

THE
PHRENOLOGICAL JOURNAL,

AND
MAGAZINE OF MORAL SCIENCE,
FOR THE YEAR 1846.

VOL. XIX.

OR
VOL. IX. OF THE NEW SERIES.

Quiconque a une trop haute idée de la force et de la justesse de ses raisonnemens pour se croire obligé de les soumettre à une expérience mille et mille fois répétée, ne perfectionnera jamais la physiologie du cerveau.—GALL.

The first business of philosophy is to account for things as they are; and till our theories will do this, they ought not to be the ground of any practical conclusion.—MALTHUS.

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THE
PHRENOLOGICAL JOURNAL.

No. LXXXVI.

JANUARY, 1846.

NEW SERIES.—No. XXXIII.

I. MISCELLANEOUS PAPERS.

I. *On the Perception of Metre and Rhythmus, both in Language and in Music.* By Mr RICHARD CULL.

THE Greeks considered a knowledge of the Metre and Rhythmus of language to be essential to the Musician, the Poet, and the Orator. Metre and Rhythmus are closely connected both in theory and practice; and yet they are distinct things. The ῥυθμιστοὶ=rhythmicians, and μετρικοὶ=metricians, were separate artists. The source of our knowledge of Greek metre is Hephaestion's treatise, entitled ΕΓΧΕΙΡΙΔΙΟΝ ΠΕΡΙ ΜΕΤΡΩΝ ΚΑΙ ΠΟΙΗΜΑΤΩΝ=A Manual of Metres and Poems. In this didactic treatise on metre, the author so strictly confines himself to his subject, as not even to allude to rhythmus. Our knowledge of Greek metre is precise, but our knowledge of Greek rhythmus is vague and imperfect. The experiments of Dr Burney ought to have convinced the learned world, as it did the musical, of the truth of that vagueness; and also of the governing power which rhythmus exerts over metre.

On the subject of metre, I refer the reader to the following works, as valuable sources of information; viz., Hephaestion's *Enchiridion*, of which there is an English translation, with excellent prolegomena on rhythmus by Dr Barham; Hermann's *Doctrina Metrica*; Gladwin's *Rhetoric and Prosody of the Persian Language*; and to the standard grammars of the various languages. On the subject of rhythmus, see Steele's *Prosodia Rationalis*; Roe's *Principles of Rhythm*; *Takt Theorie von August Apell*; an excellent article in the *Foreign Quarterly Review*; and Barham's *Prolegomena*. And on the measure and time of music, I refer to the musical grammars of Callcott and of Busby; the *New Theory of*
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Musical Harmony, by A. F. C. Kollmann; and the article MUSIC in the *Encyclopædia Metropolitana*.

The voice and speech are different things. The voice of speech on which syllables are spoken, like the voice of song on which they are sung, admits of description under four general heads; viz., Pitch, Loudness, Quality, and Duration. In musical notation, the exact distinctions of vocal pitch and duration of the constituent sounds of the music are expressed with precision; those of vocal loudness are loosely expressed by vague verbal directions; while those of vocal quality have no notation whatever. The arts of expressing sense and sentiment by the human voice in song and in speech are taught by composers of music and by elocutionists respectively. And they are vocal arts; they belong to music, and are studied apart from verbal language.

Prosody, comprising rhythmus, metre, accent, syllabic quantity, and the elementary structure of syllables so far as it is subordinate to metre, teaches the just pronunciation of the language. Metricians study the words of the language as verbal sounds, apart from those vocal accidents which fall within the province of the elocutionist.

Metricians consider syllables in relation to, 1st, Their accent, 2d, Their quantity or duration.

I. *The accent of syllables.* Let the reader utter the word *pity*. He will observe that both syllables are short; the first is accented, and the second is unaccented. He will also observe that the accent consists of a greater abruptness in beginning the vowel than is given to the vowel in the unaccented syllable. The essential character of the accent is not in its greater loudness, for the loudness may be made less, if it be made more abrupt than the other. The word *pity* is selected for the experiment on account of the similar structure of its constituent syllables.

Let the reader now pronounce the word *pitfall*. The first syllable, it will be observed, is short and accented, while the second is long and unaccented. Many persons consider both syllables to be accented, such persons being unable to distinguish between the accentual stress of the first syllable and the long quantity of the second. To make another comparison, let the reader utter the word *presume*. The first syllable is short and unaccented, the second is long and accented. It will be observed that the accent is not produced by greater loudness, nor by greater abruptness, but by greater duration. That it entirely depends on the greater duration will be manifest on comparing the syllable in question with the unaccented syllable *fall* in the word *pitfall*, no difference between them being perceptible. Accent, then, is

produced in two ways, viz., 1st, By a greater abruptness of voice on the vowel; in this case the accent is sometimes named stress: 2d, By a greater duration of the syllable; in this case the accent is sometimes spoken of as coincident with long quantity.

In the verification of these statements the reader is requested not to be misled by the doctrine of accent as laid down in the Greek grammars, but to be solely guided by his own ear.

II. *The quantity of syllables.* Let the reader utter the following, as isolated words: *to, length, tip, whale, it, chasms, require, city, convey, corkscrew, arrest, wildcat.* It will be observed that the time consumed in the utterance of the several syllables is various. The syllable *whale* appears to be four or five times the duration of the syllable *tip*.

The subjoined Latin and Greek words exhibit as great a variety of duration as the English examples; *et, par, sol, pars, quæ, inertia, jugum, recordari, victus, patres*; τὸ, γὰρ, πλοῦς, δε, ναὺς, λάρυγξ, ἀνεμῶν. In comparing the time which is consumed in the utterance of these examples, the ear alone is to be the guide.

The Greek rhetoricians, and, in imitation of them, the Latin rhetoricians, assumed that all syllables may be classed as long and short; the long syllables being, as Quintilian parenthetically remarks, double the length of the short ones, "as is known even to boys."* This conventional principle governed the selection of syllables in the construction of verse; but it could not govern the syllabic quantity in conversation, in oratory, or in the recitation and dialogue of the actor—because the various emotions of the mind in the actual business of life, and in the stage-imitations of that business, greatly extend and contract syllabic quantities in manifesting themselves in speech. Those who will read impassioned passages of the Greek and Roman orators, by way of experiment, and endeavour to convey the sense and sentiment of the text, will perceive that their syllabic quantities are not in the conventional relationship of two to one. The classical scansion is a convenient means of exhibiting the metrical structure of verse; but we cannot preserve the conventional quantities of the syllables, if we attempt to convey the sense and sentiment of the poet, in reading his verse aloud. Let the reader try the subjoined example.

Ad rivum eundem lupus et agnus venerant
Siti compulsi; superior stabat lupus,

* "Longam esse duorum temporum, brevem unius, etiam pueri sciunt."—*Lib. ix., ch. iv.*

Longeque inferior agnus. Tunc fauce improba
 Latro incitatus, jurgii causam intulit.
 Cur, inquit, turbulentam fecisti mihi
 Istam bibenti? Laniger contra timens:
 Qui possum, quæso, facere, quod quereris, lupe?

In reading the example aloud with appropriate feeling, the syllable *cur* will be found to be more than twice the quantity of the syllable *ti* (of the word *fecisti*) in the same line. And the syllable *quæ* (of the word *quæso*) is longer than the long syllable *qui*, in the same, the last line. These are cited as specimens, and not to exhaust the instances.

The conventional rules of quantity are mainly dependent on the vowel. When the vowel is long, the syllable is long; when short, the syllable is short. Catalogues of the vowels, arranged into long and short, are given in the grammars. Short vowels are made long by the number and position of the consonants which follow in the syllable. Catalogues of the consonants, and of the consonant-combinations, which extend the duration of vowels, are given in the grammars.

Long and short syllables are variously arranged into groups of two, three, and four each. These groups are termed feet, of which there are twenty-eight in the Greek language, each having a name and a symbol. A long syllable is thus symbolized (-), a short one thus (v). The foot called Spondee, consists of two long syllables, and is thus noted (- -): the Iambus consists of a short and a long syllable, and is thus symbolized (v -). Classified catalogues of the feet, with their symbols, are given in the grammars.

Language so arranged as to produce a recurrence of similar series of syllables is named Metre or Verse. The syllabic series of which metre is constructed may be similar in two respects, viz. in their Accents, and in their Quantities. The subjoined metre—

“ Know thou’ this truth’ enough’ for man’ to know’,—”

is constructed of syllabic series which are similar to each other in regard to their accents. The series or measure is dissyllabic. The subjoined accentual metre is trisyllabic:—

“ The Assy’rian came dow’n like a wolf’ on the fold’ ”

The varieties and combinations of the dissyllabic and trisyllabic accentual series produce the almost endless varieties of English versification. The versification of the living European languages is similar to our own.

The example—

“ Armă vîrîmq̃ue cănō Trōjă qui primûs âb ôris
 Ităliâm, fătō prôfûgûs, Lăvinîă vênit
 Litôră; ”—

consists of a series of certain feet, which are so ordered, that similar quantities shall continually recur. The measure is quantitative. It consists of dactyles (- ∪ ∪), and spondees (- -). The verse is called heroic. Great varieties of metre are constructed by skilful combinations of the feet, as may be seen in the Greek grammars.

The length of time which is occupied in the utterance of a syllable is perceived by that organ which perceives duration. It is one thing to perceive by the ear the duration or quantity of a spoken syllable; it is quite another thing to apply the rules of prosody to determine the quantity of a written syllable. The application of rules depends not on the ear, but on acquired knowledge and ability to apply it.

It is one thing to perceive by the ear that the verse,

Arma virumque cano Trojæ qui primus ab oris,

as it is spoken, is a heroic verse; it is quite another thing to apply the several rules which determine the syllabic quantities of the written verse, and, from the succession of those quantities producing certain feet, to know that the verse is heroic.

In music, too, it is one thing to perceive by the ear that a sound is a crotchet, or quaver, as the case may be; it is quite another thing to recognise the written symbol of a crotchet, and to know its name and temporal value. The length of time consumed in the utterance of a crotchet is perceived by the organ which perceives duration. An acute perception of time is required for playing in concert with other musicians. The organ of Time in relation to the perception of minute intervals of duration, can, therefore, be studied in the members of an orchestra.

The heads of metricians do not necessarily present a good field for observation; because a man may be a good classical metrician without a nice perception of the temporal value of syllables, if he possesses a good memory of rules and has a facility in their application. The subjoined statement of Mr Combe's is valuable: "When a boy, I could scan with facility every variety of Latin verses, and give the rules; which many of my schoolfellows, who greatly excelled me in other exercises, could never learn to do."* It appears that Mr Combe's facility depended on the application of rule, and not on his ear-perception of time. It will be found, on inquiry, that most classical scholars determine syllabic quantity by rule and not by ear. And the common experience of what is meant by "making a false quantity," and the dogma that

* System of Phren., 5th ed., vol. ii., p. 145.

the English language has no quantity, might induce the opinion that syllabic quantity is not at all perceived. "To make a false quantity passes, no doubt, for a serious fault in all good schools; but what does this phrase commonly mean? Does it mean, as it ought, the uttering of a syllable without a due observance of its relative *time*? Not at all, as we have seen above. Such observance of time is never attempted or thought of. Know then, gentle reader, that, *in Latin*, to make a false quantity, means to place the accent otherwise than as the quantity of the syllable requires, according to the rules of that language, that it should be placed."* This statement of Dr Barham's is amply borne out by our everyday usage. The rules of quantity are not to regulate the greater or less length of time in the utterance of syllables, but to govern the seat of the accent.

