cossack met me at the door with a frightened expression.

"Affairs look bad, your honour," said he to me.

"Yes, my friend, they do," I replied ; "God knows when we shall come away from here !"

At these words he became more frightened, and turning to me whispered in my ear :

"It is not here as it ought to be! I met, to-day, an acquaintance of mine, a Black Sea officer, who was in the Active Corps last year. When I told him where we had put up, he said, 'Brother, all is not as it ought to be there; the people are not good!' And now I beg of you to tell me truly what you know of this blind boy? He goes about everywhere, to the Bazaar for bread and for water. Plainly the people have accustomed themselves to see him."

"Well! has the mistress of the house yet made her appearance?"

"Whilst you were away to-day the old woman and her daughter came."

"What daughter? Why, she has no daughter!"

"Then God knows who she is, if she is not her daughter. Why yonder is the old woman just sitting in her hut."

I went in. The stove was well heated, and a tolerably good meal for such poor people, was cooking. To all my inquiries the old woman replied that she was deaf, and could hear nothing. What was to be done with her? I turned to the blind boy, who was sitting by the stove throwing sticks into the fire.

"Well, you little blind imp," said I, taking hold of his ear, "just tell me, where did you steal to last night with the bundle, eh?"

Hereupon, the blind boy began to weep, to scream, and to howl.

"And where was I going? I was going nowhere. With a bundle? With what bundle?"

The old woman now seemed to regain her hearing, and began to scold:

"This is invented, and, besides, against an unfortunate creature. What are you taking him for then? What has he done to you?"

I grew weary of the whole transaction, and so I left the hut, but firmly resolved to find a solution of the riddle. I wrapped myself up in my cloak, and sat down near the fence upon a stone, and looked into the far distance. The sea, which was last night agitated by the wind, stretched far away, and its monotonous roar, like the humming of a retiring city, reached my ear, and reminded me of old times, and led my thoughts to the north, to our icy capital. Moved by recollections, I fell into thought. So passed about an hour, and perhaps more.

All at once something like a song caught my ear. I was not mistaken; it was an air sung by a fresh womanly voice. But from whence? I listened, and heard a song at times melancholy and sad, and again quick and lively. I looked back; nobody was near. I listened anew; the sounds seemed to fall from the sky. I raised my eyes, and behold, yonder, upon the roof of my hut, stood a young girl; she wore a striped dress, and her long hair fell in graceful folds around her—she looked a very water-nymph. Shading her eyes with her hand against the rays of the sun, she looked into the distance; now laughing and talking to herself, and now recommencing her song. I remember every word of it. It ran thus:

On the blue and crested waves
Of the ever-changing sea,
Myriads of tiny ships
Are tossing ceaselessly.

And amid the crowd of craft
I see my favourite boat ;
Without a sail or rudder, lo,
How bird-like it doth float !

When the storm-king, in his might,
Stirs up the winds in glee,
O, then you see the vessels fly
Like birds across the sea.

With lowly heart, I pay
To the sea my homage due ;
Oh, angry sea ! touch not, I pray,
My favourite boat and true.

For this tight little craft
Bears costly merchandise ;
A daring fellow brings it o'er
When darkling are the skies.

It seemed to me as if I had heard the same voice last night. I still sat for a little time in deep thought, and on looking again on the roof saw that the girl had disappeared. Suddenly she passed me on her way to the old woman, singing another song, and snapping her fingers to keep time, and as soon as she came up to her, they began to quarrel. The old woman grew angry, but gave a loud laugh. My Undine came at last skipping towards me ; when she was very near, she stopped and stared into my face as if my presence affrighted her ; she then turned carelessly away, and proceeded slowly to the harbour. But this was not all. All day long she was about my lodgings ; her singing and friskiness ceased not for a moment—a curious creature ! Not one trace of frivolity was to be seen on her face ; on the contrary, her look was very searching whilst gazing on me, and her eyes seemed to have a magnetic power to draw me into conversation with her, but as soon as I opened my mouth she roguishly and laughingly ran away. Truly, a like woman I had never before seen ! She was by no means a beauty, but with regard to beauty I have my little prejudices.

There was that about her which bespoke good birth, and this is no unimportant point with the gentler sex ; it was apparent in a high degree in her hands and feet, as well as in her gait, but most strikingly in the formation of her nose. A regular nose is more seldom seen in Russia than small feet. My songstress did not appear to be much more than eighteen years old. She showed the unusual suppleness of figure, and a turn of the head peculiar to herself. Her long blonde hair, as well as a peculiar lustre on her slightly sun-burnt neck and shoulders, but particularly her regular nose—all these drew me towards her with a secret magic, although I read something wild and suspicious in her side glances. Notwithstanding her smiles, there lay something inexplicable therein. Here the power of prejudice conquered ; but the regular nose beguiled me anew. I fancied I had found Goethe's Mignon, that most lovely creation of his Teutonic imagination ; and assuredly there was a

great similarity between them : the same rapid transformation from the highest emotion to the most perfect immovability, the same mysterious harangues, the same jumping, the same strange songs. Towards evening I stopped her at the door and had the following conversation with her—

"Pray, tell me, dear, What have you been doing to-day on the top of the roof?"

"I was looking from whence the wind blew."

"What have you to do with the wind?"

"From whence the wind blows, thence comes also my fortune."

"Then, you have invited your fortune with a song."

"Wherever there is song, there the people are happy."

"But suppose your singing were to bring misfortune?"

"What of that? Where it cannot become better it grows worse; and from bad to good there's again not much distance."

"Who taught you these songs?"

"Taught?—Nobody! Something enters my mind, and I begin to sing; the one for whom it is intended is sure to understand it, but those for whom it is not intended, do not understand it."

"But what is your name, dear Syren?"

"Who christened me knows it."

"And who christened you?"

"Well, how am I to know that?"

"Ah, you mysterious creature, you! Something I have learned of you."

But she gave no sign of change in her countenance, or quivering of the lips, which would show that I meant her.

"I have learned that you were last night on the shore."

I went on to tell her, with an air of great importance, everything I had seen. I had hoped to perplex her; but not in the slightest degree! She began to laugh loudly.

"Then, you have certainly seen a great deal, and are still none the wiser, and what you know you had better keep under bolt."

"But what if I should tell the Commandant of it?" said I, assuming a very important and serious air.

She suddenly jumped up, began to sing, and then hid herself like a bird that has been frightened out of its nest. My last words were by no means well chosen, but at that time I had no notion of their importance. However, I shortly had cause to rue them.

As soon as it grew dusk I ordered my Cossack to serve tea, lighted a candle, sat down at the table, and smoked comfortably my travelling pipe. I had already finished my second *glass of tea*,* when the door began to creak, and a sound of rustling like that of a dress was audible; I was frightened for a moment, but as I looked round—behold, there my Undine! Silently, and without uttering a syllable, she sat down opposite to me with her eyes riveted on my face, and—I really do not know why—her look appeared to me marvellously tender. She appeared to expect a question from me,

* The Russians take their tea and coffee in glasses.

but I remained silent, being overcome by an inexplicable emotion. Her face was covered with a deathly pallor, which betrayed the more her inward emotion; her hand was nervously fumbling on the table, and I remarked that she was trembling slightly; her bosom was agitated and her breathing spasmodic.

I began to grow weary of this comedy, and was just about to put an end to the silence in the most prosaic manner—by offering a cup of tea—when she jumped up, threw her arms round my neck, and impressed a damp passionate kiss upon my lips. My eyes grew dim, my head turned, and I embraced her with all the ardour of a youthful lover; but she glided out of my arms like a snake, and whispered in my ear—

“To-night, when all are asleep, come to the shore,” and rushed like lightning out of the room, upsetting in her flight the tea-urn and the candle, which were both standing on the floor.

“What a witch of a girl!” cried the Cossack, who had made almost sure of presently regaling himself on the tea which I was going to leave, and now stretched himself disappointedly on the straw. I now regained consciousness.

After the lapse of about two hours’ time, and when everything grew quiet at the harbour, I woke my Cossack.

“If you should hear the report of a pistol,” said I to him, “come to the shore.”

He rubbed his eyes, and answered mechanically, “Very well, your honour.”

I put the pistol into my girdle and went. The young woman was already at the edge of the descent; her dress was extremely light; a little handkerchief enclosed her delicate waist instead of a sash.

“Follow me,” she said, taking hold of my hand. We descended the bank. I don’t understand how it was that I did not break my neck. On arriving at the foot of it we turned to the right, and took the same road along which, not long since, I had followed the blind boy. The moon had not yet risen; only two little stars shone like saving light-houses on the dark sky. Heavy waves chased each other as if in measured cadence, but did not even raise the solitary boat which was lying tied to the shore.

“Come into the boat,” began my companion.

I am not a lover of sentimental trips on the sea; but there was no time to resist. She jumped into the boat, and I after her, and before knowing where I was, I perceived that we were floating.

“What is this?” I said angrily.

“It is this,” my companion answered, pressing me down on the seat and encircling my waist with both arms. It is this—because I love”

And her cheeks pressed mine, and I felt her hot breath upon my face. All at once something fell with a splash into the water; I put my hand to my girdle—the pistol was gone! Then a frightful suspicion seized my mind; the blood rushed violently into my head! I looked about—we were already some distance away from the shore,

and I could not swim ! I tried to push her off me, but she had fastened herself on to my clothes like a cat. Suddenly I felt a heavy jerk which nearly threw me overboard. The boat began to toss and roll, but I succeeded in restoring it to equilibrium. And now a desperate struggle began between us ; my indignation lent me strength, but I soon perceived that I was far inferior in skill to my antagonist. . . .

"What do you want to do with me," I cried at last, squeezing her little hand with all my might. Her fingers cracked, but she uttered no sound ; her snake-like nature withstood this trial.

"You have seen," she replied, "and you will inform !"

Then, with a supernatural exertion, she threw me to the bottom of the boat ; we were both half out of the boat ; her hair touched the water. The moment was decisive ; I pressed my knees firmly to the bottom, seized her with one hand by the hair, and with the other by the throat, upon which she let go her hold of my clothes, and at the same moment I threw her into the sea.

It was already grown dark. Her head re-appeared several times from the foaming waves, and then nothing more was visible. . . .

At the bottom of the boat I found the half of an old oar, by means of which, and after long-continued exertion, I succeeded in reaching the harbour. On my way along the beach towards my hut, I involuntarily looked to the spot where the blind boy had last night waited for the nocturnal sailor ; the moon had already begun to rise, and it appeared to me as if something white was sitting on the shore there ; I crept on silently, driven by curiosity nearer and nearer. I then laid myself down full length upon the grass, behind a jutting point from whence I could see everything that was passing before me, and I was not a little surprised—nay, I almost rejoiced—to recognize my Undine. She was squeezing out the sea water from her long hair ; the wet dress displaying her delicate waist and her fine bosom to perfection. There then appeared in the distance a boat which quickly approached the shore. Again, as last night, a man jumped out wearing a Tartan cap, but whose hair was cut Cossack-fashion, and in whose leathern girdle a large knife was shining.

"Yanko !" she cried. "All is lost !"

Thereupon such a secret conversation ensued, that I could not hear one syllable.

"But where is the blind boy?" asked Yanko at last, with a voice somewhat raised.

"I sent him away," was the reply.

It was not long ere the blind boy made his appearance, carrying on his shoulders a bundle which was immediately thrown into the boat.

"Listen, blind one," said Yanko, "mind that place. . . . You know there are rich wares there. . . . Tell —— (the name I could not catch) that I can no longer serve him ; the affair has taken a bad turn. He won't see me any more ; it is now dangerous, and I will

seek employment at another place, and he will not soon find such another dare-devil as myself. You can also tell him that Yanko would not now have left him in the lurch had he paid him better for his trouble. I will find bread wherever the wind blows and the sea rages !”

After some silence, Yanko continued, “She must go along with me ; she dare not remain behind. You may tell the old woman to be sure to guard her honour if it should be now her lot to perish. Us she will never see again.”

“But I !” said the blind boy, in a dolorous voice.

“What are you to me ?” was the reply.

In the meanwhile my Undine had jumped into the boat, and was beckoning with her hand to her companion ; the latter put something into the blind boy’s hand, saying :

“There, buy ginger-bread with it.”

“Is that all ?” asked the blind boy.