When boys begin to measure Latin syllables, they are taught that quantity does not belong to English syllables. Now, it will be found on a wide induction, that whatever is predicable of the syllables of the Latin language, is predicable also of the syllables of the English, and indeed of all languages. Let us, however, merely compare the syllables of the Greek, Latin, and English languages together. Examine Homer, Virgil, and Milton, and it will be found that, 1st, The bulk of syllables are common to the three languages; 2d, Those syllables are constructed of the same elementary sounds; 3d, Those syllables consume equal time in their utterance, in the three languages; and, 4th, Those syllables, according to their construction, receive accent either by stress, or by protracted quantity. Those, therefore, who deny quantity to the English language, require our assent to the absurd proposition, that a syllable, which has a quantity in the Greek and Latin, has none when it occurs in the English language. I have no intention, in these remarks on modern scholarship in metre, to question what the Greeks say of their own speech; but strongly to object to what modern scholars say both of Greek and of English speech, and consequently to caution phrenologists against supposing that a modern scholar, in Greek metres, must have a power of measuring small intervals of time in the due adjustment of relative syllabic quantity. I proceed to treat of *rhythmus*.

The word *ῥυθμός* (*rhythmos*) is Greek, which the Romans rendered by *numerus*=number. The etymon of *ῥυθμός* is, therefore, probably *ἄριθμος* (*arithmos*)=number; although some ancient grammarians derive it from *ῥεῖν* (through *ῥυσίς*) = to flow. The word *ῥυθμός*, as applied to verse, signifies a

* Dr Barham's Prolegomena to his ed. of Hephaestion, p. 55.

musical observance of time ; *i. e.*, time measured as it is in music. Aristotle applies the term to dancing. (*Poetics*.) The ancients observed a rhythmus in many familiar movements ; as in the paces of a horse, the stroke of oars in rowing, the action of the wings in a bird's flight, the dashing of the waves on the sea-shore, &c. It will be observed that the rhythmus of music is perceived by hearing ; the rhythmus of dancing is perceived by sight ; and the rhythmus of a horse's paces by both hearing and sight, while a rider perceives it also by the sensation of the horse's movements. Several ancient authors have written with great ability on rhythmus, yet it appears to me that they have signally failed in framing a definition which is at once precise and comprehensive. Some of the ancient definitions have been collected by Mr Steele, in the *Prosodia Rationalis* ; by Mr Roe in the *Principles of Rhythm* ; and by Dr Barham in the Prolegomena to his edition of Hephaestion.

The term *rhythmus*, as applied to verse, is adopted to signify a musical observance of time. Rhythmus is to metre what time is to music. I shall, therefore, describe what is meant by the word *time*, in its application to music, before describing its application to verse, when it is termed *rhythmus*.

Musicians express the relative duration of their sounds by a notation on the stave. The following equation exhibits the relative duration: 1 semibreve = 2 minims = 4 crotchets = 8 quavers = 16 semiquavers = 32 demisemiquavers. The intervals of silence, called *rests*, correspond to the several notes, and have a notation also on the stave. Music is divided into equal portions of time called *measures* : these are indicated by vertical lines drawn across the stave, called *bars* ; and the measures are vulgarly called bars. These measures correspond to feet in metre. In some music the several measures consist of a semibreve, or its equivalents ; in other music the measure consists only of two crotchets, or their equivalents ; in other music, it consists only of three quavers, or their equivalents. The musical grammars contain catalogues of the various measures, with descriptions of their applications. All measures may be classified under two general heads, *viz.*, 1st, *Duples*, in which the measure is divisible by two, and which is noted on the stave by C $\frac{1}{2}$; 2d, *Triples*, in which the measure is divisible by three, and which is noted on the stave by $\frac{3}{8}$, $\frac{3}{4}$, &c. The bars, besides marking the limits of the measure, indicate also the seats of the accents.

The absolute duration of the crotchet (or other standard note) varies in accordance with the measure ; but, however

the length of the crotchet may be changed, the quaver is always one-half its duration, so that the relative duration of the other notes is preserved. The rate of succession of the constituent sounds of music is governed by the terms *Allegro*, *Andante*, &c. It will be observed, that besides a notation of the relative duration of the several notes, there are indexes to shew, 1st, The altered length of the standard note; 2d, The seat of the accent; and, 3d, The rate of succession. The impression on the ear of this, the Time or Rhythmic part of music, is (apart from the pitch of the sounds) that of a waltz, march, quadrille, &c. The strong impression of a march and a waltz is felt to be successive series of duples and triples respectively. The perception of such series excites a desire in most persons to accompany the music with a set of regulated movements; and even in music of a less strongly marked time, the bulk of an audience may be seen to move the foot, or hand, or whole body, at regular intervals, producing a downward motion isochronously with the strong note of the music. Highlanders snap the finger and shout at certain intervals when their national music, whose rhythmus is strongly marked, is heard, especially when played on the pipes.

Thus the rhythmus governs the measure. The history of music shews how rhythmic considerations lead to the establishment of the measures, and the rest of the beautiful and perfect system of time. And thus in music as in verse, the poetical assertion of Longinus is literally true, that "Rhythmus is the Father and God of metre"—*Μετροῦ πατὴρ ὁ ρυθμὸς καὶ θεός*.

Certain conditions of mind express themselves in a slow succession of long-drawn syllables, as in the example—

"Hail, holy light, offspring of heaven first-born,
Or of the eternal co-eternal beam!"

Other conditions of mind express themselves in a quicker succession of syllables, as in the example—

"One that will play the devil, sir, with you,
An' a may catch your hide, and you alone."

Other conditions of mind express themselves in a succession of short syllables, in which the voice bounds from syllable to syllable with the lightness of hilarity, as in the example—

"Come and trip it, as you go,
On the light fantastic toe."

These, and many other conditions of speech, as expres-

sive of states of mind, have been studied by poets, rhythmicians, and metricians, especially those of Greece; and verse in imitation of those conditions of speech has been constructed. The canons of certain mental conditions may be seen in the works on metre. When verse so constructed is read aloud with appropriate feeling, it will be observed that the vocal expression of the several feelings exerts a controlling power over the syllabic quantity, the mode of accenting syllables, and also the rate of succession of the syllables. If the reader will turn to the familiar example above quoted (p. 4) from Phædrus, and read the narrative as a narrative, and then give appropriate intonation to the dialogue, he will observe a greater rapidity, and a shortening of the syllabic quantities, in the wolf's angry accusation, than was given to the narrative :—

“ Cur, inquit, turbulentam fecisti mihi
Istam bibenti ?”

The appealing question of the timid lamb will, on the contrary, have a slower rate of utterance, with a greater prolongation of syllabic quantities, than was given to the narrative :—

“ Qui possum, quæso, facere, quod quereris, lupo ?”

The combined impression on the ear, of the syllabic quantity, of the rate of syllabic succession, and of the isochronous recurrence of accent, constitutes *rhythmus*. Thus *rhythmus* is to metre what time is to music. A change of time in music is expressed by a symbol on the stave; a change of *rhythmus* in verse by a different structure of verse. Passages in music, which are to be accelerated or retarded, have specific directions for that purpose; passages in verse which are to be so modified, have no directions for that purpose, but depend entirely on the reader's ability to express the sense and sentiment of the text, as in the dialogue of the wolf and the lamb above quoted.

Thus the *rhythmus* governs the metre. It has been shewn that metre originated in *rhythmus*; and thus, in verse, the assertion of Longinus, already quoted, is literally true, that “ *Rhythmus* is the Father and God of metre.”

Rhythmus, like metre, is an object in relation to the organ of Time; for the length of the musical note and that of the syllable (metre taking cognizance only of their relative lengths), the rate of succession of the sounds and syllables, and the intervals between the accented notes and syllables, can be perceived only by the organ which perceives duration.

We learn from Cicero (*De Oratore*), that, in his time, a numerous style was highly prized. Now, whether the term *numerous*, as applied to prose, is to be limited in its signification to feet, as some critics think, or is to be taken in its ordinary sense of *rhythmus*, as others think, it is certain that, in either sense, it is an object in relation to the organ which perceives duration; and that organ is the organ of Time. "The faculty of time," says Dr Spurzheim, "conceives the duration of phenomena, their simultaneousness, or succession."—*Phrenology*, p. 285.

I have verified Dr Spurzheim's statements on this organ, and Mr Deville's museum contains ample illustrations of the organ in different degrees of development. In this paper, I have endeavoured to shew that the metre and *rhythmus* of both language and music are objects in relation to, and are perceived by, the organ of Time.

II. *Remarks on the supposed Domestication of some of the Lower Animals.* By JOHN STARK, ESQ., F.R.S.E.*

In 1825, M. F. Cuvier published two essays, one on the Sociability of Animals,† the other entitled an "Essay on the Domestication of Mammiferous Animals;" the opinions expressed in which derive weight, not only from the character of the author, but from the opportunities he enjoyed of studying the habits of animals. This celebrated naturalist ascribes the domestication of animals as owing to what he terms *an instinct of sociability*—a social instinct in the creatures themselves, accompanied with qualities to aid its influence. "To attain an object," says he, "it is necessary to know it; and how could the first men who associated themselves with animals have known this object? And had they conceived it hypothetically, would not their patience have been exhausted in vain efforts, from the innumerable attempts they would have had to make, and the great number of generations on which they would have to act, in order, after all, to arrive only at superficial results?"§ So far M. Cuvier writes with the

* Extracted from a paper "On the Supposed Progress of Human Society from Savage to Civilized Life, as connected with the Domestication of Animals and the cultivation of the Cerealia," read by Mr Stark before the Royal Society of Edinburgh on 1st March 1841, and published in the Society's Transactions, vol. xv., p. 177.

† *De la Sociabilité des Animaux*, *Mém. du Mus.*, xiii., 1. "It is difficult to conceive how they could commence and maintain the submission of animals without this disposition to sociability, if we consider, above all, at what time of human civilization the domestic animals appear to have become so." (P. 19.)

‡ *Mémoires du Museum*, xii.; 406.

§ *Ibid.*

caution of a philosopher. He afterwards goes on to state, as the result of all his knowledge and all the experiments that had been made in the taming of animals, that no conceivable training, without a particular disposition in the animals to attach themselves to man, could have ever effected this object.

With regard to the effects of the social instinct of gregarious animals, as inducing them more easily to come under the protection of man—if the effect of this social instinct were to render all gregarious animals of equally easy acquisition, I should at once grant the principle as a chief means of their domestication. But all gregarious animals, as M. Cuvier remarks, are not found capable of domestication. The greater number of the untamed Ruminants herd together in flocks; the zebra, the wolf, the hyæna, the beaver, are found in companies, and are yet untamed by man. And even the tribes of quadrumanous animals, or apes, most nearly resembling the human form, though with hands at their extremities capable of performing all the actions of human beings, are yet the untamed denizens of the forest. Domestication is not, therefore, the necessary or sole result of the social instinct of gregarious animals, even carried to a high degree, else all gregarious animals would be equally capable of this domestication. And though it be true, as a general rule, that no solitary species, however easy it may be to tame the individuals, has ever afforded domesticated races, yet the common cat forms an instance of an exception to this rule. A particular disposition in the animals themselves—an instinctive propensity to attach themselves to the human race—is therefore necessary, as M. F. Cuvier has stated, to their complete domestication.

This tendency in certain animals to become the associates of man, has been noticed by other observers. "It has been proved," says Buffon of the goat, "that these animals are naturally the friends of man, and that, in inhabited places, they do not become wild."*—"Compare the docility and submission of the dog, with the distrust and ferocity of the tiger; the one appears the friend of man, and the other his enemy."† The wild cattle of the island of Tinian, met with by Lord Anson in his voyage,‡ were not at all timid, and they had no difficulty in getting near them. The wild horses of the Llanos, according to Humboldt, are easily reduced to servitude and their good qualities developed.§ The goats met

* Buffon, *Hist. Nat.* xxiii. 99.