“Well, then, there is more.”

A falling coin chinked on the stones. The blind boy did not pick it up. Yanko sat in the boat, the wind blew from the shore ; they unfurled quickly a small sail, and hastened away with the fast-receding waves. By the light of the moon I could see for a long time the white sail between the dark waves. The blind boy was still sitting on the sea-shore, and appeared as if he were sobbing, and indeed I found that he cried long, very long.

I was sad. Why, I mused, had fate thrown me into the tranquil circle of honest smugglers, and caused me to disturb their peace like a stone which is thrown into the smooth surface of the water ? I returned home. The end of the candle was flickering in a wooden plate on my floor, and my Cossack had gone to sleep, notwithstanding my orders to the contrary. I observed that he was holding his gun very fast, though unconsciously. I let him alone, took the candle, and went into my bedroom. Oh, dear ! my strong box, my shaska, inlaid with silver, a Daegestan dagger (the present of a friend) all were gone. Now I guessed what articles they were which the wicked blind boy carried. Although I awoke the Cossack with an impatient kick, and a good scolding, there was nothing more to be done. Would it not have been ludicrous to have made complaint before a magistrate that a blind boy had robbed me, and that a girl eighteen years of age had nearly drowned me ? Thank Heaven, I had an opportunity, the following morning, to leave this miserable place. What became of the old woman and the blind boy I do not know, nor do I care.

For myself, I am a wandering officer, with a safe passport, and travelling on crown affairs. Why, then, should I trouble myself about the joys or sorrows of other people ?

A GREAT CORAL WORM, AND HOW CORAL REEFS ARE BUILT.

BY C. F. HOLDER.

The process of reef-building is an interesting one. We will suppose that the sea bottom is first visited by a single egg from the *astrea*, a small delicate speck of jelly. In a few days this has begun to show a few tentacles, and is apparently, if we should examine it, nothing more than a sea anemone; but, in a few weeks, while the *polyp* has been establishing itself, it has also been secreting a little lime at the bottom of its tube, and fastened itself thereby to the object that it may have fallen upon, perhaps a clam shell. Now there will soon be seen a growth of lime upon the edges and sides of the *polyp*; it loses its likeness to a sea anemone, and is covered by a white jagged coating of lime. Soon another one is growing out alongside of the first, and the animal is capable of sending forth eggs as well. The single *astrea* has now become two by the process of growth, much like that of the branching of vegetables, and this goes on indefinitely, while some species seem, after a time, to attain a definite form, and are thus a valuable element in this great work of building a continent. Besides the actual bulk which the stony *astreas* add to the work, there are many other forms which are brought in accidentally, and somewhat dependent on the first. When the bottom has become covered by the coral rock, there are numerous causes to produce a decay of the *polyps*. When these are dead, the pores of the coral are filled up by sand, which adds a little to the height; other corals grow upon this, and the natural *aëbris*, which is always swaying about by the tide, is deposited here as well as elsewhere; then there are branching corals which take root here, and gorgonias, or sea fans, and feathers. To make the reef solid and compact, nature grinds up the corals, disintegrates them, and the soft parts sift down, solidifying the entire mass. One of the most potent helpers in this marvellous work is a monster sea-worm. It is a coral parasite, and a most terrible one. The writer has often watched it slowly crawling up the branches of the madrepores, until the end of one was reached. Its mouth, which is a sort of bag, envelopes the end of the branch, the worm slipping over it like a glove on a finger, covering hundreds of the delicate *polyps* and sucking them out of their cells. When it has exhausted the supply it withdraws, leaving the branch as white as snow, in strong contrast to the rich

brown of the others. This is done continually, and the bleached branch is soon broken off, and falls to the bottom to help in the general growth of the area.

Myriads of other worms wind in and out among the astreas. Of them Coryell says :

"The nereis is nothing but a series of rings from head to tail, but it is most gorgeous in colour, fairly blazing with iridescent tints. It lives in holes in rocks, or in the hollows of sponges or shells.

"To get about with, this worm has many little paddles, two on each ring of its body, in fact, which move so fast that we can scarcely see them, and, of course, carry their owner very rapidly through the water. A nereis of four feet long has seventeen hundred paddles to carry it along. Besides this, there is another use for these paddles—they carry the worm's weapons. At the end of the oars are often seen what look like hairs, which are capable of being pushed out and drawn in. Looked at by the help of the microscope, these simple-looking hairs turn out to be a wonderful array of weapons—darts, curved double-edged swords, sabres, harpoons, broad-swords, fishhooks, lances with barbs, and almost every sort of cutting blade. All these instruments of war, when not needed, are drawn back into sheaths in the little paddles, and so kept safe and ready for instant use. But this is not all : in each ring of its body are also tufts of branching filaments of bright red colour, which are really gills, by which means it breathes. The nereis lives upon animal food, yet its mouth is a simple opening without teeth. Beyond, or back of it, is a sort of a bag, of large size for the worm, lined with sharp horny plates of teeth. When the creature sees its prey, it sticks this bag out of its mouth, inside out. The teeth are then thrust into the victim, and the bag drawn in, still holding on to what it has seized the prey thus swallowed is eaten at leisure."

Late shells bore into astreas, so that solid appearing heads are often found to be mere shells. The holothurians prey upon the corals, and we have often found several ounces of ground coral in the long intestine of the *Holothuria floridiana*.

Another enemy of the branch coral is the great parrot fish. Its jaws are composed of solid pieces of bony dentine, and it easily breaks off the tips of the coral, grinding them up and rejecting the limy portions. The entire genus (*Scarus*) are essentially coral destroyers as well as reef-builders.

Poetry.

THE GRAVE IN THE BUSENTO.

FROM THE GERMAN OF PLATEN.

On Busento, near Cosenza, muffled songs are whispered nightly ;
From the waters sounds an answer, echoed by the ripples lightly.

Up and down the river's margin, shades of Gothic warriors move ;
They bemoan their dear Alaric, whom, of all men, best they love.

Far from home and all untimely, must they in the grave him lay,
While his blond locks still so thickly 'bout his youthful shoulders play.

And upon Busento's margin, each with each as friends contend,
Digging deep another channel, and aside the waters bend.

In the waveless river's bottom made they then their warrior's grave,
Put the corpse in, all in armour, mounted on his charger brave ;

O'er him then, and his proud trappings, flung they in the earth again,
That from out the hero's corpse-stead river-flowers might spring again.

Then a second time diverted, flowed the waves as heretofore,
And along their olden channel surg'd Busento's floods once more.

And there sung a choir of warriors : In thy hero's glory sleep,
No vile Roman greed shall ever sully this thy grave so deep.

Sang, and lo ! the strain was echoed far among the Gothic host :—
Roll it on, Busento's billows, roll it on from coast to coast !

Facts and Gossip.

WE would call the reader's special attention to the advertisement on the back page of this Magazine. Mr. Fowler has been induced to bring out the "Board School Gymnastics" by the constant demand there has been for something of the kind, not merely for school, but for home use. We have constantly been calling attention to the necessity, in these days of intellectual pressure and little leisure, there is for the introduction of some system of gymnastics whereby the stimulus given to the brain may be healthily set off by a judicious development of the body. The system described in the work in question supplies the desired want. It is adapted to the school-room, to the family (and where there are children there should be a gymnasium in every drawing-room), and to the bed-room or study, and all those interested in true development should make themselves acquainted with it, and introduce it to their friends.

THE report of the Anthropometric Committee of the British Association contains a new and unexpected statement—that there is a very slow but decided increase of stature in all classes of persons up to the age of seventy. This is explained by the survival of the taller and better developed members of the population, and the elimination of the smaller and feebler ones. In the matter of height, to him that hath shall be given. If you are tall and strong at twenty-one, you may go on getting decidedly, though very slightly, taller for half a century. The discovery, therefore, does not concern men who are in extremes. The dwarf will grow no taller, because he is not tall to begin with. The giant will grow no taller, because giants, since Goliath, are usually not well developed. As regards class and occupation, the two extremes of the anthropometric scale, both as regards height and weight, are the artisans and the professional class, the average difference between the two being a little over two inches, and rather more than 16 lb. The labourers and the commercial class come between the two, the average height and weight for all four classes being—

	Height.	Weight.
Artisans.....	66.55 in.	136.2 lb.
Labourers	67.15 „	137.8 „
Commercial	67.79 „	143.9 „
Professional	68.70 „	152.7 „

IN a brief article on the “Mental Phase of Cold-catching,” the *Lancet* draws attention to the fact that colds are caught by the people who expect to catch them, and not, as a rule, by the people who do not. “Few persons,” we are told, “take colds who are not either self-consciously careful or fearful of the consequences of exposure.” The fact is one of common observation. The man who is always wrapping up and looking askance at open windows, and wondering whether the wind is easterly, is well known to be constantly in trouble with colds, just as the man who faces the east wind in his shirt-sleeves, or sits in a draught to cool himself, is favourably known for what is called his hardiness. Our contemporary says that the reason of this is that where a man has a healthy vascular system, and that part of the nervous system which controls the circulation performs its functions normally, any disturbance of equilibrium brought about by external cold is soon remedied. In other words, Nature will prevent a chill from giving you a cold if she be not fidgeted. Consciousness is one element in the production of a cold, and, therefore, people escaping unclad from a burning house, or jumping into water to save life, do not catch cold, having something else to think about. The moral of this view of the case is so extremely wholesome that one is glad to see it advanced on good medical authority. But, of course, there is no intention of preaching the doctrine that immunity from colds is to be obtained by treating precautions against exposure with contempt. The power of Nature to restore a disturbed balance

depends very much upon the subject's state of health, and the "vascular system" of which the *Lancet* speaks may be by no means perfect in many people who, happily, think themselves quite well. An ancient northern rhyme says :—

"When the wind blows through a hole,
Make your will and save your soul."

And many a man who is no coddle might do worse than remember, even in summer, the quaint warning against draughts.

RECENT researches by M. Pasteur appear to throw considerable light on the origin of anthrax, or splenic fever, and allied diseases, which attack cattle, sheep, &c. When an animal dies of anthrax it is not uncommonly buried on the spot. The conditions of putrefaction prove fatal to the small parasitic organism, or *bacteridium*, which is abundant in the blood at death. The gas given off causes it to break up into dead and harmless granulations. But before this can occur not a little of the blood and humours of the body have escaped into the ground about the carcass, and here the parasite is in an aerated medium favourable to the formation of germs. These corpuscular germs M. Pasteur has found in the soil, in a state of latent life, months and years after the carcass was buried; and by inoculation of guinea pigs with them, has produced anthrax and death. Now, it is specially notable that such germs have been met with in the earth at the surface above the place of burial, as well as near the body. The question arises: How came they there? And it would appear that earthworms are the agents of conveyance. In the small earth cylinders of fine particles, which these creatures bring to the surface and deposit, after the dews of morning or after rain, one finds, besides a host of other germs, the germs of anthrax. The dust of this earth, after the cylinders have been disaggregated by rain, gets blown about on the neighbouring plants, and the animals eating these thus receive the germs into their system. It is suggested that possibly other disease-germs, not less harmless to worms, but ready to cause disease in the proper animals, may be in like manner conveyed to the surface in cemeteries. This would furnish a fresh argument for cremation. The practical inference as to anthrax is, that animals which have died of this should not be buried in fields devoted to crops or pasturage, but (wherever possible) in sandy, calcareous ground, poor and dry—unsuitable, in a word, for worms.

RICHARD COBDEN, speaking once from the noble honour of his own upright soul, asked, thinking of a famous, successful, and unscrupulous statesman, "How will it be with him when all is retrospect?" This is the great touchstone of life: how it looks when regarded through all its long perspective at a time when its chief actor has little or no power to add to or improve the picture.

THE
Phrenological Magazine.

DECEMBER, 1881.

M. DE LESSEPS.

THE power, clearness, and grasp of the mind is as variable in different individuals as size and weight. One mind takes in the whole situation at a grasp, while another cannot comprehend a limited view of the same subject. Some can hold their minds tenaciously to a continued investigation of a subject, and thus grasp the whole by patient application to its parts one after another; others have to dwell on the whole and its parts for a long time, and the entire truth only dawns upon them gradually.

Education and training have much to do with the habit or working of the mind. Thus one who has systematically trained his mind to investigation and thought does his mental work much less laboriously than one who simply habituates himself to use his mind in the rough, and he does it too more effectively. What I have called using the mind in the rough is a wasteful method. It is like the boxer who lunges out, hit or miss, in the hope that if he should strike he will settle his antagonist; whereas if he took pattern of his opponent, who reserves his power, watches his opportunity, and only delivers his blow when he knows it will tell, he would be surer of success, and less exhausted by his efforts.

It is in this respect—the using of the full powers of the mind without exhaustion—that the great utility of training lies. The difference between men in this regard is very great. Some men are always exhausted with the day's work. They are just like a time-piece; they are wound up for the day, and they run down with the day. Others are like the eight-days' clock, and only want winding up at the end of the week; while there are not a few like the ancient horologe recently purchased by the city of Rouen that goes for the whole year, and then is not run down. In the latter case, it is not merely a matter of habit and training, but of con-

stitution also. Such men show a clear descent from the patriarchs.

M. De Lesseps is of the patriarchal type. He possesses an organisation that is made to wear. Both mentally and physically he is powerfully built. In such a constitution the vital organisation supports and gives strength to the brain, while the brain returns vigour and renewed youth to the body. Health and strength of body give force and grasp to the mind ; the energy of the mind keeps the body from decay.

Up to the present period of his life he has shown a power of constitution and a tenacity of health superior to most men ; for he has been through all degrees of severe labour, exposure, and strain of constitution, without injury. All his vital forces are amply developed ; his osseous system is powerful, and his joints are held together by vigorous muscles. There is harmony between the powers of his body and the brain, and so he works with less friction than common.

He has a rotund organisation throughout. Body, force, brain, mind—all are well rounded ; consequently he is at home anywhere, on all subjects, and with everybody. He is prepared to take everything into account. His long life and varied experience has been of great service to him, enabling him to use his varied powers to the best advantage ; hence he is able to plan and conduct a more complicated work than the majority of men. His great width of head indicates uncommon energy and force of mind. He feels equal to any task—no matter how great the undertaking or danger. In addition to his great courage, he has equally great conservative, restraining power ; so that he is not constitutionally indiscreet, either in speech or action. He takes everything into account, and knows how to economise in time, strength, and means. Acquisitiveness, Secretiveness, and Cautiousness appear to be large ; for the head continues to be broad from the top of the ear up to the corner of the parietal bone, which indicates prudence and economy.

His head is unusually high and broad on the top, which denotes settledness and fixedness of character, and sufficient moral principle to regulate, conduct, and resist more than ordinary temptation. Firmness is very large, and his general make-up and expression indicates firmness, determination, and perseverance. Conscientiousness and Hope appear equally large, which give integrity and enterprise. His mind as a whole is very receptive and emotional. He is never at a loss for resources. The spiritual part of his nature is very active, and is to him like a third eye, giving greater freedom

to mental action, and frequently resulting in inventions. The height of his head over the forehead indicates a generous, philanthropic turn of mind, and makes him large souled in



every way. He is broad in the temples, which favours ingenuity, versatility of talent and ability to contrive and devise ways and means.

The frontal lobe is exceedingly large. Both the upper and lower portions of the forehead are well developed. The perceptive faculties are large, and give him correct judgment of things, and their qualities and uses, yet the reasoning faculties are still stronger, indicating that he possesses great originality of mind, ability to plan and understand principles, and more than an ordinary degree of quick intelligence, clear judgment, and general comprehensiveness of mind.

Such an organisation is in every way adapted to large operations and great responsibilities. It would be as much out of place in a small retail business as an ox would be in a boy's toy cart. It is fitted to succeed in a great enterprise, while it would be sure to fail in anything small. There are no end of failures in life because men get into the wrong businesses. A big man gets behind a counter where his little sister should be ; or he goes to driving a quill when he should be driving a plough, or ploughing the sea. If a man has anything in him—and phrenology and physiology will generally be able to tell him if he has—he loses nothing by using his powers on a large scale, like Lesseps, instead of in some small, pettyfogging way, suitable only for those of inferior capacity.

Vicomte Ferdinand de Lesseps, diplomatist and engineer, was born at Versailles, November 19th, 1805. After holding various consular appointments in Europe and the East, he was made consul at Barcelona in 1842, during the bombardment of which town he zealously devoted himself to protect French life and property, besides affording an asylum to Spaniards and others on board French ships. His fame rests chiefly on his scheme to pierce the Isthmus of Suez by means of a canal, and in successfully carrying it out he showed much zeal and indefatigable energy. It was in 1854, when in Egypt on a visit to Mehemet Said, that he opened the project to Said Pasha, who, seeing the advantage that might be expected to accrue from its execution, invited him to draw up a memorial on the subject. This was done, with full details, under the title of "*Percement de l'Isthme de Suez exposé, et Documents Officiels.*" M. de Lesseps received a firman sanctioning the enterprise in 1854, and a letter of concession was granted by the Viceroy of Egypt in January, 1856. Eminent English engineers questioned its practicability, which, however, has since been clearly demonstrated. The works were commenced soon after the company was constituted, in 1859. Large sums were subsequently expended, and the late Pasha of Egypt was induced to take a large

number of shares in the undertaking, besides permitting M. de Lesseps to employ native labourers. This ingenious scheme was at first favoured by a portion of the commercial body in this country ; but a belief soon gained ground that the project was virtually a political one, and in this point of view it received no encouragement from the British Government. On the death of the late Pasha of Egypt, in 1863, the question of the sanction of the Ottoman Porte was more actively discussed, and the right of the Sultan to grant it formally insisted upon. The result was the withdrawal of the permission to the company to hold any portion of Egyptian territory—the supposed covert design of the project—and after much dispute between M. de Lesseps and the Egyptian Government, the claim for compensation to the company he represented was left to the arbitration of the Emperor of the French, who imposed certain conditions on both parties, and allowed the works to be continued. A canal with sufficient water to admit of the passage of steam-ships was opened August 15th, 1865. By degrees, owing to the employment of gigantic dredges, and a novel system of machines for raising and carrying away the sand, the bed of the canal was enlarged, so that small ships and schooners were enabled to pass through in March, 1867. At length the waters of the Mediterranean mingled with those of the Red Sea in the Bitter Lakes, August 15, 1869, an event which was commemorated by grand fêtes at Suez, and on November 17th, the canal was formally opened at Port Said, amid a series of festivities, participated in by the Empress of the French, the Emperor of Austria, the Crown Prince of Orange, the English and Russian ambassadors at Constantinople, and a large number of English and Continental merchants and journalists. A grand processional-fleet, composed of forty vessels, then set out from Port Said in the direction of Ismalia. A few days after the inauguration, M. de Lesseps married Mdlle. Autard de Bragara, a very young Creole of English extraction. In February, 1870, the Paris Société de Géographie awarded the Empress's new prize of 10,000 francs to M. de Lesseps, who gave the money as a contribution to the Society's projected expedition to equatorial Africa. He was appointed to the rank of Grand Cross of the Legion of Honour, November 19th, 1869, received the cordon of the Italian Order of St. Maurice in December, 1869, and was nominated by Queen Victoria as Honorary Knight Grand Commander of the Order of the Star of India, August 19th, 1870. The Honorary Freedom of the City of London was publicly presented to him July 30th, 1870. In July, 1873, the Paris Academy of

Sciences chose M. de Lesseps a free member, in the place of M. de Verneuil, deceased. In 1875 he published "*Lettres, journal, et documents pour servir à l'histoire du canal de Suez.*" For this work the French Academy awarded to him the Marcelin-Guerin prize of 5,000 francs (May, 1876).

M. de Lesseps' later labours, and especially his Panama canal project, are too well known to need mention here.

L. N. F.

THE SUBSTANCE OF THE SOUL.

The subject here proposed for discussion is one of the highest importance as well as of the deepest interest; it is one, too, which has occupied the minds of the greatest men that the world has produced. Attention has recently been called to this topic by some expressions of Professor Tyndall's, to which much importance must be attached. An enquiry into the nature of the soul appears to me to present itself under three separate phases:—

Firstly. By some the soul is contended to be an absolutely immaterial being, devoid of all substance, and of all the properties of matter; and whose essence, according to Descartes, and some other acute and deep-thinking philosophers consists only in thinking. These persons appear to me to reduce it to a mere nonentity, a simple creature of the imagination.

Secondly. By other persons the soul is asserted to be of an entirely material nature, the mere result of the organisation of the body, or of the structure of the brain: this appears to be the ordinary ground of controversy between the materialists and their opponents, and it is this doctrine of the soul being the result of material organisation, and possessing no independent existence beyond this, that the great body of the materialists put forward as the basis of their creed, and on which the generality of what may be termed popular materialists take their stand. Those, however, who hold that the soul consists in, or is only the result of, the organisation of the body, are bound in all logical accuracy to conclude, that the destruction of the body, or of that part of the frame by which the soul acts, must necessarily also cause the destruction or cessation of being, in the case of the soul also. The above theory, nevertheless, appears now to be generally adopted as the vulgar doctrine of the shallow critics and pseudo-philosophers of the present day.

Thirdly. By a third party, among whom we may class the

eminent philosopher, Locke, the soul is deemed to be an ethereal substance, possessing certain of the qualities of matter, but of so refined and subtle a nature as to be capable of being endowed with intelligence. Nevertheless, Dr. Priestley and some others have contended, that no kind of matter, however refined, can be endowed with intelligence.

The grand question raised, or thought to be raised, by Professor Tyndall, is, whether the soul exists of itself, as an independent being, or whether it is the mere result of the organisation of the material frame, of the structure of the brain and its organs, or of particular parts of them. This theory may perhaps be pronounced rather negative than positive. It may be said that the learned Professor tells us rather what he does not hold than what he does hold. Possibly many infer his meaning rather from what certain of his school maintain, or are said to maintain, than from anything that the Professor himself has asserted. Indeed, to judge precisely and fairly of his sentiments, we ought to have read attentively not only what he has stated, but the statement or assertion to which his own is intended as a reply.

The question at issue is doubtless one of those very points in dispute, upon philosophic topics of high interest, and an abstruse character, which are necessarily incapable of absolute proof either on one side or the other. We cannot adduce conclusive evidence that the soul is not, as Professor Tyndall is supposed to assert, or to mean, the result of organisation; nor can Professor Tyndall, or any one else, prove conclusively, that it is, or that it is not so. Properly, and philosophically, the theory on one side ought to be proved, or apparently so at all events, before any disproof of it is demanded. Argument and conjecture are, however, the utmost that can be supplied on either side.

There are, nevertheless, two grand arguments against the theory of Professor Tyndall, which are as follows: 1. That organisation itself is incapable of supplying a soul. 2. That spirits exist independent of organised powers.

1. As regards the first of these arguments, it may reasonably be contended, that if organisation itself, or the mere structure of the brain, either constituted or conducted to, the formation or existence of a soul, a dead body, so long as its organisation remained complete (in the case, for instance, of death being produced by poison or suffocation, which would not destroy or affect organisation, especially of the brain), might, and indeed must necessarily be endowed with a soul equally with one that is alive. And, further than this, that you could only get rid of, and extirpate the soul from such a body, by de-

stroying, or rendering the latter unfit for organic operation ; whereas we know by daily experience, and have indeed conclusive evidence, that the separation of soul and body is caused by several acts and operations, which do not seriously affect, or at all events destroy, the organic mechanism of the body or the brain.

2. The existence of spirits is disbelieved by many, but this opinion is neither proved nor disproved absolutely. The subject is open to argument ; so that a belief, and one very positive and confident, will be held by persons on both sides. It is after all but a mere matter of conjecture.

Those, however, who do believe in the existence of spirits, must necessarily also believe in the existence of the soul, and they must believe, also, that it exists independent of organisation, or of the material frame. Nevertheless, the argument in favour of the existence of a soul does not depend on a belief in the existence of spirits, although that belief affords much additional weight to it. Moreover, those who deny the existence of a soul hesitate not to admit the existence of mind and intelligence, and which they contend that a soul of the order they suppose (which is the mere product or result of the organisation of a material frame), is adequate to produce.

The point, however, which appears to me to be that of the greatest interest connected with the subject now under discussion, is not whether the soul is the mere result of a certain bodily organisation,—a tenet which, although it is held by some acute and able materialists, appears, on the ground already stated, to be too entirely at variance with reason, and with all that we know of intellectual operations, to be entitled to serious belief ; is, supposing that the soul does exist of itself, and as an independent being, what is the substance, or the nature or quality of the substance, of which we may most reasonably infer that it consists ?