† *Ibid.* p. 67.

‡ Anson's *Voyage round the World*, 4to, p. 309. Lond. 1776.

§ Personal Narrative, iv. 380. In Paraguay, they are put in harness when caught, and a day is sufficient to tame them. (Robertson's *Letters on Paraguay*, ii. 6.)

with at the island of Bonavista by an early voyager, followed the negroes with a kind of obstinacy ; and, according to Dr Richardson, there is no difficulty in approaching the Rocky Mountain sheep, which, in the retired parts of the mountains, exhibit the simplicity of character so remarkable in the domestic species.*

A late writer on the "Influence of Domesticity upon Animals,"† M. Dureau de la Malle, after asserting that the origin and country of our domestic animals had been sought for in vain, states, in apparent opposition to this, that all the tamed animals existed in a wild state in Europe in the time of Aristotle ; and that in four hundred and fifty years from Aristotle to Pliny, the domestication of animals had but slowly extended. It is conceded at once, that the domesticated species of animals might be found in a half wild state wherever human settlements had introduced them, at the period alluded to, as at present ; and the subsequent remark that no new animals had been added to the number of domesticated species then known in the space of 450 years, is likewise consonant to what I hold to be the truth. For it is a singular fact, and borne out by all observation, that no new species of domestic animal of any consequence has been added to those which have been the property of man from the first times. The animals at present domesticated, have been so from the earliest period of human history ; in all man's wanderings, they have accompanied his progress ; and it is only in regard to America, the first settlers in which Continent may have been driven from their native shores by a thousand ways which may easily be conceived, that the migrations of the race seem to have been without the cattle of the Old Continent.

It is, besides, incumbent on those who support the poetical and philosophical theory, to point out, in the course of ages, a single instance of an important animal having been added to the stock of the domesticated races. All the animals now known as the property of man—the goat, the sheep, the ox, the dog, the horse, the ass, the hog, &c.,—were the companions of man from the earliest times. The arts of Greece and Rome, the reasonings of philosophers, or the songs of poets, have not enabled them to seduce or charm one animal more from the wilds, or to add one individual to the domesticated races, though Africa and Asia were ransacked for animals to exhibit in the shows of the Roman

* *Fauna Boreali-Americanae*, p. 279.

† *De l'Influence de la Domesticité sur les Animaux*, *Ann. des Sciences Nat.*, xxi. 52.

people, and forms, never seen in Europe before, were displayed in numbers to the Roman citizens. The camel, from its limited geographical range, is only known in domesticity; and all the reputed wild animals of the domesticated species have originated from them alone. Surely if the training of animals has been progressive, as alleged, some of the reputed savages of the ancient world might have left one or two useful creatures untamed by them, for the benefit of modern philosophers, and to illustrate their theories. Let the adherents of the theory of taming, and domestication, and gradual change, make an experiment upon the fox,—said by John Hunter* to be one of the progenitors of the dog,—let us see foxes protecting, in place of pillaging, the poultry yard,—and this not in the case of an individual fox, but of the whole race of foxes in the country,—and then there will be some show of reason for supposing that the domesticated animals were thus subjected to the service of Man.

M. Dureau de la Malle concludes the paper to which allusion has been made, with the announcement of the result to which, he says, he has been led by his researches; and that is, that he believes it may be affirmed that the greater portion of our domestic species of animals is originally from Asia, and have been transported to Western Europe by early wanderers from the first habitations of man.

As to what some authors say of the original types of the races of cattle being unknown, and of tamed animals, on returning to their original wild state, resuming the characters of their original condition,—this, too, is an assumption without evidence to render it even probable. The existence of embalmed animals in the tombs, and of figures on the monuments, of Egypt, shews, that at least for three thousand years there has been no essential change in form and structure.† The wild horses of the Tartarian plains, the wild horses of South America, have returned to no common type materially different from the races from which they are descended;‡ and the black cattle of the Llanos are of all the colours of the domestic varieties. Even the dogs introduced by Europeans to various countries, and which have become wild, have not in the course of years reverted to their supposed original sources, and become wolves and jackalls, but obstinately remain dogs still, in defiance of all theories to the contrary.

* Phil. Trans. 1787, p. 253.

† Hasselquist's Travels in the Levant, 90, 91.

‡ Humboldt, Personal Narrative, iv. 340.

III. *On the Function and Nomenclature of the Organ called Wonder.* By Mr E. J. HYTCHE.

The desirableness of correct nomenclature is a trite truth indicated by the history of Phrenology, as of every other science. Thus, when the organ of Tone was called "Music"—a term even now not always discarded—an erroneous impression was given respecting its influence: for, whilst Tone merely appreciates and discriminates sounds, music implies *timed* sounds, and the co-operation of the organ of Time is therefore imperative. By disregarding this, we place obstacles in the way of the student; for, until he is well grounded in the science, he must, of necessity, interpret nomenclature by the current meaning attached thereto; and thus he will eventually find that names and functions do not always correspond. As, then, in descriptive phraseology generally, we require that phrenological nomenclature should be definite and comprehensive; and, to attain these objects, the name selected should indicate the radical function of the organ, separated from the characteristics of those organs with which it usually acts,—a source of error whereby our conception of the function of an organ has often been darkened.

If the foregoing remarks are correct, the application of the principle indicated to the organ called "Wonder," is demanded; for, as I shall endeavour to shew, no name is more likely to mislead the uninitiated respecting its function. Every fact which has been collected tends to prove that it is the eliminatör of instinctive confidence, and of unfaltering faith in those things which are declared to exist, but which cannot be mathematically demonstrated. Men, for example, may be separated into two classes, of which we find types in the cold sceptical Voltaire, and in the earnest, believing Carlyle; and, on examination, it is found that the one class has the organ feebly, and the other largely developed. Wherever the organ is deficient, we trace a want of earnestness, a tendency to doubt anything but common-place narrations; and, if the reflective organs predominate, there is a manifest disposition to repudiate all that cannot be rigidly demonstrated. Such persons are rarely enthusiastic: when they adopt a novel theory, or urge its reception on others, their adhesion springs more from the intellect than from the feelings. When the organ is ungoverned, then credulity is generated, and, to the illiterate, the appearance of ghosts, and the foreshadowing of events by omens and

dreams, become as irrefragable facts. Now, it is obvious that the term "Wonder" does not indicate this unwavering faith, but an entirely opposite emotion; for it implies astonishment, if not incredulity, and is expressive of that startled emotion which is aroused whenever some unexpected or unaccountable event has occurred. The natural language of *emotional* wonder is found in the uplifted eyebrow, and in that half-questioning, half-sneering curl of the lip, which declares, as plainly as possible, that the statement is incredible.

That faith is evolved by the organ under discussion, many facts, at a few of which I shall glance, testify. I shall select the case of Visionists as my first illustration. In every known instance of ghost-seeing, or of belief in the appearance of ghosts without their having been actually seen, the organ of "Wonder" has been found largely developed. On investigating spectra-cases, it will be found that, whatever might be the opinion when the excitement had subsided, there was, at the time, a firm and influential belief in their existence, unattended by any surprise at the appearance. So strong, indeed, is the belief in spectra in some persons, that, on their evolution, most intense fear is generated. Now, did they not believe the spectra to be real existences, Cautionssness could not operate; for, on the appearance of the spectra, the knowledge of their unreality would at once preclude the action of fear. Hence, the fact that spectra so often arouse intense fear, evinces that the uppermost emotion is not that feeling of *surprise* which is indicated by the term "Wonder," but that there is such an implicit faith in their reality as to be productive of exquisite mental torture.

We have a forcible illustration of this implicit faith in the case of Socrates. He considered that he was guided by a Demon; and, as he conceived that his happiness depended on his compliance with the plans which it suggested, he embraced no novel theory, and scarcely uttered any opinion, without first seeking its all-potent vote. In this case, there was the noticeable peculiarity of the operation of the organ called "Wonder," without the intervention of Form; for Socrates never professed to *see** the spirit, though to its "still small voice" he hearkened with attentive reverence. It is impossible for a phrenologist to regard that life-like bust of his, which has made the moderns as well acquainted with his countenance as if he now traversed our streets, without per-

* In this case, I conceive that the non-appearance of the Demon is attributable to that defectiveness in the organ of Form which his bust, and the records of his life, indicate. If "Wonder" be the spirit-imaginer, Form, undoubtedly, appears to be the figure-creator.

ceiving the largely developed "Wonder;" and in the power of that sentiment we find the clue to his belief in the supernatural. Somewhat similar to this case was that of Samuel Johnson. He earnestly testified his belief in ghost visitations, though he never professed to have seen one; and, whenever the subject was introduced, he spoke in that under, awe-struck tone, which indicated mingled belief, fear, and intense reverence. In the portrait by Sir Joshua Reynolds, the part appropriated to this organ appears large. A like indubitable belief in the reality of visions has been manifested by those to whom ghosts have appeared. Thus Jerome Savonarola, the Italian church-reformer, rested the truth of his mission on supernatural communications, and influenced multitudes of converts by conveying messages which he asserted had been delivered to him by angels. The character of this truth-loving man evinces that he did not wilfully deceive, but that, influenced by the creative power of Form and "Wonder," he actually saw the apparitions of which he spake. This was also the case with Martin Luther. In the latter periods of his life, he often conceived that he was called to encounter the archfiend in personal conflict. Often was he heard occupied by this contest, as earnestly as men engage in a life or death struggle; and the damp thick perspiration which oozed from every pore, and the total physical prostration which ensued, told that, however others might scoff, to him at least the scene was no fiction. And thus it was with the painter Blake, whose imagination seemed to revel in the charnel-house, and whose portrait indicates an extraordinary development of the organ of "Wonder." When he painted his celebrated Satan, he believed that he drew from life, and indicated any contortion, or change in the attitude of the fiend, as if he were actually sitting for his portrait. I might thus proceed from the noble Joans of Arc, down to the longer roll of the miserable Joanna Southcotts, and it would be seen that all who believed themselves to be influenced by supernatural existences, had an indubitable conviction of the fact of the visitation; and hence shrank not from their supposed mission, although men treated their claims with derision, or threatened the stake as the punishment of their supposed imposture.

We have a somewhat similar illustration of the operation of this feeling in the case of those children, who, unduly influenced by Cautiousness and "Wonder," dare not remain alone in the dark, peopling the room, as they do, with awful unearthly spectra. I have known many cases of this character, where, to proceed through a churchyard at twilight, or even to have slept alone, might have engendered idiocy or

madness. Ask them why this strange horror of the dark, and why they cling to their parents as if pressed by danger, and you will find that tales respecting "witches and warlocks" are floating in their minds, and thus they are assured that some awful visitation will be made.

I conceive, then, that the visionist cases which I have related—and no one case in the text-books disproves the inference—evince that surprise was no feature in the phenomena; that there was an unqualified reception of the spectra as facts; and that, in short, the idea of wondering no more occurred than it would at any other ordinary event. They saw, and therefore believed: what cause, then, could there be for wonder? for man can only wonder at the startling, the unaccountable, or the improbable. It is clear, then, that the term "Wonder" does not describe the emotion evolved by the organ; nay, implies a feeling, the very operation of which would have precluded the organ's activity: and hence, if nomenclature is to be descriptive of function, the use of the term "Wonder" is inhibited.

This result is strengthened when we regard another mode in which the organ operates. In all persons who are strongly attracted by crude novelties, there is found a large development of the cerebral organ under consideration; and hence Mr Combe* seems disposed to consider it as the appreciator of the *new*. Such persons have a strong tendency to embrace every incredible scheme and novel theory, the novelty of a theory being to them no slight recommendation; and quacks—social, political, or religious—find in them prepared victims. I know several men of this character. S. A. E. has large observing organs, and possesses a large endowment of "Wonder." He is well acquainted with the principles of natural philosophy; and, so far as a practical knowledge of the powers and limits of nature is concerned, might be deemed the most unlikely man to be duped by impracticable mechanical theories. Yet, let a new scheme for navigating air or water be broached, and he appears as ignorant of the natural laws as a child, and his sanction is given to the wildest schemes. Thus, also, E. N., who is a man not only of deep learning but of great original talent, is marked by a tendency to concur in impracticabilities, if they are novel; and hence there is scarcely one absurdity of the 19th century, from Perkins' "metallic tractors" down to Mormonism, of which he is not the dupe. The old fails to excite, but for the new he is an enthusiast. His organ of "Wonder" stands out prominently. Men like these, if they cease to

* System of Phrenology, 5th ed., vol. i. p. 455.

yearn after perpetual motion, and those problems of science which can never be solved, become the projectors of gas-lighting and railroads, and, marching far a-head of that public whose tendency is to rest on the traditional, they at length compel an adhesion to their schemes by the success which attends their exertions. It may, then, be received as a demonstrated fact, that there has never been a true-souled innovator who had not a large organ of "Wonder," and who had not the firmest faith in his mission.

It was this craving after the novel that even more than Acquisitiveness incited the Alchemist to his abortive labours. While he searched for the philosopher's stone, or the elixir of life, the profit and fame to be acquired were forgotten in the grandeur of the object. The study of Alchemy was not confined to those vulgar minds who are popularly said to love the mysterious because they are ignorant; but the rarest minds of the 15th and 16th centuries became infected with this love of the marvellous. Thus Tycho Brahé, calm observer though he was, became an adept in Alchemy; he also reposed credence in the phantasmas of astrology; and, as if this were not enough to shew how, to the baffling of the metaphysicians of the old school, the great and the little can be combined in one mind, he "maintained an idiot of the name of Lep; and, being persuaded that his mind when moved was capable of foretelling events, Tycho carefully remarked every thing he said."* The inventor of the 19th is the successor of the Alchemist of the 15th century. Extravagant as are many of his projects, we should decide uncharitably were we to include him in the Munchausen class; for who ever knew an inventor that did not earnestly confide in the practicability of the combination patented? And so, as "iron sharpeneth iron," the exaltation of his "Wonder" excites the same feeling in those who are similarly organized; and thus, although it is said that scarcely one-fifth of the number of patents pay even the legal expenses, it is rarely that one is enrolled, the cost of which is not defrayed by the public.

Now, in the cases just cited, what quality predominates? Such persons are assuredly not characterized by "wonder;" they propound their theory, attempt to render it practical, and, whether baffled or not, they consider their scientific fiction as a philosophic truth. The very dimness and vastness of the project appeals to the "Wonder" of similarly organized men; and, shadowy as it may be, it is not too shadowy for the grasp of their faith. Inasmuch, then, as that implicit

* Brewster's "Martyrs of Science," p. 197.

belief and wonder are antagonistic, and as, in the cases referred to, we trace the operation of the organ called "Wonder," it is clear that that term must be abandoned if we would indicate the sentiment which it evolves.

There is also another class in whom the operation of this organ may be traced—I refer to the lovers of the mysterious. There are persons who have an instinctive love of the mysterious, and who, if they possess also a large endowment of Cautiousness, derive intense gratification from the mystic and the horrible. For them the narrations of Mrs Radcliffe and Lewis, and the tales of the German legend-mongers, were recorded; and the more impenetrable the motives, and the less like the actions of ordinary men, the more exquisite is the mental repast considered. Relate every-day occurrences, and they are wearied, unless they can contrive to surround the subject with a mysterious hue, and thereby render even the common-place supernatural. Their literature consists of romances which describe mysterious murders performed in mysterious vaults, by men who are influenced by inadequate motives; and, if to these mystic horrors there be added the entrance of several ghosts, and bead-counting nuns, blood-stained and dishevelled, their notion of a literary feast is realized. Absorbed as they are in the narrative, there is no room for surprise, but, for the time being, they become the heroes of the events detailed. In some cases, indeed, the impression has been sufficiently powerful to render the scenes and persons palpable to vision, and they have been recoiled from as from real existences. It is in recognition of this feeling of the mind that popular novels are constructed; for the authors have learned that, in the language of Dickens, "to surround anything, however monstrous, with an air of mystery, is to invest it with a secret charm and power of attraction which to the crowd is irresistible." Novel-writing is in fact a species of quackery as real, if not as palpable, as that which is evinced in vending cure-all medicines.

The case of those who indulge in the narration of ghost stories presents similar features. Such persons will be found endowed with large Eventuality and "Wonder;" and as they usually relate the events with the earnestness of full belief, they serve to educe the feeling of the mysterious in the listener: you see the most intense interest working in every feature; breathing is partially suppressed; a quiet awe pervades the company; the younger members creep closely together; and should the door be suddenly opened, all the phenomena of extreme fear are displayed. This scene is unhappily no fiction; and many a man to whom darkness and solitude are horrors unutterable, traces the origin of the painful forebodings to this

misguided use of the organ called "Wonder" in guardian or parent.

It need scarcely be intimated that the term "Wonder" does not express the feelings of the class just described. They realize the events described as facts, and no doubt respecting their probability occurs. There is no surprise ; but the supernaturalities are as readily received as if they were common occurrences. If, then, the feelings in question are the offspring of the organ we are treating of, it is obvious that the term "Wonder" is not only inexpressive of, but antagonistic to, its function.

Some phrenologists have entitled this organ "Supernaturality." But in selecting this term, they appear to have recognised that fallacious mode of nomenclature, which either indicates a morbid condition, or presumes the exalted action, of the organ. It is quite possible to have this organ ultra-active, without any sense of the supernatural being evolved ; nay, with the denial of the fact that there are spiritual existences at all. For instance, the lovers of the new may employ the organ in this mode alone, and full scope would be given for its most energetic action, whilst seeking amidst discouragement to place the unattained in the category of the attained, with unquestioning faith in the truth of the principle enunciated. If, then, the term "Supernaturality" had been generally adopted, a class of facts would have been tacitly excluded from connection with the organ, which supply striking illustrations, and the neglect of which would preclude a correct analysis of its functions. Moreover, it represents an exaltation, if not an abuse, of the organ to be its primary function ; whereas correct nomenclature, treating abuse as an excrescence, speaks of use alone.

The term "Marvellousness" was suggested by Spurzheim ; and, notwithstanding the valid objections made by Mr Combe, its use meets, even now, with the sanction of many able phrenologists. The objections which apply to the term "Wonder," are applicable to the name proposed. To wonder and to marvel are almost analogous emotions—the only distinction being, that marvelling indicates the superlative degree of surprise. Hence, were we compelled to select either term, there could be no hesitation in preferring "Wonder," seeing that it expresses the medium or customary feeling ; whereas marvelling is not only an emotion that is rarely evolved, but one which requires a co-operation of Concentrativeness, from its continuity. It is true that *we* marvel when we hear the visionist describing the lineaments and actions of the ghosts he has seen with believing awe, or when we

view the earnest astrologer questioning the planets respecting his destiny ; and it is probably to the fact that we thus marvel, that the secret of the false nomenclature is to be ascribed. But what we require is, not the indication of our own emotion, but the analysis and expression of that which we observe in others—we are to describe a fact and not utter a *criticism*.

Having thus endeavoured to shew that *all* the appellations proposed for this organ are inappropriate, if not antagonistic, to its functions, the question occurs—What term is fitted to express the primary operation—not a particle more or less—of the organ ? It appears to me that the only safe mode of determining on nomenclature, is to trace out the *one* emotion which is to be found in every case wherein an organ acts. For if one and the same emotion can be traced in every case, however diverse the mode of manifestation, the inference would appear warrantable that we had detected that one elementary quality for which we sought. For example, as regards the organ denominated Form, we know that in every case wherein it operates, the power of appreciating outlines is traceable, and hence we infer that it is the shape-cognizer. If this be the correct mode of deducing the function of an organ, it seems also to include the proper principle for determining on nomenclature ; for the appellation is to indicate the exact function by compressing a sentence into one descriptive word. It is, indeed, in correspondence with this rule, that the names of Hope, Size, and the other correctly named organs, have been selected. Admitting the principle, its application to the organ called “Wonder” is not difficult, as one quality is prominent in every class of cases, and no other quality intrudes. For whether the individual display its influence in but one, or in all the modes described—whether he is earnest in behalf of the new, or reposes credence in the so-called marvellous, or thinks that he sees or communes with spirits—still the ever recurring quality is that unfaltering FAITH which becomes developed in the corresponding actions. In the cases which were cited we found that the mere presence of the supposed supernatural existence induced the *practical* feeling that it was a reality, and the correcting organs were for the time unable to dispel the illusion. Hence Socrates *heard* the voice of his spirit-guide ; Luther *fought* with Satan ; and Blake painted from life ; and in each case there was an indubitable belief in the actuality of the object. Nor does faith characterise these extreme manifestations alone ; but it is found equally strong in those developments of the organ which occur in every-day life,

Thus when we see a Carlyle or an Emerson believingly depicting a condition of society, when the man, and not his dress, and humanity rather than nationality shall receive the preference—a prospect alone brought in view by the telescope of their catholic spirits—we perceive such a firm assurance in their imaginings as requires some deeper principle than that of Hope for their production—and this principle I think is to be found in the organ called “Wonder.” This organ indeed, seems to be the very parent of abstract earnestness, the element of which is energetic belief. Hence, wherever there is found the earnest enthusiast, who supports his principles undeterred by the scorn of the worldly-wise—there I infer the existence of a well developed organ of “Wonder;” and I have never been disappointed. So again, whenever a man has been found who, though too acute to love the mysterious merely because it was mysterious, but yet by whom the province of faith was practically recognised—there a large endowment of the organ has been found. Thus, in the converse cases, where men display a tendency to unreasoning doubt, and cavil at the “why and because” of things which are beyond the power of reason—such undue scepticism has been found in connection with a feeble development of the organ called “Wonder.” Every fact, therefore, which illustrates the function of this organ, appears to evince that it is the eliminator of faith.

Having thus arrived at its primitive function, there can be little difficulty in selecting the name of the organ. I have premised that organological nomenclature should be so constructed that, while it includes every possible mode of manifestation, it should exclude those minute shades of feeling to which an organ approximates, but from which it is in reality alien. Moreover, it is desirable to avoid the selection of a term which has both a popular and a scientific sense; because, as the customary meaning is the one which most affects our impressions, we are liable to the entrance of false conceptions of the functions of an organ, and that when we least suspect it. Applying these principles to the organ called “Wonder,” and finding that it eliminates belief, FAITH seems to be the very word to characterise its function. The popular and scientific senses of the proposed name would assimilate; and the operation of the organ would be fully expressed. As this word merely implies the existence of a blind emotion, there is no restriction of its operations implied, but it merely indicates that abstract belief which can as readily accept the incoherencies of Bœhmen, as the enlarged teachings of Melancthon, and adhere as earnestly to Islam as to Christianity, according to its healthiness or its educa-

tion. Again, the term, by simply suggesting use, accords with that true principle of Phrenology which indicates that every cerebral organ is essential to the welfare of man; and which, therefore, implies that the nigher we approximate to an appreciation of its function, the more palpable will its uses become. Whether he will or no, man, as a tenant of earth, cannot avoid exercising faith; for mysteries, whereby the keenest research has been baffled, are interwoven into the realities by which he is surrounded. If, then, nothing was received as a fact, but what had been deduced through a long and rigid process of reasoning,—and devoid of the influence of this organ, man would necessarily be thus situate,—his creed would occupy but a few words; and hence the truest wisdom, in the language of Bacon, is to “give unto faith that which unto faith belongeth.” For so long as the blade of grass contains its mysterious principle of vitality; so long as the planets are sustained in their courses by that wondrous principle which we denominate gravitation; so long as the relation of Creator and creature subsists; so long will the operation of FAITH be demanded, and its largest developments be tasked.