The two leading and opposite theories on this subject, which have been advanced, or perhaps the two opposite conclusions to which these theories lead, are that the substance of the soul consists of actual gross matter of some sort ; and, on the other side, that it is a purely spiritual, and absolutely immaterial being, having neither substance nor matter of any kind attached or belonging to it, and is, in fact, a mere phantom of the mind, or creation of the imagination.

It has occasionally happened, that the mode of conducting an argument in favour of different opinions or theories, has ultimately led to results on each side exactly the opposite to what had been intended. Thus, urging to an unwarrantable extreme

the doctrine of the absolute immateriality of the soul, has led to the conclusion of its non-existence, and to the substitution of absolute materialism as the preferable theory of the two, being in reality better than the *nihilism* to which the former theory tends. So, in theological disputation, it has not unfrequently happened, that the pushing of one doctrine to an unwarrantable extreme, has eventually led to the adoption of the opposite opinion.

Another frequent cause of error, both in philosophy and theology, is the want of a precise and accurate definition of terms. Persons diametrically opposed to each other in argument, very often mean the same thing in reality, although they attach different terms to the subject in dispute. So as regards the soul; the terms materiality, immateriality, matter and spirit, being and substance, have very different significations in the mind of one person to what they possess in that of another. Indeed, how many railings, bickerings, furious contentions, bitter persecutions, revilings, torturings, and executions of every variety, have taken place, not at all because the contending parties have really in the least disagreed about the essential matter in dispute, but because, in the blind heat of the contention, they affixed different and even opposite meanings to one and the same subject.

Before we assert the soul to be either material or immaterial, spiritual or substantial, we should first determine and define the meaning that we attach to these different terms, some of which are capable of very wide and very various interpretations. Thus, the words spiritual and immaterial do not necessarily always imply the entire and absolute absence of matter and substance, and of all the properties belonging to them. Spirits, which are said to be immaterial, have generally ascribed to them certain attributes of matter—and of gross matter too—such as form, and visibility, and locality, and space. Certain persons, however, in their ardent desire to prove the soul to be an immaterial being, and to be wholly independent of matter, reduce it to a mere nonentity, and deprive it of all real substance, all actual existence whatever. It must be borne in mind, nevertheless, that if the soul is purely or absolutely immaterial, it can have no relation to space; and that if it has no relation to space it cannot reside, or be comprehended, in the body. And if it cannot be comprehended in the body, it makes no difference whether a man be alive or dead, as in both cases alike his soul exists, although in the one case it is separated from, in the other resident in, the body. Moreover—

“If the soul be contended to be strictly immaterial, and

to be constituted of no substantial parts or elements, then, as already stated, must it exist merely as an idea or creation of the imagination, as an axiom or principle in science may be said to exist, but which has no real being, is only created by the will of the individual in whose mind this term is concocted, and which may be for ever forgotten and lost by the next action or impulse of the mind. We can never, however, be satisfied to consider the soul of so futile a nature as this ; and yet of this character it necessarily must be if it is allowed to have no material or substantial element in its constitution. Consequently, I conclude, on the whole, that it is most in accordance, both with what we know upon the subject, and also with reason, to suppose that the soul is, to a certain extent, material, or constituted of material substance, although that substance must be presumed to be absolutely pure and uncompounded like a single elementary particle in the formation of ordinary matter, which is in and of itself indissoluble and indestructible, while the being of which it is a compound, may be dissoluble and destructible, so far as regards the separation of its elements." *

"Different substances, which are each essentially material, differ from one another as regards their active properties and powers, as much as we can conceive some material and some immaterial beings to do. While certain of the former kind consist of a substance very gross and inert, others appear to be possessed of very lively and active properties. Nor is it unreasonable to suppose that, as in the other departments of nature, the precise line of demarcation between some animals and some vegetables, and between some vegetables and minerals, can scarcely be traced ; so that between some material and some immaterial beings, it can, with difficulty, be defined. Because some matter does not think, it does not follow that no matter, however modified or endowed, cannot do so. Because some matter is not capable of growth, or susceptible of change, it does not follow that all matter is incapable and unsusceptible of these operations ; and several of those writers who contend most vehemently for the absolute immateriality of the soul, admit their belief that it has for its seat the brain, within the precincts of which it is therefore confined.† And thus extension, which is one of the characteristics of matter, is admitted by them to belong to the soul." ‡

* Harris's "Treatise on Man." Vol. 1, pp. 79-80.

† Descartes held these two opposite and inconsistent theories.

‡ See Harris's "Treatise on Man," pp. 75-76.

Certain persons, indeed, in their ardent desire to prove the soul to be an immaterial being, and to be wholly independent of matter, reduce it to a mere nonentity, and deprive it of all real substance, all actual existence whatever. Those, however, who contend that the soul is so extensively and absolutely immaterial as to possess nothing whatever of substance, or even of being (as already pointed out), reduce it to a mere idea, so that it exists in the mind only, and but abstractedly. It may, indeed, be replied that, although the soul is no more material or substantial than a mere idea of the mind, yet that it differs essentially from the latter in possessing important powers and energies, by which it can affect and excite both itself and other beings; thus at once allowing that it must necessarily possess something of substantiality and materiality—that is of reality—in itself, in order to accomplish these operations, and, consequently, that it cannot be merely immaterial, unsubstantial—that is, an abstract and essentially non-existing being—a mere chimera of the mind. If, moreover, the soul is but a mere chimera of the mind, it can be created by the mind at pleasure, and at the mind's pleasure can be destroyed; so that, instead of being of all things the most absolutely immortal and indestructible, it is in reality the least so, and is ever ready, and from the slightest cause, to perish. On the other hand, if the soul is something more than a mere idea or chimera of the mind, it must necessarily have some actual existence; and if it has some actual existence, then must it necessarily possess a real being, in order to which substantiality and materiality of some kind, and to some extent, are absolutely essential.

Considering the whole matter, it seems to me, indeed, to be an absolute necessity that the soul, if it be a really existing being, must have a certain amount of actual material substance in its nature and essence. There must be something that exists in what we term the soul, beyond the mere idea of it which we form in the mind; and, as already observed, this mysterious, but not the less real, being, if it resides in the body, as it is contended to do, and supposed to do by all who believe in its existence, must necessarily possess the material qualities of space and extension. Nor is there, in reality, any less difficulty in supposing mind and matter to be united, and that mind derives its ideas through matter; than in believing matter itself, under certain modifications, to be endowed with intelligence, or the power of receiving ideas, or of thinking.

On the whole, it appears to me that the most sound and

rational view to be taken of the whole subject is, that the soul exists as an independent being, that it does not spring from, or depend on, organisation, or the structure of the brain; that it is not, on the other hand, a mere nonentity, but that it consists of some substance of a very refined and ethereal nature, to which it does not seem unreasonable to suppose that intelligence may be attached. And this, moreover, appears to me to be the conclusion at which, after careful research and deep thought, the greatest philosophers, both in ancient and modern times, have arrived.—*Modern Thought.*

THE FACE AS INDICATIVE OF CHARACTER.

THE EYES AND EYEBROWS.

As it has been necessary to mention the muscles which move the eye and the eyelids, it may be well to briefly describe them. The first one raises the upper eyelid; the second draws the globe of the eye directly upwards; the third draws the globe downwards; the fourth draws the eyeball towards the inner angle of the eye; the fifth is opposed to the latter and draws the eyeball outwards. Besides these there are two others affecting the eye, the office of one of which is to roll the

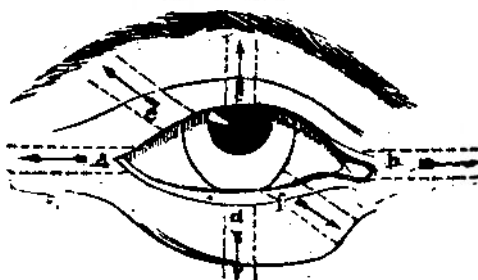


Fig. 69.

eyeball inwards and forwards, while that of the other is to roll the eye outwards and backwards. The action of these various muscles is shown in the annexed diagram (Fig. 69). Thus *a* represents the muscle which draws the eye outwards, *b* that

which draws it inwards, *c* that which draws the eyelid upwards, and *d* that which draws the eye downwards. These muscles are of the class known as voluntary, that is, they act in obedience to the will, although subject to that kind of involuntary action which comes from repeatedly acting in a certain manner. Thus the action of turning the eyes up in a prayerful mood, and downwards in a humble frame of mind, though originally voluntary, become in time involuntary.

The other two muscles of the eye, however, are involuntary in their action, and govern the movements of the eyes in sleep, in somnambulism, ecstasy, trance, and similar abnormal states of the system. When the straight muscles cease to act, from whatever cause—wonder, rapture, fright, terror, or other con-

dition—these oblique muscles come into play, and the expression produced is in accordance with the extent to which the will is subjected to the feeling which for the time being dominates. Thus, in timorous persons there is an unsteadiness of the eye ; in the fearful an actual rolling of it. Drunkenness produces a similar effect. Sir Charles Bell says : " In the stupor of inebriation, the voluntary muscles of the eyeballs resign their action to the oblique muscles, which, as we have seen, instinctively revolve the eye upwards, when insensibility comes on. At the same time the muscle which elevates the upper lid yields, in sympathy with the oblique muscles, to the action of the orbicularis (round muscle), which closes the eyes, and the eyelids drop. The condition is, in short, the same as that of falling asleep, when the eyeballs revolve as the lids close. It is the struggle of the drunkard to resist, with his half-conscious efforts, the rapid turning up of the eye and to preserve it under the control of the voluntary muscles, that makes him see objects distorted, and strive, by arching his eyebrows, to keep the upper lid from descending. The puzzled appearance which this gives rise to, along with the relaxation of the lower part of the face, and the slight paralytic obliquity of the mouth, complete the degrading expression."

Any dominating power, superior to the will, has the effect of producing a rolling or roving action of the eye, and this is one of the signs which should be taken the greatest note of. Better a rolling stone than a rolling eye, is an aphorism worthy of every discreet maiden's attention ; and every bachelor's, too, for the matter of that ; but we commend it in particular to the gentler sex. There are eyes which, so to speak, throw out signals of warning.

" Eyes," says the Father of Physiognomy, " which, in the moment when they are fixed on the most sacred object of their adoration, express not veneration and inspire not seriousness and reverence, can never make claim to beauty, nor sensibility, nor spirituality. Trust them not. They can neither love nor be beloved. No lincament of the countenance full of truth and power can be found with them. And which are such eyes ? Among others, all very projecting, rolling eyes, with oblique lips ; all deep-sunken, small eyes, under high, perpendicular foreheads, with skulls having a steep descent from the top of the head to the beginning of the hair,"—with the organ of Benevolence small, in other words. The more powerful emotions dominate the will for the time being, and affect the involuntary muscles. The emotion of Rapture, which is akin to prayerfulness or veneration, draws the eyes upwards and outwards ; that of Wonder turns them

outwards, and gives them the expression of looking at something at a distance. Terror draws the eyes inwards, and gives them a squinting expression.



Fig. 70.

Eyebrows which show a downward indentation just above, or a little inwards of the pupil of the eye, are indicative of a revengeful disposition (Fig. 70). Lavater says: "Thick, black, strong eyebrows, which decline downwards, and appear to lie

close upon the eye, shading deep, large eyes, and accompanied by a sharp, indented, uninterrupted wrinkle of the cheek, which, on the slightest motion, manifests contempt, disdain, and cold derision, having above them a conspicuously bony forehead, are only to be consulted for advice when revenge is sought, or the brutal desire of doing injury to others entertained." He here signalises the presence of revenge in conjunction with a coarse, motive temperament.

Some of Lavater's notes on eyes are very apt, and worth remembering. He says: "Eyes that are very large, and at the same time of an extremely clear blue, and almost transparent when seen in profile, denote a ready and great capacity; also a character of extreme sensibility, difficult to manage, suspicious, jealous, and easily excited against others; much inclined likewise by nature to enjoyment and curious inquiry. Small, black, sparkling eyes, under strong, black eyebrows, deep sunken in jesting laughter, are seldom destitute of cunning, penetration, and artificial stimulation. If they are unaccompanied by a jesting mouth, they denote cool reflection, taste, elegance, accuracy, and an inclination rather to avarice than generosity. Eyes which, seen in profile, run almost parallel with the profile of the nose, without however standing forward from the level of the head, and projecting from under the eyelids, always denote a weak organisation; and, if there be not some decisive contradicting lineament, feeble powers of mind. Eyes which discover no wrinkles, or a great number of very small long wrinkles, when they appear cheerful or amorous, always appertain to little, feeble, pusillanimous characters, or even betoken total imbecility.

Eyes with long, sharp, especially if horizontal, corners—that is, such as do not turn downwards, with thick-skinned eyelids, which appear to cover half the pupil—are sanguine and indicative of genius. Eyes which are large, open, and clearly transparent, and which sparkle with rapid motion under

sharply delineated eyelids, always certainly denote five qualities: quick discernment, elegance and taste, irritability and pride, and most violent love of the opposite sex.

The more the upper eyelid, or the skin below or above the ball of the eye, appears projecting and well defined, the more it shades the pupil, and above retires under the eye-bone (Fig. 71), the more has the character of spirit, refined sense, amorous disposition, and true, sincere, and constant delicacy. Eyes which show the whole of the pupil, and white below and above it (Fig. 72) are either in a constrained and unnatural state, or only observable in restless, passionate, half-simple persons; and never in such as have a correct, mature, sound, unwavering understanding. Fixed, wide open, projecting eyes (Fig. 73) in insipid countenances, are pertinacious without firmness, dull and foolish with pretension to wisdom, cold, though they wish to appear warm, but are only suddenly heated, without inherent warmth.



Fig. 71.

A clear, thick, roof-shaped, overshadowing eyebrow, says Lavater, which has no wild, luxuriant bushiness, is always a certain sign of a sound, manly, mature understanding; seldom of original genius; never of volatile, aerial, amorous tenderness, and spirituality. Such eyebrows may indicate statesmen, councillors, framers of plans, experimentalists; but very seldom bold, aspiring, adventurous minds of the first magnitude.



Fig. 72.

Horizontal eyebrows, rich and clear, always denote understanding, coldness of heart, and capacity for framing plans. Wild eyebrows are never found with a mild, ductile, pliable character. Eyebrows waving above the eyes—short, thick, interrupted, neither long nor broad—for the



Fig. 73.



Fig. 74.

most part denote capacious memory, and are only found with ingenious, flexible mild, and good characters.

Eyes with weak, small eyebrows, with little hair, and very long concave eyelashes (Fig. 74), denote partly a feeble constitution of body, and partly a phlegmatic, melancholic weakness of mind.

Mr Charles Darwin has some striking observations on the

eyes in his interesting and original work on the "Expression of the Emotions in Man and Animals," and although he treats of the transient rather than of the permanent signs of emotion, yet it is highly instructive to read his observations, because they show how the expression of a feeling is gradually stereotyped as it were, and becomes in the long-run a permanent sign of the latent power of that feeling, or, in other words, a sign of character. We shall have more to say on this subject in another chapter, when we come to speak more particularly of expression.

THE FORMATION OF THE VOICE IN SINGING.

BY EDWARD FRANKEL, M.D.

The tones of the voice, which do not, like strings, increase their pitch in proportion to the square of their tension power, vary in a range of about two octaves, and this is about the range of the natural human voice. If we take an excised larynx, and subject the vocal chords to a very low degree of tension, we can produce two entirely different registers of tones: First, tones, generally deeper, which have a complete identity with the *chest-tone*; others, higher, which according to the Italian school of singing are called *head-voice*; and lastly, the highest tones, which in their sound completely resemble the falsetto. When the vocal chords are put to a certain degree of tension, the force of gaseous or breath pressure being strong or weak, a falsetto tone is always produced; but when the tension is slight, the character of the tone, whether chest or falsetto, depends entirely upon the aerial pressure which is brought to bear on the vocal chords. The falsetto is produced when the aerial pressure is least, and in this condition of the vocal chords is also revealed the fallacy of the older theories which held that the falsetto tone could be compared to the "harmonics" of the violin, to the vibration of the aliquot parts of a string. In both cases, in the production of chest-tones and falsetto, the vocal chords vibrate throughout their whole length, and the essential difference between these registers is, that in the case of the falsetto, only the free edges of the vocal chords vibrate, while, when the chest tones are sung, the chords are in full and entire vibration. Therefore, the lower vocal chords by their vibration alone are the organ of voice; the parts placed above them, and the relative width of the rima glottidis, have no influence on the production of the tone or pitch of the voice.

Chest and falsetto tones only differ from each other according to the *degree* of vibration, whether the whole vocal chord be in vibration or only its free edge.

In addition to these registers there is one not accepted by all physiologists and teachers, but which was recognised in the old Italian school of singing and has not been surpassed by any later methods. This is called the *head-voice*, to which Haeser first drew attention. When the vocal chords in singing a chest-tone have attained their most extreme tension, higher tones can be sung without passing into the falsetto, and this is accomplished by a contraction of the space immediately below the lower or true vocal chords. Here there is a muscular layer which is attached to the arytenoid cartilages, and when this muscle contracts, the lower aperture of the larynx is diminished in size laterally. The effect is, that the tones increase in pitch and at the same time assume a softer *timbre* and are less resonant; the latter fact might perhaps be explained by assuming that the muscle which is intimately joined to the outer fibres of the vocal chords acts as a sort of damper on their vibration. A contraction of this muscle will increase the tension of the vocal chords, and consequently a higher tone can be sung than with the chest-voice. When the larynx is compressed laterally in the region of the vocal chords, the so-called "head" tones can be sung to the extent of an octave or more beyond the ordinary chest register. And these tones are different from those of the falsetto. Furthermore, if you will place your finger on the thyroid cartilage while you sing head-tones, you will feel that the cartilage contracts from side to side; and if you continue the contraction with your fingers you can still add perhaps one head-tone. But this experiment is neither advisable nor agreeable. The chief difference between the chest and head-voice in addition to the higher pitch of the latter lies in the *timbre* of the tone, and of this latter difference the experienced singer avails himself to give varying expression to a note, whether uttered by the chest-voice or head-voice, and to pass from one to the other, seemingly unconscious and often not appreciated by the inexperienced listener. We not unfrequently hear singers utter chest-tones which are by some considered as evidence of extraordinary powers, but are a transgression beyond nature's limits, and this "forcing" of the voice sooner or later will irretrievably injure the head-voice or so-called middle register, will render it dry, uncertain, and devoid of its peculiar more delicate metal. There is no lack of examples among public singers to prove that many naturally beautiful voices have been recklessly ruined in this manner.

The parts which lie above the larynx, while having nothing to do with the generation of the voice, are essential in the determination of its quality and resonance and artistic usage. These parts are the uvula, the tonsils, the palatine arches, the soft and hard palates, the cavities of the nose, the tongue, and the cheeks and lips. The palate forms a septum between the cavities of the nose and mouth. Anteriorly, the hard palate, or roof of the mouth, consists of a thin, sieve-like, bony partition, covered by mucous membrane, which is a kind of sounding-board to the voice. In the middle of the soft palate we find a triangular-shaped prolongation, the uvula, which gives firmness to the voice and its articulation, and hence is of considerable importance in coloratura passages, when it takes on a motion of very rapid alternate shortening and extension. The tonsils, placed on either side of the throat, immediately under the palatine arches, serve to render the throat passages moist, soft; in other words, lubricate the parts. A proper use of the tongue, and a normal condition of both rows of teeth, and the cheeks and lips, have some influence on the quality or timbre of the voice, therefore, in order to sing well, these parts must be in a normal condition. The cheeks serve the purpose of giving roundness and body to the voice; some singers attempt to aid this purpose by crowding the tongue as far back as possible. The teeth add to the metallic quality of the tone, while the lips act as dampers; the acuteness of a tone is assisted by a firmly-set lip, while a flaccid lip serves to dampen the tone.

When the voice is directed directly upwards into the nasal cavities or posterior nares, which lie between the mouth and the anterior nares, the three spongy bones which are situated in these cavities give rise to the disagreeable nasal voice.

The nerves which control the production of the voice, are branches of the eighth cranial nerve, or the pneumogastric, which supplies the external ear, the pharynx, larynx, trachea and oesophagus, the heart, lungs and stomach, and by its connection through the spinal accessory nerve, imparts sensation and motion to the parts mentioned. In consequence of its extensive distribution, it is easily understood how the voice can suffer by sympathy, if any of the parts supplied by this nerve are the seat of irritation or disease. It is a well-known axiom, for instance, that one should never sing immediately after eating.

In the above remarks, I have stated the results of only such investigations, a knowledge of which is of importance

and assistance to the pupil in properly educating his voice. The later researches of Helmholtz, Tyndall and others, have not been referred to, because they do not come within the scope of, and are not called for in a popular, essay of this character. Nor have I mentioned numerous theories, which were created to please the peculiar notions of some teachers who may have imagined a state of affairs existing in the formation of the voice, agreeable to themselves. The co-ordinate action of various organic forces cannot be entirely revealed to the eye or mind, in spite of all observations by the laryngoscope, and otherwise, instituted on the living or dead larynx. It is the experienced teacher and singer alone, who, qualified by scientific and artistic knowledge, by close observation of the relative condition of a vocal apparatus, during rest and in activity, may be able to conjecture the combinations and mutual relations of the parts subjected to his instruction.

Voices are divided, according to the sexes, into two classes. Each of these is subdivided into three classes, the high soprano, mezzo-soprano and alto in the female, and the tenor, baritone and basso in the male. The difference between these depends on the relative structure of the vocal organs, just as the violin, viola, violoncello and bass-viol differ from each other. The range of the human voice, speaking only of the great majority of voices, not of those artistically developed exceptions, whose range is sometimes considerably more extended, is about two octaves.

A voice cannot be classified from the range of its tones alone, nor from its sound or *timbre*. For, aside from errors of intonation, which often render a judgment exceedingly difficult, the sounds of different voices, especially in females, often appear to be almost identical. In male voices, the difference between the tenor and basso is more easily distinguishable, less so in the case of the baritone, though it not unfrequently happens that a voice, which has not yet passed the period of mutation, may sound like a bass, though it may ultimately develop into a tenor. The criterion by which a voice is properly classified, consists in letting the pupil sing the natural tones of his *chest-register*, naturally and without exertion. Every teacher should oppose the vanity which many pupils possess, and the persistency with which they strive to become high tenors or sopranos. If not checked in time, such persistence will inevitably cause a destruction of the voice, and possibly also lead to conditions of disease.

There still remains one matter for our consideration, and that is regarding the period at which the development of the

voice for song should begin. Instruction begun too early, is always, though a few rare exceptions may appear to establish a contrary rule, harmful for voice and health. I do not mean by this to say that the voice of the child should not in earlier life be encouraged. The lullaby with which the loving mother sings her child to rest and encourages it to play, is the first delicate culture of musical sense, and the childish desire to give utterance to its cheerfulness in inartistic song should be encouraged in every way; this is a gymnastic for the entire vocal apparatus, and at the same time the incentive to the cultivation of musical hearing and æsthetic sense. But there should be no systematic instruction before the tenth year; even at that age it should be conducted with the greatest care and consideration, and its object should be mainly to assist the natural development of the vocal organs.

Regular instruction can and ought only to be undertaken after the natural development has been completed. The time of puberty—that time of life when the boy becomes a youth, the girl a maiden—exercises an essential influence on the relations of the vocal parts. The voice, hitherto moving in higher registers and often developed especially in boys to an extraordinary range of fulness and brilliancy, becomes flat, often hoarse, devoid of timbre, and even screeching in its character, and then gradually passes into the more sonorous, strong and lower registers. This is called the mutation of the voice. When the natural, normal process of sexual development is disturbed in any way, abnormal vocal conditions are engendered. Males, in such cases, acquire a higher vocal register with a peculiar timbre, while females acquire a deep, strong baritone voice. During the period of mutation in boys the larynx begins to grow considerably in all its parts; by this growth of the soft parts a soprano is changed (occasionally in the short space of eight days) to a tenor or bass. But the cartilages of the larynx, to which are attached the vocal chords and by them rendered tense, do not develop with equal rapidity; the vocal chords are very relax (hence the frequent so-called breaking off of the voice of singers at this period), and the voice is therefore remarkably low, sometimes for several years, until the time when the cartilages have obtained the full size of maturity. It is thus, that after the period of mutation, a soprano voice will for a time sing tenor, and this gradually passes into bass; these youthful bassos seldom have good upper notes, but they acquire them later on, though it sometimes occurs that a good tenor is developed out of an imperfect basso. Now, it is not necessary to cease

vocal instruction entirely during the period of mutation—females, however, demand more delicate treatment at certain times—provided the instruction be conducted in a careful, theoretical and practical manner.