[After receiving the foregoing article from Mr Hytche, we called his attention to a paper by Mr J. L. Levison, in vol. ix. of this Journal, p. 636, where faith or belief is maintained to be the function of the organ in question; and more particularly to the following observations which were appended to that paper by ourselves:—

“We are disposed to think that belief is in every case an intellectual operation, though frequently modified in its character by various of the affective powers. Belief that an occurrence has happened, or will happen, seems to be a conception of Eventuality, accompanied by the notion of past or future time; and, in like manner, belief in a fact that is not an event or relation, appears to be a conception of Individuality. The chief affective faculties by which the character of these conceptions is modified, are Wonder, Hope, Veneration, Cautiousness, and Self-Esteem. Causality, also, has much influence.

“When *Wonder* is inordinately strong, there is a powerful tendency to believe in the marvellous, the strange, the occult, the surprising. We know a gentleman with the organ large, who confesses that the more wonderful a circumstance related to him is, the more apt is he to believe it. It is among the ignorant that this effect is most likely to happen; for in them the suggestions of the sentiment are in a very slight degree counteracted by knowledge. ‘Wonder,’ says Lord Kames, ‘is the passion of savages and of rustics. . . . The more supernatural the facts related are, the more wonder is raised; and in proportion to the degree of wonder is the tendency to belief among the vulgar.’ (*Sketches*, B. i. sk. iv. § 2.) To a similar effect Montaigne observes: ‘Things unknown are the principal and true subject of imposture; forasmuch as, in the first place, their very strangeness lends them credit,’ &c. ‘Nothing is so firmly believed as what we least know; nor are any people so confi-

dent as those who entertain us with fabulous stories, such as your alchemists, judicial astrologers, fortune-tellers, and physicians.' (*Essays*, B. I. ch. 31. *Cotton's Transl.*)

"Hope, when very powerful, disposes men to believe on slight grounds what they wish to happen or to be the case. This sentiment is rightly denominated 'credulous hope' by Tibullus—

'Credula vitam

Spes fovet, et fore cras semper ait melius.'

It facilitates belief in the existence of a state of happiness beyond the grave. By persons in whom the organ of Hope is moderately developed, the evidence of that existence is more critically scrutinized than by individuals differently constituted. Burns, whose Hope was moderate, expresses himself thus: 'One thing frightens me much; that we are to live for ever seems *too good news to be true*. That we are to enter into a new scene of existence, where, exempt from want and pain, we shall enjoy ourselves and our friends without satiety or separation—how much should I be indebted to any one who could fully assure me that this was certain!' Wonder, we may remark, was a feeling by no means deficient in the mind of Burns.

"Those who have much *Veneration* are prone to listen with implicit faith to whatever proceeds from the mouth of revered Authority.

"From *Cautiousness* arises facility in giving credit to what is feared. A very timid person in a storm at sea is much more apt than a courageous individual to believe the assertion that the ship will assuredly be wrecked. And as Hope disposes to belief in a happy eternity, so perhaps does Cautiousness to faith in a miserable one. Both faculties are aided by Wonder in this.

"Inordinate *Self-Esteem* renders people credulous of whatever tends to their own aggrandisement; in weak-minded men, and even in some belonging to a different class, it causes the grossest flattery to be swallowed and believed. This is well expressed by Gay, in his eighteenth Fable:

'But flattery never seems absurd;
The flatter'd always take your word:
Impossibilities seem just;
They take the strongest praise on trust;
Hyperboles, though ne'er so great,
Will still come short of self-conceit.'

"Dr Spurzheim seems to have regarded belief as an intellectual operation, and to have, like us, considered Wonder as only a modifying cause. His words respecting this sentiment are, that it 'exerts a very great influence over religious *conceptions*.' Now conception is a mode of action of the intellectual faculties alone."

Subsequently, Mr Hytche addressed us as follows:—

"I have to thank you for directing my attention to the discussion on the function of the organ called 'Wonder,' contained in the 9th vol. of the *Phrenological Journal*; for I was not aware that Mr Levison had broached opinions so similar to my own, though upon evidence somewhat dissimilar. I have carefully perused that correspondence; but a reconsideration of the subject has only strengthened the impression, that faith is a primitive emotion, and the offspring of the organ in question. I cannot concur in the opinion of Mr Levison (p. 637), that the organ called 'Wonder,' 'gives credence to what we

regard as *fundamental truth* ;' for not only does it never discriminate between truths, but its tendency is rather to consider every statement as true. It never asks for an intellectual comment, as implied by Mr Levison, but it simply accepts. As has been shewn by the facts which illustrate the functions of this organ, it can as readily receive a lie as a truth, and it never hesitates to accept the lie as a truth ; and hence the necessity of intellectual guidance.

"As regards the opinion expressed at p. 642, that belief is an 'intellectual operation,' I consider this as partially correct ; for, as belief has two sources, its aspect can be intellectual as well as emotional. Thus, for example, when we adopt an opinion after rigid examination, then it is clear that the belief engendered has sprung from an intellectual operation, for it is based on an ascertained 'why and because.' But we do not always seek for the proofs of received impressions, and yet they are as practically admitted as if they had been mathematically demonstrated. For example, the evidence of Revelation has a limit, and if its mysteries be received, they must be accepted by faith ; and yet, what intelligent Christian hesitates to give the credence which is needed ? It is in this, and analogous cases, that we trace the operation of the organ called 'Wonder,'—the appreciator of mysteries ;—for we perceive the utterance of that emotional faith which receives without questioning, instead of that intellectual belief which never accepts until it has questioned."

To this the following reply was sent :—

"Though agreeing with many of your details, I am still disposed to adhere to the opinion expressed in the *Phrenological Journal*, vol. ix, p. 642, as to the variety of the sources of credulity ; and, consequently, to differ from you in the opinion that the organ hitherto named Wonder, should be denominated 'Faith.' The various sources of credulity are, I find, recognized by sundry writers on mental philosophy, as well as by me. 'Our passions,' says Hume, 'are very favourable to belief ; and not only such facts as convey agreeable emotions, but very often such as give pain, do upon that account become more readily the objects of faith and opinion. A coward, whose fears are easily awakened, readily assents to every account of danger he meets with ; as a person of a sorrowful and melancholy disposition is very credulous of every thing that nourishes his prevailing passion. When any affecting object is presented, it gives the alarm, and excites immediately a degree of its proper passion ; especially in persons who are naturally inclined to that passion. This emotion passes by an easy transition to the imagination ; and,

diffusing itself over our idea of the affecting object, makes us form that idea with greater force and vivacity, and consequently assent to it, according to the precedent system. *Admiration and surprise have the same effect as the other passions*; and accordingly we may observe, that among the vulgar, quacks and projectors meet with a more easy faith upon account of their magnificent pretensions, than if they kept themselves within the bounds of moderation. The first astonishment, which naturally attends their miraculous relations, spreads itself over the whole soul, and so vivifies and enlivens the idea, that it resembles the inferences we draw from experience.' (*Treatise of Human Nature*, Part III., § 10; *Hume's Works*, vol. i. p. 162.) The 'precedent system,' to which Hume refers, and which is largely discussed by him, is, that vivacity of an idea not only produces belief, but is itself belief; 'they are individually the same.' Here I cannot agree with him, but do not pretend to define wherein conception differs from belief. Mr Bailey of Sheffield, in his excellent *Essays on the Formation and Publication of Opinions*, 2d edition, p. 56, takes notice of the phenomena remarked by Hume in the passage above quoted; and I have no doubt that other writers also have done so.

"Again you say, that 'Faith' expresses all the functions of the organ. Does it express wonder? Surely not. If not, what organ is the seat of that emotion, which certainly is a part of human nature?

"You say that people cannot wonder at what they believe—that persons who see apparitions, and believe therein, do not wonder at them. What, then, *can* they wonder at? At what they do *not* believe? This cannot be maintained.

Surprise and wonder are not synonymous. I wonder at every object of surprise, but am not necessarily surprised (or startled) at every object of wonder. Man, says the Psalmist, is 'fearfully and *wonderfully* made:' so the anatomist *believes*, acknowledges, and feels; without, however, being surprised. In the concluding paragraph of your paper, you speak of the '*wondrous* principle' of gravitation. Here also we wonder without being surprised; we *believe* and wonder.

"The following passage in Dr Campbell's *Philosophy of Rhetoric*, B. I. chap. v., expresses in a few words the philosophy of belief in testimony:—'Testimony is a serious intimation from another, of any fact or observation, as what he remembers to have seen, or heard, or experienced. To this, when we have no positive reasons of mistrust or doubt, we are, *by an original principle of our nature (analogous to that which compels our faith in memory)*, led to give an unlimited assent.' If we need a special faculty to enable us to believe

what is told us on apparently good authority, from what source comes faith in memory? For instance, whence do you derive the belief that you lately sent me a manuscript on the function and nomenclature of the organ called Wonder?

"According to a writer in vol. iii. of the *Phrenological Journal* (whose paper is reprinted in 'Selections' from that work), Voltaire's bust represents the organ of Wonder as 'full.'

"Your principle, that, to determine the nomenclature of a faculty, we should 'trace out the *one* emotion, which is to be found in every case wherein an organ acts,' is perfectly sound. It is that inculcated by Gall and Spurzheim (see *Phren. Jour.*, vol. ix., p. 150, 151), and has been followed by myself in attempting to elucidate the elementary qualities of Combativeness and Destructiveness."—(*Id.* ix., 151, 407; xiii. 37.)

"Pray turn these hints in your mind, and favour me with any observations that may occur to you.—R. C."

Mr Hytche complied with our request, by writing as follows:—

"As I do not feel myself fully qualified to discuss the questions which you have started, I can only jot down the few thoughts which have occurred on a consideration of the subject.

"I do not deny the statement of Hume, that 'our passions are very *favourable* to belief.' I only affirm that of two persons, one with the organ called 'Wonder' largely, and the other feebly developed,—the difficulty of the one will be *not* to believe, and that of the other to believe, in facts external to itself. In one sense, Cautiousness may be said to believe, seeing that when it fears, it never doubts that it has cause for fear. But faith is a deeper principle; for it implies, to some extent, *acquiescence*, as well as assurance. We do not desire to recede from that in which we repose faith, but rather cleave to it: whereas the impulsive belief which springs from Cautiousness, leads us to retire in haste.

"Citing my statement, that 'Faith' expresses all the functions of the organ called 'Wonder,' you ask, 'Does it express *wonder*? Surely not.' If the term mean the extreme of expressed astonishment, then the organ does not wonder; but if it be merely meant to indicate an appreciation of the mysterious, then it does wonder. The facts detailed in my paper indicate the conclusion, that the organ delights in the mysterious; in other words, in the phenomena *yet* unaccounted for. When David exclaimed, to cite your own illustration,—'We are fearfully and *wonderfully* made;' he was merely expressing the sublimity which is aroused by viewing

the *unfathomable* works of God ; and the language was, in fact, the very utterance of that enlightened faith which receives, though it cannot trace. This is what I intended, when I spoke of the principle whereby matter coheres,—the ‘ *wonderous* (or mysterious) principle’ of gravitation.