As soon as the voice begins to confine itself to the limits of only an octave, or complete breakage of every tone takes place, all instruction should cease. In the maiden, the larynx undergoes but a moderate increase in volume, but gains considerably in the firmness of its cartilages, and those of the trachea and in the development of the muscles, vocal chords and nerves. The completion of the period of mutation generally requires from two to three years, and then only should be commenced the really artistic development of the voice, for then the singer can fall back on the support and strength of the entire organism without danger of harming or debilitating it. The time of this completion can be assumed (but only from a general stand-point, there being many exceptions), to be in females about the sixteenth year, in males never before the seventeenth and often not before the nineteenth year. If this interval has been preceded by careful and thorough preliminary instruction in the boy and the girl, the complete development of the voice will occupy a comparatively short time (perhaps only two or three years) provided there is no lack of ambition, talent, industry and mental comprehension, without which aids no teacher can hope to accomplish a satisfactory result.

LECTURES ON PHRENOLOGY.

BY DR. SPURZHEIM.

LECTURE VIII.

I have now to consider certain feelings which, in my opinion, are of the highest importance—feelings which have produced great disorders, and which, I fear, may still do so, but which, when well regulated, become the greatest blessings to mankind. I have called your attention, in the first lecture, to the relative development of the different parts of the head; I have mentioned them. No given configuration is of much importance but that. Thus, we have to inquire, what is the proportion of the upper to the lower part of the head? since we find that in many heads the lower region is much more developed than the upper, and that in others there is as much brain in the upper as in the lower part; and that there is,

again, in some individuals, more brain at the upper part than at the lower. We have also seen that it is necessary to look to the whole size of the upper part; and you will find, in some individuals, the head is more developed anteriorly than posteriorly: in others, more in the centre than either anteriorly or posteriorly; and in others again, more posteriorly than in the middle or anteriorly; and there are some quite depressed in the centre and elevated anteriorly and posteriorly. Every one may observe these differences, and I am sure that among the persons present the greatest variety will be found to exist; hence there can be no doubt that the different parts of the brain, placed in the upper region of the head are differently developed. Is it indifferent whether we have much brain at the top or little? Is it a thing indifferent whether we have more brain in the front and upper part, or in the posterior and upper part? Observations and experience must decide.

VENERATION.

I stated the last time I met you, that we look here for the organs of the moral and religious feelings, since phrenology admits that man is by nature a moral and religious being. I hope no one will find the least difficulty in admitting this. I know that several persons have thought that such a doctrine must be dangerous, but we also know, that new doctrines have at all times been thought dangerous by their adversaries. We know their reasons, but we wish all those who hesitate to consent to reflect upon the point, because you must always recollect, that we do not create any powers as phrenologists; we only observe the operations of those powers which already exist, and when we see certain beings manifest feelings disposing them to certain actions, we admit the existence of such feelings. I do not know whether you ever noticed it or not, but there are children who, from their infancy, show themselves more disposed to religious considerations than others. If you consider the subject in a philosophical sense, you must allow that the Creator has communicated to man important faculties by which he is prevented from being given up entirely to his animal nature. Nature has taken care of man as an animal, and has given him certain powers to enable him to do so; and do you think that the Creator has given up man in the more important feelings to his own caprices? I will endeavour to explain what I mean.

You will find among all professions, and especially our own, persons who wish to be the masters of nature; and you will

meet with some who will say, "We are the masters of nature, and nature has no rule;" but this error may be exposed easily, for we all know that we suffer from diseases, and frequently cannot obtain relief; and I am sure every scientific physician will admit this. There are those who say, that eminence in the arts and sciences may be acquired by education; that, in fact, education can do every thing, and that man is a moral and religious being from education. We pay masters great sums of money for the education of our children, hoping that they may acquire the talents, and we find often that, in the end, money and time are all lost; so that we see that even great masters cannot give the talents; but where there are natural dispositions for them, they may be cultivated, and so give excellence. Now, in the same way man is a moral and religious being; he has these natural dispositions, and if he take care of them and cultivate them, they prove to him the greatest blessings which the Creator has conferred. Education improves and cultivates the talents, but it can never bestow them. If education can impart talents to beings without any predisposition on their parts, why not teach religion and mathematics to our domestic animals? It is impossible to instruct any being in that which he is not prepared to receive; hence I speak of certain natural dispositions, called moral and religious.

I have spoken in a general way of several sciences, and I come now to speak more particularly of religion. Is there one fundamental power in mankind which predisposes to the actions called moral? Dr. Gall speaks of the organ which I have named the organ of Benevolence as the seat of that feeling. If we examine mankind, however, it is impossible to acknowledge that all their actions are the result of benevolence. Do not confound the opinions I advance; I repeat, therefore, and say, that I admit the existence of a moral feeling in man, and I am of opinion that the morality of man may be explained as an individual primitive power. I admit benevolence as a fundamental power, the organ of which is quite ascertained. I know persons who spend their time and fortune in doing good to others, and you will find in them the part of the head I have before described as the organ of Benevolence much developed, whereas the contrary characters, persons who are selfish in a high degree, have that part much less developed. I will admit that sometimes very benevolent persons may become, by their benevolence, unjust; on the other hand, we find persons very just, but at the same time very severe. In legislation there have been courts of equity established favourable to benevolence, but in

courts of absolute justice there is no exercise of any such feeling. Again, we may have a sense of morality and justice in the highest degree, and yet not be benevolent; and we may steal from others and cheat others, and yet be benevolent; there is no proportion between these feelings. I shall speak of several feelings given to man to regulate his actions with reference to other persons, and in the same way I cannot admit only one fundamental feeling to produce all the manifestations of man, called religious.

Veneration is a feeling given to man in order to guide him in his actions, to modify his actions: a feeling which may be sometimes called religious and sometimes moral, because the same feeling is applied to man, to our neighbours, and is also applied to higher conceptions, to supernatural conceptions. I have shown you a difference, but I repeat that I do not



Veneration large.

speak of determinate actions, nor do I speak of a determinate religion, whether of the Jewish, Mahometan, or Christian. We know that the Christian religion impresses morality; but phrenology cannot decide for you what religion you are to choose; it only asserts this, that there is a feeling given to man which induces him to pay attention to supernatural religion. All natural philosophers have admitted that men have instincts which lead them to have communication with superior beings. It has been attempted to deduce these feelings from reasoning, but in the dark ages of the church, when there was very little reasoning admitted into their worship, we find that this feeling of devotion, of attachment to superior beings, existed in a high degree. Reason, however, is cold, we want a warmer impulse; if we were to act from reason merely, we should do very little. I put it to any one of you now, whether you do not find feeling the first motive in all actions, not reasoning? If our feelings were the result of reason, then we should act differently; but I have to show you that the feelings are all blind, from the highest to the lowest, without any exception. Benevolence

is blind in itself; if you were guided by benevolence alone, you would commit mistakes; you cannot prevent errors by mere benevolence, and so of other feelings which have been called moral and religious; they must be guided by and combined with reason, but the feelings themselves are not the result of reason, nor is reason the result of the feelings. You may see very good-natured men, and you may like to be in their society, but you can place very little confidence in their judgment.

Dr. Gall thinks that the feeling of religion is attached to the cerebral part which is situated in the upper middle line of the head; he calls it the organ of Religion. I have seen, however, individuals who have had this cerebral part very much elevated, and yet have not been religious. We see some persons who are very much attached to what they call faith in religion, and pay little attention to works; whilst others do not care what their belief may be; they do not consider the fundamental condition of salvation to depend upon belief, but regard works more. Some persons are particularly attentive to what they call worship, to do what they consider pleasing to a Supreme Being; but recollect, I do not speak of any peculiar kind of worship, or of any determinate adoration, whether of the Jewish or any Christian sect; I speak only of fundamental feelings which dispose men to reverence, to pay respect as well to a superior being as to beings around us.

We may pay respect to our ancestors, or to our parents, or to old opinions, if you please, and there are many men who very much respect them; so that you see I cannot speak of its application; it seems to me a fundamental feeling, and if we admit the Cause of all causes, we shall pay to it the greatest respect. Determinate lessons are given to us from infancy to adore a superior being, and therefore some say, there is no proof that this feeling is given by nature; but observe such as receive no such lessons, and you will see that to adore, to venerate superior beings, and to respect beings around us is a fundamental feeling; and that feeling, like all others, is blind. We know that the ancients venerated objects, and that savages do still, which a reasonable man cannot respect, such as animals, the sun, moon, stars, and so on. Look at those men most disposed to veneration, but yet being of different opinions as to the application of it, does not the one sect complain of the other's doing things not to be admitted by reason? It must be left to every individual to determine in what way he will adore; phrenology cannot decide this; it can only point out the disposition which in-

fluences man to do so. Some individuals say that, having this feeling, no man would be an unbeliever. This feeling is not important to cause a man to believe, for I have seen persons who have had this feeling strong, and yet not shown great belief in holy things, and even some who will believe nothing without their own investigation and inquiry will have this part of the head very high.

If I see a person whose head is developed highly at the upper part, I admit that he is good natured, but what application he will give to this feeling I do not know. We often find that the anterior part is high and the middle is depressed. The posterior part is high in others, and when you find the posterior part high and the middle depressed, you may be sure that the individuals are not much inclined to worship in any religion; they might worship from a sense of duty, or to show an example to others, but if they were to consult their own feelings, those I mean who are depressed here (in the middle), they would say, if they could abstain from doing it they would. The individual feeling must be directed in this, as in any other power: respecting, for example, acquisitiveness, the law is given, "thou shalt not steal," and so here I speak merely of the natural disposition, not of its application. The anterior part is the organ of benevolence; the middle part is that which gives rise to feelings called moral and religious, inclining us to respect beings around us, and to pay veneration to supernatural beings or to saints; but there are some persons in society to whom nothing appears worthy of respect.* Veneration is a feeling productive of good to society, and one of those which exercises a sort of control over the lower feelings.

FIRMNESS.

I come now to a power which has hitherto been too much confounded with the will, and it appears to me to have been so confounded because will itself has been expressed by different names. Phrenology, however, makes a distinction, for it will be seen that the feelings have been considered as so many species of will, from the highest to the lowest. If you study all philosophers, even Locke, who have studied the powers of the mind, you will find that they have divided the mental operations into two great classes—the understanding and the will; but sometimes the will is good and

* There is, as some think, a distinct division in the organ of Veneration, the anterior part giving respect for persons and institutions; that is, it concerns itself with things human; while the posterior part of the organ gives reverence for the Supreme, and inclines to submission to a divine mind and will. Mr. Fowler divides the organ into three parts. (See his new bust.)

sometimes bad, because we do not know what the will is. We find that some persons talking to others, or making known their wishes to others, will say, "I will that such a thing is done; I will this or that;" but if you ask them, "What do you mean by saying you will?" "Why, that I will," they say. They are inclined to speak generally in an imperative way; they say, I command, or I insist, not I desire, or I request; they feel that strong inclination to exert authority, and to speak with great decision. If you know such a person who has a strong desire to have command, and if such power be combined with self-esteem, they will be sure to obtain it somehow or other. If I observe a person studying phrenology going on very well for a time with it, and then starting objections, which naturally occur to a beginner, and if I see him consider and overcome such objections, I could say, "Let me examine such a person's head," whether there is any development of the power I speak of. But if, on the other hand, I meet with an individual who will admit every thing, and make no objections to what I say, I should not expect to find much of this power in him, and would rather see an individual make objections and investigate the subject; I like that better.*

I like to see the power of firmness; it is the basis of the love of independence. I like to see the organ well developed, and I like to see the surrounding parts also well developed, for if this power be active alone, and be not in combination with other powers, or in harmony with other powers, abuses are the result. We have seen that benevolence alone produces abuses, and that veneration alone produces abuses, even superstition in the highest degree. Firmness is so important in nature, that nothing can be done without it. I am sure, that if we had not shown some firmness in our support of phrenology, it would have been dropped long ago. If the power goes alone, then stubbornness and obstinacy are the results. In such a head as this (in which the organ was very much elongated, the surrounding parts flat) I should say that stubbornness and obstinacy prevailed. This power has nothing to do with any philosophical knowledge, although it is often confounded with the will. Many persons are ready to undertake things, but they never overcome them; if any little difficulties occur, oh! they give up.

* Some difference of opinion obtains among phrenologists with reference to the functions of Firmness; some thinking it gives will pure and simple, while others believe it does no more than hold the mind to the determination come to by the will, which may be taken as the impulse given by the sum of the faculties acting together at a given time. This is the view taken by Spurzheim, and on the whole it seems to be the most reasonable one.

I shall show you a head just to try you. Now what would you think of such a head for perseverance? (Showing a cast.)

You would not judge much of it; and this is generally the case where the middle is depressed and the posterior part of the head is high. Now here is another cast; what would you think of such a head, judging from the size of the whole head? You see that the upper region is very large; we have Veneration, and Benevolence, and Firmness, all large in this head. You might depend upon such a person's being good natured, benevolent, and yet decided. Those who have at all studied anatomy, well know that there are two hemispheres of the brain, and that they are separated by a membrane called the falx, at the root of which runs a large blood-vessel called the longitudinal sinus, so that although the organs are marked singly on the skull, yet in point of fact they are double; we speak of the cerebral parts situated on each side



Firmness large, Conscientiousness small.

of the sinus. Sometimes the course of the sinus can be distinctly traced on the skull by a projection which it occasions, but we attach no importance to it. It may be seen in this skull, and in this. (Two were shown, in which the projection of the sinus was marked.)

I have already gone through a number of powers situated in the middle region of the upper part of the head, and I have to speak of another; now all these, as benevolence, veneration, and firmness, will have a great influence on our actions in society. A man may have great veneration, and worship the sun, and yet be benevolent; he may be benevolent, and yet very stubborn, or may be either one or the other, and yet be either just or unjust. We have now to examine that power which gives man an inclination to be just.

CONSCIENTIOUSNESS.

It would, perhaps, be difficult exactly to define what we commonly understand by the term justice ; since, as there is no determinate justice given by nature, our distinctions must be arbitrary, and especially since justice and the principles of justice vary in different countries. Hence we cannot speak of any determinate actions as being just or unjust, since we have no determinate justice to try them by. When we speak of a person having the organ of Veneration large, we merely mean by it that the person is disposed to venerate ; and if we see the organ of Firmness large, we know that the individual likes to insist upon the feeling, but we do not know how he will do so, in what particular way he may choose to insist upon it. Now I admit that there is a natural feeling which makes us look up to our actions with a desire of doing justice, and this feeling is called conscientiousness, a feeling not sufficiently acted on by mankind. There is a great deal of benevolence in mankind, much more benevolence than justice, and if we appeal to the benevolence of mankind, we shall find them disposed to do more, and to give up more than they would sacrifice for the sake of justice.

That the love of truth is not very predominant in some persons I think you will all admit ; it is common for persons to hesitate and ask,—Shall I injure myself by telling the truth ? But what I have to maintain is, that there is an innate feeling, a sort of internal monitor which communicates to men the course which they should pursue, and the regulation of their actions in conformity to the principles of right. We see that it is more prominent in some characters than in others. I appeal to observation, to nature, to legislation, to answer whether this feeling does not exist, although we see but too rarely the influence of it in overcoming the feelings which are opposed to it ; so as to cause persons to ask, when their interests are in the way, is such an action just or is it unjust ?

Let the other powers clash with this in its ordinary pursuits, let the love of approbation, let misfortune, or selfishness interfere and you will too often find that this power of conscientiousness is not strong enough. Some individuals have the other feelings, benevolence and the love of approbation, we will say, strong enough to break through all other considerations, but we find this individual power generally small in mankind ; and I think the neglect of education of the moral powers very much prevents the development of this feeling. Look into nature, and you will find the heads of

some persons contracted, and others full in this part; and whenever you find an individual who has a desire to be just, who wishes to become just, who has the zest to be just, he will have this organ well marked. But every man has for himself his own peculiar justice. You know it is a proverb of the old times, "The way of every man is just in his own eyes." The determinate application of this justice will be modified by the force of the other powers, but the feeling itself is essential.

The development here on both sides of Firmness, between Firmness and Circumspection, is that which I consider to be the seat of this feeling, or desire to be just, not of any determinate justice. (Different casts were then shown, in which the organ appeared more or less developed.) However, you meet with some persons in whom it may be pretty large, yet Acquisitiveness or Destructiveness may be larger. Now you may see the development of these organs in this head. The desire of doing justice was not so strong in it as the desire to



Conscientiousness large, Firmness small.

steal and to destroy. These latter powers were very active in this individual. Would such a man as this be active in his desire of doing justice, do you suppose? (Showing a head in which the organ was little developed.) Do you think he would allow the dictates of this internal monitor to guide him? I like to see heads broad here; broad in Firmness, and good development in this part also. If I see a person with a development like this, broad here anteriorly, full in the middle, and broad laterally, I am sure that such a person will always combine good works with his religion, for we shall have Benevolence, Veneration, Firmness, and Conscientiousness all full, and in good activity.

(Dr. Spurzheim then showed the cast of the head of a criminal very flat in this part, the organ of Conscientiousness being very little developed, and the individual had betrayed

not the least contrition for his offence up to the moment of his execution.) If the laws were the only restraint I think crimes would be more frequently committed, because the laws are easily evaded; but I believe that this feeling is more active in preventing bad actions, when it exists in good force, than anything else. Some would not do anything against the dictates of their consciences; but look at this head (flat in conscientiousness): do you think such a man would make his conscience the most severe judge? I would say that the individual was disposed to be very liberal, but the organ of Conscientiousness is flat.

I have considered the power of conscientiousness as the basis of all legislation, for without the fundamental feeling of looking for justice, no laws could have been made; for it is the desire to be right and just to others as to ourselves, that we must admit. Some men merely decide by firmness and their will becomes the law; but I consider that the fundamental feeling of the desire of justice is the basis of legislation, and this combined with other feelings, must point out to us what is to be regarded as just or unjust.

I shall next consider a power called Hope. It has been ranked among the moral and religious powers, because it is essential to belief.

WHEN in weary troublous hours
 Our poor hearts are near despair,
 When pale sickness overpowers,
 And dull fears our bosoms tear;
 When we think of those held dear—
 How deep sorrows them oppress;
 When the sky is black and drear,
 And no ray of hope doth bless:

Then our God inclineth downward,
 Unto us in love draws nigh;
 If our hearts aspire then upward—
 Lo! his angel standeth nigh—
 Holds the cup of life fresh glowing,
 Whispers words of faith and love,
 Nor our prayers, for loved ones flowing,
 Lays in vain 'fore Him above.

NOVALIS.

THE POPE'S MULE.

(From the French of Alphonse Daudet.)

Among all the choice sayings with which our Provence peasants embellish their discourse, I do not know of a more graphic or curious one than the following: For fifteen leagues around my mill, when they speak of a spiteful, vindictive man, they say, "He is like the pope's mule that kept her kick for seven years."

I have long sought the origin of this proverb. Nobody has been able to enlighten me about it, not even Francet Mamai, my fife-player, who has the legendary lore of Provence at his finger's-end. He thinks as I do, that it is based upon some old chronicle of Avignon, but he has never heard any explanation of it. "You will only find that in the grasshopper's library," said the old fellow, with a smile. His idea, however, seemed a good one to me, and as the grasshopper's library lies just outside my door, I went into retirement there for eight days.

It is a wonderful library, admirably arranged, open to poets day and night, and served by little cymbal-playing librarians, who make music for you continually. I have passed some delicious days there, and, after a week of research (upon my back), I have at last found what I wanted, the history of the mule and of that famous kick which was kept for seven years. It is a pretty story, and I will try to tell it to you just as I read it yesterday morning in a manuscript coloured by time and well perfumed with dried lavender.

He who did not see Avignon in the days of the popes has seen nothing. Never was there such a city for gaiety, animation and *fêtes*. From morning till night there were processions and pilgrimages, streets strewn with flowers and hung with tapestry, soldiers singing Latin in the squares, cardinals arriving on the Rhone with galleys decked with flags and banners floating in the wind. The houses which crowded about the grand papal palace hummed like bees around their hive with the tic-tac of the lace looms, the flying of the shuttles weaving the gold of the chasubles, the little hammers of the sculptors, the music of the lute makers, and the songs of the weavers. Above was the ringing of the chimes, and below the constant drumming of the tambourines upon the bridge. For with us, when the people are content it is necessary for them to dance, and, as the streets of the city at that time were too narrow for the farandole, fifes and tambourines were stationed on the bridge of Avignon, and there, in the

fresh breezes from the Rhone, they danced and danced day and night. Ah! happy time and happy city. Halberds which did not cut; prisons where you were refreshed with wine. Never scarcity, never any war. See how well the popes of Avignon knew how to govern their people, and why their people have missed them so much.

There was one pope in particular—a good old man, called Boniface, and oh, how many tears were shed at Avignon when he died! He was such an amiable and engaging prince, he smiled at you so sweetly from the back of his mule; and he gave you his benediction so politely, no matter whether you were a poor little madder-picker or a grand city magistrate. He was a true pope of Yvetot—but of an Yvetot in Provence—with something subtle in his smile, a sprig of sweet margorum in his hat, and not a sign of a sweetheart. The only sweetheart which this good father had ever known was his vine—a little vine which he himself had planted among the myrtles of Chateaufort, three leagues from Avignon. Every Sunday after vespers he went to pay his court to it. There, seated in the sunshine, with his mule and his cardinals about him, he would have a flagon of native wine—that beautiful ruby wine which has ever since been known as the Chateaufort-des-Papes. This he would consume very leisurely while he looked with tender regard at his vine. Then, when the flagon was empty and the day declining, he would joyously re-enter the town followed by all his chapter; and, as he crossed the bridge of Avignon, in the midst of the tambourines and the farandoles, his mule would be inspired by the music to fall into a little tripping gait, while he himself kept time to the dance with his cap—a proceeding which greatly scandalized his cardinal, but which made all the people exclaim, “Ah! the good prince. Ah! the gallant pope.”

Next to his vine the dearest thing in the world to the pope was his mule. The good man was passionately fond of this beast. Every night before retiring he went to see that the stable was securely closed and that there was nothing lacking about the manger; and he never left the table without having prepared a great basin of French wine with plenty of sugar and spices, which he took to her himself, despite the observations of his cardinals. But it must be admitted that the brute was worth the trouble. She was a beautiful black mule with red spots, a glossy coat, large and full hindquarters, and sure of foot; she had a haughty carriage of her little lean head all harnessed with pompons, bows, silver bells and ribbons; she was gentler than an angel, and had a naïve eye and two long ears which were always jogging, and which gave her the

appearance of a good girl. All Avignon respected her, and when she passed along the streets there was nothing in the way of politeness which was not shown to her, for everybody knew that this was the surest way of standing well at court, and that she, with her innocent air, had led more than one person to fortune. In proof of this latter, witness the remarkable adventures of Tistet Vedene.

Tistet Vedene was an impudent rascal whom his father, a gold engraver, had been obliged to drive from his house because he refused to work and debauched the other apprentices. For six months he was seen dragging his jacket through all the gutters of Avignon, but chiefly alongside of the papal palace; for the rogue had for some time been directing his mind towards the pope's mule, and there was mischief in it, as you shall see. One day when his holiness was walking with his beast under the ramparts, behold Tistet thus accosting him, with hands clasped in an attitude of admiration: "Ah! mon Dieu! what a noble mule you have there, holy father. Stop a moment while I look at her. Ah! my pope, what a beautiful mule! The Emperor of Germany has not one equal to her!" And he caressed her and said to her, as sweetly as if she were a young lady, "Come here, my jewel, my treasure, my cunning pearl." The good pope, greatly moved, said to himself: "What a nice little boy; how polite he is to my mule." And do you know what happened the next day? Tistet Vedene changed his old yellow jacket for a beautiful lace alb, a camail of violet silk and buckled shoes, and he entered into the service of the pope, where hitherto nobody had ever been received, except the sons of noblemen and the nephews of cardinals.