“ You quote my assertion, that ‘ what people believe, they cannot wonder at,—that persons who see apparitions, and believe therein, do not wonder at them,’ and inquire, ‘ What, then, *can* they wonder at ?’ I believe that I stated, that having no conception that the spectrum is unreal, the visionist does not wonder *at the time*, but simply accepts and acts on it as a reality. If, then, he wonder at all,—and the term ‘ wonder’ implies a certain amount of scrutiny,—it is when the vision has faded, and its influence has been counteracted. Even then, it is the intelligent alone who so wonder ; for the ignorant man will believe that he has seen a ghost until the day of his death. When, then, I see a man wondering at mysterious phenomena, I learn that faith is inactive, or at least that it is being combated by the intellect.

“ You ask, ‘ From what source comes faith in memory ?’ Such faith appears to *admit* of the co-operation of the organ called ‘ Wonder.’ For example, there is no certainty that memory has not erred, for it has failed before. If, then, I act on memory, without tracing the steps whereby the conclusion has been derived, the action of faith seems to be presented ; but if I proceed to the result step by step, then the opinion is arrived at through a process of reasoning, and gives knowledge rather than mere assurance. I do not, however, give this idea with certainty, but only as the inclination of my opinion.

“ I may intimate, that I consider there is a distinction between ‘ belief’ and ‘ faith.’ *Belief* appears to be knowledge derived *through* a deduction, in which nothing is granted until it is proved ; but *faith* is assurance, without seeking for, or even thinking that deduction is essential. Belief, then, is of intellectual origin ; and faith is emotional, arising, as I believe, from the organ called Wonder.”]

IV.—*On the Right of Religious Freedom.* By Mr E. P. HURLBUT, New York.

It is provided by the Constitution of the United States, that “ Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof.” The Constitution of the State of New York has a provision

on the same subject, in these words:—"The free exercise and enjoyment of religious professions and worship, without discrimination or preference, shall be for ever allowed in this State to all mankind." Other State Constitutions contain similar provisions, the object of which is to secure what is called freedom of religion, or the perfect equality of religionists before the law. But it does not appear that the equality of all men, irrespective of their religious opinions, is actually secured—nor but that there is in this country a species of religious establishment, notwithstanding these constitutional provisions. It would seem that the State has not yet perfected the work of human enfranchisement, if any man can suffer for opinion's sake.

The sense of religion is innate in the human mind—or, in other words, man is a religious being by the very constitution of his nature. He may possess much or little of this feeling, according to his organization; but if a man be found who is entirely destitute of it, his mind is far from being in a normal condition, and he is a very eccentric person. Perhaps that is the worst that ought to be said about him. The religious sentiment has its seat in the organ of Veneration, which originates the feeling of awe and reverence for the Supreme, the Infinite, the Almighty Power of the Universe. Faith, when allied to Veneration, disposes a man to believe in Divine mystery; and Hope, looking to the future, lends its bright images to religion, and points him to a happy Immortality. To the combined action of these sentiments may we ascribe the religious feelings. Now, since these relate to Infinity and the Future, it is difficult to perceive why the absence of any, or a peculiar manifestation of these sentiments, has ever been regarded as an offence to the State. The religious feelings proper have little concern with the affairs of our present existence. Reverence for the Divine Being, faith in the infinite mystery which shrouds his existence and his power, and an expectation of a blessed immortality, refer rather to the Deity and man's relation to Him in a future world, than to those humble practical relations in which man stands to his fellow in the social state. It is not upon these sentiments that a man relies when he appeals to his brethren for justice, the protection of his rights, or for love and sympathy. In the assertion of his rights, he appeals to the enlightened conscience of mankind—and addresses their benevolence, when he demands their pity or charity. Although faith and hope abide in the human mind, yet greater than these is charity—and greater far than this favourite sentiment of the Apostle, is Justice. It is upon Conscientiousness, enlightened by the intellect, that the social man

altogether depends for the acknowledgment and protection of his rights. Now, a man may possess a large endowment of the sentiments of justice and benevolence, and yet be deficient in veneration, faith, and hope; so that although, in all his social relations, he may be upright and charitable, he will not manifest the religious feelings to such an extent as other good men. On the other hand, a man may exhibit these feelings in a very striking manner, but at the same time possess such a scanty endowment of the sense of justice and benevolence, as to circulate at a great discount in society on account of these defects, and, indeed, be rather a dangerous man. This is so well known, that it has ripened into a proverb, that "one may be Godward straight, but manward crooked." Such persons are often charged with religious hypocrisy, while those wanting in the religious feelings, but who, nevertheless, practise every social virtue, are denounced as infidels; while the truth is, both of these classes of persons act in obedience to the laws of their organization—the one in yielding to the supremacy of the moral, and the other to that of the religious feelings.

Now, the religious as well as the moral sentiments are of themselves blind; they produce mere feelings or emotions, which are altogether crude and ignorant, until informed and directed by the intellectual faculties.

But the observing and reflecting powers of the human intellect take up the theme suggested by these sentiments, and by the process of thought bring the mind at length to an opinion or judgment in the matter. This is a natural and inevitable process of the mind. The intellect will inquire of facts, and make its deductions in reference to every emotion of the sentiments—it will reason and determine upon them. The religious, benevolent, and conscientious feelings demand to be enlightened by the intellect, and must take their direction accordingly. Now, because such an exercise of the intellect is natural and inevitable, the State can do nothing whatever in the case, either to interrupt it, or to censure its ideal results.

This innocent and necessary process of the mental faculties terminates in a speculative result, or an opinion, which will be different in one mind from that of another; but whatever may be this diversity, it is no concern of the State, since at the most only an opinion, and not an act, has resulted; an opinion, which, in the case of the religious sentiment, does not affect man's relations to his fellow-man, but only his relations to the Deity, which relations cannot be adjusted by human legislation.

The State, then, having in view its only office, the protec-

tion of rights, has no such concern with any speculation, conclusion, or belief, in reference to any question of religion or morals, as will authorise it to make distinctions among men on that account; but it must bring its authority to bear only upon such positive acts as are injurious to the rights of mankind, and not attempt to diminish the sovereignty of reason.

If this be correct, then several clauses in the American Constitutions ought to be stricken out—and conservative provisions made to protect freedom of opinion; and the common law and statutes, so far as they interfere on this subject, ought to be abrogated.

The Constitution of the State of North Carolina, which was adopted in 1776, contained the following provision:—“That no person who shall deny the being of God, or the truth of the Protestant religion, or the divine authority of either the Old or New Testaments, or who shall hold religious principles incompatible with the freedom and safety of the State, shall be capable of holding any office or place of trust or profit in the civil department within this State.” This was amended in 1836—and “Christian” was substituted for the word “Protestant.” But for sixty years all Catholics were excluded from office in that State—and although they are rendered eligible by the amendment, still all heathen and infidels are excluded, and the true believers have all the offices to themselves. But that this provision should not be written down in flat prose, without being redeemed by any constitutional poetry, the framers of the same instrument caused it to be inserted therein—“That all men have a natural and unalienable right to worship Almighty God according to the dictates of their own conscience.”—They may worship—and the State will not interrupt them—but it will inquire as to the Divinity they adore—and if He be not the Constitutional Jehovah, the unlawful worshippers will be excluded from *civil* office. They may, however, hold military offices—the State being content to have heathen bleed in its defence.

Then, what may not the Legislature enact as to persons holding religious principles which may be deemed incompatible with the freedom and safety of the State? Even the Christian sects may attempt, under this clause in the Constitution, to exclude each other from office. Ought such a door to be open—such an attempt to be possible?

The Constitution of Massachusetts, adopted in 1780, declares that “The Commonwealth have a right to invest their Legislature with power to authorise and require, and the Legislature shall, from time to time, authorise and require the several towns, parishes, precincts, and other bodies-poli-

tic, or religious societies, to make suitable provision, at their own expense, for the institution of the public worship of God, and for the support and maintenance of public Protestant teachers of piety, religion, and morality, in all cases when such provision shall not be made voluntarily." The Legislature is invested with authority to enjoin upon all subjects an attendance upon such teachers of religion—if there be any which they can conscientiously and conveniently attend; but the people are to have the choice of their teachers. Every denomination of Christians demeaning themselves well, shall be equally protected by the laws—and no subordination of one sect to another can be established.

This portrays the infant state of Religious Freedom in the "Cradle of Liberty." It would seem, according to the principles which I have endeavoured to maintain, that there was this obvious mistake in this Constitution—that it expressly authorised what it ought more expressly, if possible, to have forbidden—to-wit, a species of religious establishment, and its compulsory support.

The chief officers of state, under this Constitution, were required to declare that they believed in the Christian religion, and had a firm persuasion of its truth;—but, by an amendment adopted in 1820, this is dispensed with, and they now swear allegiance to the Commonwealth, and that they will support the Constitution. .

The Constitution of the State of New York provides for the free exercise and enjoyment of religious profession and worship. But, notwithstanding this provision, the Legislature may interfere with the rights of opinion—and the courts, in the administration of the common law, may punish a man for speaking against the prevailing religion of the country.

In most of the States, witnesses are subjected to a religious test. A man cannot testify in a court of justice, unless he believe in a God; and in the State of New York, in former years, many respectable persons were declared to be incompetent witnesses, because they did not believe in a state of future rewards and punishments. Even under the present laws of the State, the witness must believe in a God who will punish false swearing, or he is incompetent.

Before requesting a neighbour to witness a will, the testator must be sure that he knows his religious opinion, and must be careful to select a man who will not relax his faith—lest the witness should prove to be incompetent, for the want of this religious test, and the will should therefore turn out a nullity. If a man happen to be slain in the presence of an unbeliever, it is fortunate for the offender, since there can be

no proof made against him; and so the community may be exposed to further violence.

The exclusion of a witness for this cause, is based upon the notion that religious faith is necessary, in order to ensure a proper regard for truth. This is unphilosophical, and opposed to the experience of practical men. The religious sentiments are independent of that faculty of the mind which respects the truth. They may exist to a striking degree, and the possessor may, nevertheless, commit perjury with great facility. I speak as well from the constitution of the human mind, as from a liberal experience of testimony from all sorts of men. I have known religious perjurers and infidel perjurers; and as many of one as of the other. It is to the sentiment of conscientiousness that we owe the regard for truth; and we have seen that that may exist independent of the religious feelings. How unwise, then, to adopt a religious test for a witness! All intelligent moral beings ought to be regarded as competent witnesses; and the degree of credit to be awarded to their testimony must depend upon the characters which they bear in society.

Neither the rights of witnesses nor suitors can be regarded as secure without the adoption of this rule, and it seems to me important enough to be incorporated in the Constitution of a State.

If the State has no concern with matters of faith and opinion—if its only authority is to conserve human rights—if every man may demand of right that he be not molested by the power of the State, unless he hath infringed upon another's rights—if, in a word, the principles* which have guided me in this attempt to define the powers of the social body, are well founded in reason and morality, as I cannot doubt they are—then, in respect to matters purely of a religious nature, the laws ought to be as silent as if there were no such thing as religion in the world. The law can have no religion, since it cannot have all. If it select that of one sect, it offends against the rights of all other sects. If it take into favour the religion of the majority, it tyrannizes over the minority; if it establishes the religion of the Christian, it offends the Infidel, the Jew, and the Heathen. But it is fortunate that the State has no occasion to interfere on the subject, since it can protect the rights of all men, without infringing upon the rights of any; and it has only to declare that there are so many good religions, that it will not venture to make choice among them.

How, then, could any legal controversy arise because of

* See *Phrenological Journal*, xvi., 317.

religion, or any matter of faith or opinion? The believer and the infidel might debate, but the State would not interfere until they came to blows. If the believer struck first, the State would condemn him, although he might hold the best sort of religious opinions. The State would judge him by his acts alone. In the religious riots which lately disgraced Philadelphia, the State perceives only that arson, murder, and other crimes have been committed, and it is hoped will prevent their recurrence.

In the fierce paper warfare of sects, the law may detect a libel—not a libel on religion, but on human character. But it cannot detect any heresy, because it has no orthodox faith; nor can it punish blasphemy, because the law only protects *human rights*.

As regards the observance of a day of rest, the State has an undoubted authority to abstain from all action on such a day; but it cannot rightfully compel any man to keep Sunday as a religious institution; nor can it require him to cease from labour or recreation on that day, since it cannot be shewn that the ordinary exercise of the human faculties on that day is in any way an infringement upon the rights of mankind.

There cannot properly be any legal controversy as to the introduction of the Bible into the schools. The law has no Bible, and cannot recognise any distinction between Catholics, Protestants, Jews, and Infidels.

The interests of religion, as well as the rights of mankind, are deeply concerned in establishing these principles. There is no surer way to make any religion odious, than to attempt to coerce men into its support. If I wished to corrupt and destroy it, I would give it power over the laws. The stake would soon follow the statute, and the conscience and benevolence of mankind would revolt at its alliance with the State, and both would fall together.

But it is inquired, can a State exist which recognises no religion? I answer, that it can, as well as if it do not recognise music. One is no more the natural offspring of the human mind than the other; and both will flourish best without the interference of the State authority. And, indeed, the State might as well ordain a tune as a religious exercise, and a few fragments or notes of that tune, as a few fragments or parts of any particular religious faith.

A statute of the State of New York, enacted in 1844, on the subject of Common School Education, contains this clause:—

“No school shall be entitled to a portion of the school monies (*i. e.* monies from the school fund of the State) in which

the religious sectarian doctrine of any particular Christian or other religious sect shall be taught, inculcated, or practised, or in which shall be used any book or books containing compositions favourable or prejudicial to the particular doctrine or tenets of any Christian sect.

“ But nothing herein contained shall authorise the Board of Education to exclude the Holy Scriptures, without note or comment, or any selections therefrom, from any of the schools provided for by this act; but it shall not be competent for the said Board of Education to decide what version, if any, of the Holy Scriptures, without note or comment, shall be used in any of the said schools; provided that nothing herein contained shall be so construed as to violate the rights of conscience, as secured by the Constitution of the State and of the United States.”

This statute arose out of a controversy between the Catholics and Protestants, in the city of New York, respecting religious teaching in the schools. It is well that it ended in a statute rather than in bloodshed, as did a like controversy in Philadelphia, although the statute may be based upon false principles. It virtually forbids religious teaching in the schools; while it seems to me that it ought neither to forbid nor to command it, but to remain as silent on the subject of religion in the schools as elsewhere, and leave the people of each school district to determine their course for themselves.

A school district is a small democracy, and is exactly adapted to the entire control of its own affairs. If this be not so, there is no virtue in the democratic principle, and the sooner we centralize the powers of State the better.

But the Board of Education are not allowed, by this act, to determine what version of the Holy Scriptures, without note or comment, may be used in the schools. This may be very well; since, if I am right, the inhabitants of the district must manage every thing. I have only to observe on this provision, that I do not perceive how the Legislature, in its proper capacity, obtained any idea as to what Scriptures are holy and what are not—what are with and what are without note or comment.

A few more such statutes, and the decisions of our courts will, by and by, become deeply imbued with ecclesiastical learning, and quotations from the holy fathers; and sectarian religion will furnish a large share of legal controversy. Religion was once forbidden to go to law, and it would profit by obedience.

This statute at last preserves the rights of conscience—which had the Legislature observed at the outset, the statute would not have been passed—and the School Districts

would have been permitted to manage their affairs in their own way.

The error lay in the recognition of a religious controversy at all. It might have been permitted to spend its force in argument—the State could not properly take part until somebody was hurt.

It would seem that we need further constitutional provisions—such as will render it impossible for the religionist of any sect whatever to obtain the least legal recognition, or the ratification of any portion of his creed, the adoption of his sacred books, or any other favour from the State. Until the State take the position of perfect indifference and impartiality, the rights of conscience will not be secure; and that religious freedom, so much boasted in America, will rest upon an unsafe foundation.*

V. Correspondence of Dr GALL.

It was announced in a former volume of this Journal (xvii., 305), that Mr Gustav Von Struve, editor of the *Zeitschrift für Phrenologie*, had published an appeal to his countrymen, in which the possessors of letters written by Dr Gall were solicited to communicate them for publication. Of several letters thus brought to light, and which have been published in the *Zeitschrift* for March 1845, we now present the following translation. They are addressed to Mr R. Meier, practising physician in Bremen.

* This and sundry other not less valuable papers (some of which appeared in our 15th and 16th volumes) have been collected by the author in a volume, entitled, "Essays on Human Rights and their Political Guaranties. By E. P. Hurlbut, Counsellor at Law in the City of New York. New York: Greeley and M'Elrath. 1845." It consists of ten chapters, the titles of which are as follows:—I. The Origin of Human Rights.—II. The True Function of Government.—III. The Constitution of Government.—IV. Constitutional Limitations and Prohibitions.—V. Constitutional Limitations continued.—VI. The Elective Franchise.—VII. Rights emanating from the Sentiments and Affections.—VIII. Rights of Woman.—IX. The Right of Property, and its Moral Relations.—X. Intellectual Property. In our opinion, these important subjects are discussed by Mr Hurlbut in a manner truly philosophical; he displays a rare union of the power of vigorous reasoning, with just perception of human rights, and the ability of expressing his ideas with clearness, terseness, and precision. We intend to lay some further specimens before our readers.—ED.

No. I.

BRUNSWICK, 7th September 1805.

WOHLGEBORNER HERR DOCTOR,—I am very much obliged to you, and thank you sincerely for your kind invitation. I could not sooner answer you, because the plan of my movements was altogether undetermined. Either I must hasten back to Vienna, or I must take a much longer time than they have allowed me. In the latter case, I will with great pleasure go to Bremen, although I have hitherto declined all similar invitations, in order to confine myself exclusively to university towns, and to be able, in due time, to return to my practice. At present, I am not certain whether I shall go direct to Hamburgh, and thence back to Bremen, or previously visit some other place. This cannot be determined sooner than fourteen days hence. Should the threatening troubles of war not prevent me, I give you, once for all, my word that I shall go to Bremen. Whether I shall be able to have the honour of lecturing there will depend on circumstances, which can be judged of only after my arrival. Subscriptions are always unnecessary, because, in the end, every one draws back who is inclined to do so, and many then join for the first time. I do not presume to hold you answerable for any thing whatever, however small; allow me only to write to you again about eight days before my setting out for Bremen. Should I find that the number of my audience does not meet my wishes, nobody will take it amiss if I proceed forward on my journey. I am almost led to wish for this last alternative, because I can see no end to my travels if I everywhere accept the polite attentions which, so contrary to my expectation, are offered to me.

In order to save time, I have lectured in Jena and Göttingen twice a day, and each time two hours. By this means, I am best able to connect my own plans with compliance with the wishes of the other towns. I willingly allow my auditors to fix the time. Accept, in the mean time, the assurance of my high esteem.

DR JOSEPH GALL.

Braunschweig, Poste restante.

I beg to present my respects to Dr Albers.

No. II.

In my exculpation, I can only lament the error which has occurred in regard to my answer to your kind communica-

tion. My assistant had addressed my letter to Hamburgh instead of Bremen, which I have learned only now on my return to Hamburgh. Pray, therefore, excuse what otherwise would have been an unpardonable neglect. It is not certain, but probable, that I shall go to Bremen in a month. My other intentions are the same as explained in my letter. Apologize for me, then, to your friends, and assure them that I rejoice to come into the circle of such scientific and enlightened men as the inhabitants of Bremen are described to me by every one here to be.

I beg to present my very particular compliments to Dr Albers, with the precursory admonition that I am altogether incapable of such conduct against our common and highly esteemed friend Blumenbach as the lying (*verlogene*) Osian-der represents. With much respect, your obedient servant,
DR JOSEPH GALL.

HAMBURGH, 10th December 1805.

No. III.

RESPECTED SIR,—You have laid me under so many obligations that I do not know how I shall be able to discharge my debt. For your kind offers, I beg to present my warmest thanks. There are so many of us, and we are so bound to one another, that, unfortunately, we require large roomy apartments all together. I, my attendant Dr Spurzheim, my servant, my modeller in wax, and two monkeys. Now, what shall I do with this respectable family? We must have, at least, three rooms, with the privilege of dissecting man and beast. As we shall remain only for a very short period, we shall most probably lodge in a hotel. We shall set out from this city on the 17th or 18th of January, and arrive in Bremen on the 19th or 20th. The sooner I can begin, it will be the more agreeable to me. If you can, between this time and that, have fresh brains in readiness, I will begin with the demonstration of the brain, which, although not absolutely indispensable, is very advantageous. The whole course will consist of ten lectures. If I can be allowed to lecture twice a-day, two hours each time, this would be very agreeable to the strangers (who may come from a distance to attend the lectures) and myself. The best hours are between 11 and 2, or between 5 and 8 or 9. In this particular, I shall be guided by the wishes of your public. I shall look out for a hall, and choose the one best adapted to the purpose. Above all, have the ladies associated with the gentlemen; for it will be extremely difficult to find a sufficient number for a separate

course. They enliven the audience in the most agreeable manner, on which account I am much pleased when they are not so ceremonious. I hope to satisfy them so much, that they shall be sufficiently protected against the remarks of the shallow witlings. Our mothers have a much greater influence over the first ten or fifteen years of our lives than our fathers; and, on this account, I expect a greater extent of useful application of my doctrines, if I can commit them to the ladies. Moreover, there is just so much of learning in my lectures, that every individual who has his five senses sound, and an exact clear understanding, will perfectly comprehend them. Nothing of mysterious anatomy, nothing of unintelligible technical terms, plain and popular as the naked truth itself, is all that I wish to present to my audience. I rejoice in the prospect of seeing the Bremen public, so much praised to me, and of making your personal acquaintance. With every respect, obediently,

DR JOSEPH GALL.

No. IV.

RESPECTED SIR,—With heartfelt distress I am forced to inform you, that I cannot yet have the happiness to see you and my honoured Bremen public so soon as I expected. Our departure was fixed for to-morrow morning; but the king of Sweden has just now sent his here resident Ambassador, and his first Physician in Ordinary, with the invitation to come to him for some days to Boitzenburg. You will at once see that I cannot decline compliance with this request. I go there to-morrow morning. Whether I shall remain there two, four, or six days, I cannot beforehand determine. Be so good, however, as excuse me to the citizens of Bremen. I will make all the haste possible, and inform you of the day of my leaving.

Not the expense, but the want of time, compels me to shorten my stay as much as possible. I wish you and your fellow-citizens to act according to your own pleasure, and I will not abridge my residence amongst you so much as to prevent a circumstantial exposition of my doctrine. It will be in the highest degree agreeable to me, if all those who intend to be my hearers will assemble to one course, or if not, that they will attend at different hours on the same day. By far too much time is lost when one course must be finished before a second is begun.

Your exceedingly kind offer I accept, and promise your dear lady that we shall behave ourselves as well as is possible for vagabonds (*vagabunden*) to do. Two apartments will

be sufficient, provided one of them is of such a description that it will not be necessary to spare it very much. Assign to us, then, the worst part of your house. We live more for our animals and for our anatomical investigations than for ourselves.

Commend me to your wife, Dr Albers, Professor Mertens, &c., and accept the assurance of my high consideration.—
Your most obedient, DR JOSEPH GALL.

No. V.

MÜNSTER, 3d March 1806.