Nor did he stop there. Once in the palace, the rogue continued the game which had proved so profitable to him. He was insolent to everybody except the mule, upon whom he bestowed all his attentions. He was always to be seen about the courts of the palace with a handful of oats or a bunch of French grass, which he would shake gracefully, looking all the while at the holy father's balcony, as if to say, "Hey! Who is this for?" So well did this trick work that the good pope, who felt himself growing old, finally allowed him to watch over his stable and to take the mule her basin of French wine—all of which did not please the cardinals very much, nor did the mule enjoy it. At the times for serving her wine she now saw five or six little clerks, with their camails and their laces, thrusting themselves into her stable, and then, in a moment, there was a delicious odour of caramel and spices, and Tistet Vedene appeared bearing the basin of French wine.

From that instant the poor beast's martyrdom began. These cruel profligates brought the perfumed wine which she so much loved to her manger and made her fill her nostrils with its odour; then snatched it away from her and poured it down their own gullets. Nor were they satisfied with stealing her wine, for all these little clerks became like so many devils after they had drank it. One would pull her ears, another her tail. Quiquet would mount upon her back, Beluguet would try his cap upon her, and not one of the rogues imagined that with a single kick the poor beast could send them all into the polar star. But no; one is not a pope's mule, a mule of benedictions and indulgences, for nothing. The boys had done their parts well, and she was not angry with them. It was only to Tistet Vedene that she wished any harm. When she felt him behind her, her foot itched for him; and naturally enough, such wicked tricks did he play upon her and such cruelty did he concoct for her after his drinking.

Did he not one day conceive the plan of making her ascend with him in the bell-tower to the very summit of the palace? I am not telling you an idle tale; 200,000 people of Provence saw the occurrence. You can imagine the terror of this unhappy mule, when, after having revolved for an hour in a spiral staircase, and climbed I know not how many steps, she suddenly found herself upon the platform—dazzled with light and looking down 1,000 feet upon a fantastic Avignon, with its market-sheds no bigger than hazel nuts, its papal soldiers like red ants, and, stretching across a thread of silver, a little microscopic bridge upon which the people danced and danced. Ah! poor beast, what a panic she was in. The cry which she uttered shook all the window-panes in the palace.

"What is that! What has happened?" cried the good pope, rushing out upon his balcony.

Tistet Vedene was already in the court making a pretence of weeping and tearing his hair. "Ah! holy father, it is your mule. Mon Dieu! what will become of us? Your mule has ascended into the bell tower."

"All alone?"

"Yes, holy father, all alone. Hold! look up there. Do you not see the ends of her ears moving about like a couple of swallows?"

"Mercy on me," said the poor pope, raising his eyes; "but she has become insane. She is going to commit suicide. Will you not yet come down, unhappy creature?"

Alas! she would have asked nothing better than to come down; but how? The staircase was not to be thought of, she might mount it, but to descend it would break her legs a

hundred times. And so the poor animal was roving disconsolately about the platform with her big eyes full of vertigo and her mind full of Tistet Vedene. "Ah! you ruffian," she thought, "if I escape from here what a kick you shall have to-morrow morning!"

This thought of the kick put a little heart into her legs, and without it she would have dropped. At length the people arrived to bring her down, but it proved a serious affair. It was necessary to lower her with ropes, a jackscrew, and a hand-barrow. And think what a humiliation it was for a pope's mule to find herself dangling from such a height and working her feet like a May-bug on the end of a thread, and all Avignon looking at her.

The unhappy beast could not sleep that night on account of it. It seemed to her all the time as if she were still whirling round on that cursed platform, with the city laughing at her from below. Then, too, she kept thinking of that infamous Tistet Vedene, and of the fine kick which she proposed to send after him the next morning. Ah! my friends, what a kick that was to be! The smoke of it would be visible from Pampeluna.

But while this beautiful reception was being prepared for Tistet in the stable, do you know what he was doing? He was sailing and singing down the Rhone upon a papal galley, on his way to the Court of Naples with a troop of young nobles, whom the city sent every year to Queen Joan to perfect themselves in diplomacy and good manners. Tistet was not of noble birth, but the pope wished to reward him for the care which he had given to his beast, and especially for the activity which he had displayed on the day of her rescue from the tower.

So the mule was disappointed the next morning. "Ah! the ruffian, he suspected something," she thought, as she shook her bells with rage. "But no matter, go along you wicked fellow; you will find your kick upon your return. I will keep it for you;" and she did keep it for him.

After the departure of Tistet the mule recovered her former tranquil life. No more Quiquet and no more Beluguet about her stable. The good old days of French wine returned again, and with them came good humour, long siestas, and the little dancing gait when she crossed the bridge of Avignon. Nevertheless, a slight coolness was observable in the town since her adventure. There were ominous whisperings along her route; the old men shook their heads, and the children looked at the bell-tower and laughed. Even the good pope himself had less confidence in his friend than formerly, and when he took

his little nap upon her back, while returning from his vine on Sundays, he was always haunted by the thought, "Suppose I should awake and find myself upon the top of that platform." The mule saw all this and endured it without a word; only when the name of Tistet Vedene was mentioned in her presence, she smiled and whetted the iron of her hoofs upon the pavement.

Seven years passed in this way, and then Tistet Vedene returned from the Court of Naples. He had not served his full time there, but he had heard that the first mustard-maker to the pope had just died suddenly at Avignon, and, as the position seemed a good one to him, he had hurried back to apply for it. When this intriguer entered the hall of the palace the holy father had trouble in recognising him, so large had he grown. But on the other hand the good pope had grown old and could no longer see well without his glasses.

But Tistet, not at all intimidated, said: "What, holy father, do you not know me? It is I, Tistet Vedene."

"Vedene?"

"Yes; you know me well—he who used to carry the French wine to your mule."

"Ah! yes, yes! I remember. A good little boy that Tistet Vedene. And what is it that he now desires of us?"

"Oh! holy father, it is only a little thing that I have come to ask of you. By the way, have you your mule still? And she is well? Ah! so much the better. I came to ask you for the position of the first mustard-maker, who has just died."

"First mustard-maker! You? But you are too young. How old are you?"

"Twenty years and two months, illustrious pontiff; just five years older than your mule. Ah, Dieu! the gallant beast. If you only knew how I loved that mule! How I languished for her in Italy! Would you not let me see her?"

"Yes, my child, you shall see her," said the pope greatly overcome; "and since you love her so much, I no longer wish you to live far away from her. From this day I make you my first mustard-maker. My cardinals will cry out about it, but so much the worse for them. I am used to it. Come to us to-morrow, at the close of vespers, and we will bestow upon you the insignia of your rank in the presence of our chapter, and then—I will take you to see the mule, and you shall go with us to visit the vine. Ha! ha!"

I need not tell you with what impatience Tistet awaited the morrow. And yet there was some one in the palace still happier and still more impatient than he, and this was the mule. From the moment of Vedene's return, until vespers

the next day, the terrible beast did not cease cramming herself with oats and shooting at the wall behind her with her hoofs. She was also preparing herself for the ceremony.

When vespers were over on the following day, Tistet made his entry into the court of the palace. All the clergy, high and low, were there—the cardinals in red robes, the devil's advocate in black velvet, the abbots of the convent with their little white mitres, the churchwardens of St. Agricol, the papal soldiers in grand uniforms, the brotherhoods of penitents, the hermits of Mt. Ventoux, the scourging brothers, the sacristans in judges' gowns, all, all were there, even to those who lighted and extinguished the candles. Ah! it was a fine ordination, with the bells, the petards, the sunshine, the music, and always those mad tambourines which led the dance down on the bridge of Avignon.

When Vedene appeared in the midst of the assemblage, his noble carriage and beautiful mien sent a thrill of admiration through it. He was a magnificent Provencal, with long fair hair, curled at the end, and a little soft beard, which looked as if it had been taken from the golden shavings which fell from the burin of his father, the engraver. There was a story that the fingers of Queen Joan had sometimes played in this blonde beard, and Sir Vedene had, in truth, the proud bearing and heedless look of men whom queens have loved. This day, in honour of his country, he had changed his Neapolitan vestments for a jacket bordered with rose of Provence, and a great stork's feather of Camarque which trembled upon his hood.

As soon as he entered, the first mustard-maker made a gallant salute, then started toward the high steps where the pope was waiting to bestow upon him the insignia of his rank—a spoon of yellow boxwood and a saffron coat. At the bottom of the stairway stood the mule, all harnessed and ready to set out for the vine. As he passed near her Tistet smiled, and stopped to give her two or three friendly pats on the back, looking all the while out of the corner of his eye to see whether the pope was watching him. The position was auspicious. The mule gave a spring. "Take it! catch it! reprobate! Seven years have I kept it for you"—and she sent after him a kick so terrible that they saw the smoke of it from Pampeluna—a whirlwind of golden smoke in which fluttered a stork's feather, all that was left of the unlucky Tistet Vedene.

The kicks of mules are not ordinarily so dreadful, but this was a papal mule, and only think how she had kept her kick for seven years. There is not on record a finer example of ecclesiastical spite.

Poetry.

THE GORSE.

Thou bonny golden bloom,
Midst cold December's gloom,
What brought thee forth,
When louring is the sky
And keen winds bleakly sigh
From east and north?

No other flower doth peep
Forth from its winter sleep,
Or dank, cold tomb,
Save thou, bright, friendly gorse,
That e'en the cheerless course
Dost gay illume.

Oft in gay summer's reign,
When blossoms bedeck the plain
With rainbow hues;
When through the fields we hie
We pass thee thoughtless by
And brighter choose;

But now thou art so rare,
So beautiful and fair,
On the lone moor,—
Thou seemest like the friend
That cares but to defend
The lone and poor.

I love thee, bonny plant—
I love thy lonesome haunt
On heath and hill;
And ever will I love
Thee, golden gem, above
All others still.

Thou'rt like unto a flower,
So chaste and sweet and fair;
I look on thee, and sorrow
Doth fill my heart with care.

I feel as though my hands should
Upon thy head be placed,
Praying that God maintain thee
So fair and sweet and chaste.

HEINE.

Facts and Gossip.

A NUMBER of letters have been addressed to the Editor suggesting the feasibility of establishing a Phrenological Society in London. There is no reason why such a thing should not be done, and probably a deal of good might be effected thereby. There are difficulties in the way, not insurmountable, it is true, yet such as need to be taken into account. Societies of the kind, in the first place, almost necessarily depend for their success upon the devotion and enthusiasm of one or two men, and when their time or energies fail or become otherwise occupied, the society either falls to the ground, or becomes altogether effete and lifeless. Then there is a tendency to lose sight of the immediate objects of the society, and to drift into other and but remotely allied subjects, thus leading to disintegration through dissatisfaction. If these main evils can be avoided, there is no reason why a Society for the Investigation of Phrenology should not be started, and do good. There are lovers and students of the Science enough, and there is plenty of scope for earnest investigators. We shall be glad to co-operate with persons interested in the matter, provided a sufficient number can be enlisted in the effort to afford a fair chance of success.

MR. COBDEN, it is well-known, was fond of the theatre in his youth; but it will come as a revelation to many of his admirers that he was actually the author of a farce, entitled "The Phrenologist." Apparently the merits of this production were slight; for the managers of the two great theatres, with curious unanimity, declined having anything to do with it. Cobden came to see afterwards that this was a happy escape, as, "if it had been accepted," he says, "I should have probably gone on writing for the stage, and been a vagabond all the rest of my life."

SOME interesting studies with reference to the health and growth of children have been made by Dr. Boulton, of the Samaritan Hospital, London. Instead of taking the average of a large number of children measured once, he adopted the plan of measuring a number of children of normal growth, brought up under average circumstances, many times, thus ascertaining their rate of increase. By this means the annual rate of growth was found to vary between two and three inches for each child per year. Dr. Boulton believes that when a child varies more than a quarter of an inch annually, or when the increase of weight does not correspond with the height within a margin of safety—put at seven pounds—then it is safe to conclude the child's diet is not good, or possibly some disease is lurking in his system. The curious fact appears that loss of weight always precedes the development of consumption.