DEAREST FRIEND,—I thank you very sincerely for your letter of 22d December. You have no occasion to plead any excuse for yourself on account of the result of my lecturing in Bremen. I am perfectly contented, and can lay no charge to your account, except this, that you were too kind to us in all that you did. I lament that you were so shamefully treated by thieves. You express, indeed, no suspicion against my servant; but he has so often cheated, and is besides so senselessly daring, that I still wish you to send me an exact description of your garment, and I shall have him watched in Vienna, where he, of course, will have no suspicion. Farther, I have only now, for the first time, obtained information of things which should long ago have cost him his neck. Since H—— makes so much ado about the head, it would be worth while to publish it as an anecdote in the newspapers.

You shall have the brain of the monkey, for I am still very much your debtor, and you will receive also your half-skull back at the same time, only not so soon as we promised; for we proceed, not towards Heidelberg, but to Holland. I have received again the most pressing invitations, and you know how many opportunities Holland will present for extending my anatomical investigations. I expect to find there a sufficient number of dolphins, turtles, monkeys, parrots, &c. In the mean time, I remain much indebted to you for the commissions which you have given. We cannot have a superfluity of good.

In Münster I have a very zealous, distinguished, and numerous audience; but I have found no physician of that sort of which you have several in Bremen. Here also, Ackermann has strongly vented his venom. Those who allowed themselves to be induced to stay away from the first lectures, now lament their absence. Thus I hope it will always fare with my opponents, so long as nature shall be my sole authority; and this shall be the case so long as my brain shall retain its vigour.

How goes it now with my amiable scholaraess (Schülerin)? Has she read to you her essays? Does the little modest maid ever speak a little word to you about me?

Is your lady well, and has she recovered from the disturbance which we occasioned to her? If any feeling of vexation lurks in your mind or her's, that you received us into your house, I beg you will put it in my power to do you some essential service; you will thereby lay me under an additional obligation. Commend me to all our acquaintances, and in every case reckon yourself on my high esteem and gratitude.

DR JOSEPH GALL.

My address, until farther notice, will be to Johann Beierle in Münster.

*Letter from Professor Blumenbach to Dr Albers of Bremen,
respecting Dr Gall.*

GOTTINGEN, 10th September, 1805.

I now send you the skull marked for you by Dr Gall, and I hope that, from the manner in which I have packed it in the box, it will reach you unobliterated.

If you have the pamphlet lately published by Arnold in Dresden, "Gall's Doctrine on the Functions of the Brain, represented by an Unprejudiced Hearer," you will be able, by means of the copperplate which accompanies it, easily to find out the situations of the organs, and their names, in case either should not be legible on the skull.

I need not inform you that I congratulate myself uncommonly on having heard Dr Gall, and become more intimately acquainted with him. His lectures were equally interesting and entertaining to me. Unfortunately, during his stay here we could not procure any fresh human brain. Nevertheless, he dissected for us, in Himly's house, one of an ox, according to his method. As soon as I have a little leisure, I will examine a number of brains after the same and different other manners; for the views which he maintains on the organization of the brain, the derivation of some of the supposed cerebral nerves from the spinal cord, &c., are to me extremely important.* What all the world has hitherto taken for the thalamus in the brains of birds, amphibiae, and fishes, he holds to be the nates, &c.

* These remarks of Blumenbach, after hearing Dr Gall lecture and seeing his dissections, contrast strikingly with what Sir Charles Bell published concerning Gall in the *Philosophical Transactions*, nearly thirty

Of such statements and other novelties he has a multitude, which—but first they require repeated proofs; for example, that the nervus phrenicus is remarkably strong in those mammalia which hybernate (die Winterschlafheiter).

His doctrine of the skull and organs possesses, indeed, the greatest interest for the great body of the public; and I have listened with pleasure to the cases of pure observation which he adduces as the foundation of it.

In my golgotha also (of national skulls), he found many entirely suitable, and to him, therefore, very welcome confirmations; for example, Locality in the Tunguse, Philoprogenitiveness in the Greenlanders, Language in the Hottentots (of whom Kolbe says that they learn easily the languages of Europe), and such like.

I must, however, observe that I am not yet able to find my way in many things (Nur freilich kann ich mich in manches noch nicht recht finden), as in the multitude of such heterogeneous and small organs as he crowds together in the forehead and on the orbits.

Vale, vir amicissime, et me amare perge! totum tuum,
BLUMENBACH.

II. CASES AND FACTS.

I. *On the Cerebral Development and Moral and Intellectual Character of Raphael Sanzio d'Urbino.* By GEORGE COMBE.

There are an internal world and an external world in regard to man, admirably adapted to each other. The eye, in its normal state, possesses precisely that degree of power and intensity of function, which makes every visible object appear to the best advantage. It enables us to see that which contributes to our welfare, and unfits us for seeing much that

years later. "The most extravagant departure," says Sir Charles, "from all the legitimate modes of reasoning, although still under the colour of anatomical investigation, is the system of Dr Gall. It is sufficient to say, that, without comprehending the grand divisions of the nervous system, without a notion of the distinct properties of the individual nerves, or having made any distinction of the columns of the spinal marrow, without even having ascertained the difference of cerebrum and cerebellum, Gall proceeded to describe the brain as composed of many particular and independent organs, and to assign to each the residence of some special faculty."

would disgust or annoy us. When we increase the intensity of vision by the help of a powerful microscope, the cheek of beauty becomes coarse, and the water of the crystal stream is filled with impurities and life. And the same remark applies to the ear and the organs of our other senses. The sound which, to the ear in its normal condition, is soft, clear, and pleasing, appears loud, indistinct, and grating, when the intensity of the function is increased by inflammatory disease. The converse of these propositions also holds true. When the eyes become abnormally feeble, we cease to distinguish the finer qualities of external objects; and when the ear decays, we become insensible to the more delicate modulations of sound.

The same exquisite adjustment is found between our internal faculties and the external world. The man whose brain is characterized by an exalted temperament and large size, perceives and feels many qualities of external objects, to which an individual of a dull, lymphatic, and deficient brain, is insensible. But as the brain consists of a congeries of organs, if we suppose the temperament to be the same in different persons, the range as well as the intensity of any class of feelings and perceptions will depend on the degree in which the particular organs related to that class are developed in the brain of the individual. Thus, if the temperament be highly nervous and sanguine, and Ideality be large, all nature will reflect beauty to the mind. If in another individual possessing the same temperament, this organ be small, he will be blind to the exquisite visions of loveliness which captivate the soul of his more gifted neighbour. Similar observations apply to all the organs and faculties.

From this simple statement, we can easily understand how some men are born with the faculties which impel them to become artists, while thousands of others possess no talents adapted to this vocation. In the case of the artist, however, there must be something more than mere sensibility to external impressions; he needs also the powers of combination and reproduction. Constructiveness, Form, Size, Colouring, Locality, and Imitation, are the rudimentary powers of art. Without a sufficient development of the organs of these, the artist will be deficient in some important element of talent; he will be feeble in drawing, defective in perspective, unsuccessful in colouring, or poor in expression. Even these, however, are only the *instrumental* organs. The propensities and sentiments supply the deep fountains of passion and emotion, from which the subjects of sculpture and painting must be drawn. The power of combination, or composition, as it is technically called—the talent of adapting the positions, atti-

tudes, forms, colouring, and expression of the objects represented to the grand design of the picture—depends on the higher intellectual faculties, namely, those of Individuality, Eventuality, Comparison, and Causality.

To form a great artist, therefore, the first requisite is a fine constitution of brain, and an active temperament; the second is a sufficient development of the organs of all the propensities and sentiments, to confer upon him a sympathy with, and a keen experience of, all human passions and emotions; the third is an adequate endowment of the artistical organs; the fourth, an ample endowment of the organs of the higher intellectual faculties; the fifth, an adequate knowledge of every branch of science which reveals the structure, qualities, and expression of the objects which he aims at representing;—to all of which must be added a thorough acquaintance with the practice of his art.

It will at once occur to the reader, that this statement is tantamount to saying that, to constitute a first-rate artist, we must have a perfect man; and that no such being exists. Both positions are granted: but the object in enumerating these requisites, is to enable us to understand clearly that the genius of an artist is not composed of one element, but of many; that he is capable of feeling, perceiving, and representing different classes of objects with a degree of success corresponding to his special endowment of these elements; and that before we can scientifically comprehend and judge of his work, we need to understand himself, as well as to know the circumstances in which his elementary qualities were developed.

In volume ii., p. 329, of this Journal, the late Mr William Scott published an elaborate and able essay on the genius and cerebral organs of Raphael, estimating the latter from a cast of a skull preserved for centuries in the Academy of St Luke at Rome, and generally represented to be that of Raphael. Subsequently, however, the tomb of Raphael in the Pantheon at Rome was opened, and the skeleton, including the skull, was found inclosed in the coffin, demonstrating the spurious character of that preserved in St Luke's. (See *Phren. Journ.*, vol. ix., p. 92.) The opponents of Phrenology conceived that this discovery necessarily implied a refutation of the whole science, and published many exulting strains of victory. The answer to their objections was easily given. The skull in question had been reputed, for two centuries, to be that of Raphael; a cast of it was transmitted to Dr Gall as such, and he described the development of organs which it indicated. Subsequently, Mr William Scott, assuming the authenticity of the skull, gave a more minute measurement and description of it, and compared it with the genius and dispositions of Raphael. His estimate of

the organs agreed with that of Dr Gall; and there was so close a coincidence between the talents and dispositions indicated by the skull and those manifested by Raphael, that not only was no doubt of its authenticity excited, but Mr Scott founded on this coincidence as a strong evidence in favour of the truth of Phrenology. When, however, the spurious character of the skull was discovered, this evidence necessarily fell to the ground, and, in point of fact, it was at once given up. But the skull, with its forms and proportions, remained, indicating specific dispositions and talents, precisely as it had done before. The only change that occurred was, that the person was unknown to whom it had belonged. The opponents fancied that the phrenologists had taught that *mere development* of brain confers genius, and that the owner of such a skull must necessarily have been a great artist; but this was an error. We had unceasingly taught that a high temperament is indispensable to the higher order of mental manifestations. The temperament of Raphael was known from his portraits; but that of the owner of this skull was unknown. The skull was unquestionably largely developed in the organs which bear reference to art; and it was trite doctrine, that, with an inferior temperament, this would produce the amateur, and with a high temperament the artist. Difference of temperament, therefore, was of itself sufficient to account for this being the skull of a mere dilettante or amateur of the fine arts. The opponents did not attempt to shew that the owner of the skull, although in full health, *did not* manifest in this lower degree the qualities indicated by the development. If they had done so, they would have converted the case into a direct proof against Phrenology; but, in the position in which they left it, they could legitimately boast only of having deprived Phrenology of the evidence which it was supposed to afford in its favour; a point which the phrenologist voluntarily conceded.

Subsequent researches, however, have done justice both to Phrenology and to this skull. They have established, first, that the real skull of Raphael bears an extraordinary resemblance to this one in the great majority of its parts, and that, where the two differ, the genuine skull corresponds more completely than the reputed one with Raphael's real character, which in one point at least, that of Amativeness, had been previously misrepresented; and, secondly, that the reputed skull had belonged to an individual who, though not an artist, had been the founder of a society for the cultivation of art—a fact clearly indicating his character as an amateur. It was discovered that this was the skull of Don Desiderio Adjutorio, who founded the Society of the Virtuosi of the Pantheon, in 1542. (*Phren.*

Journ., viii., 567 ; ix., 92.) Having now examined a cast of the real skull of Raphael, I shall proceed to describe it. The circumstances which led to its discovery were the following.

Raphael was born in Urbino in 1483, and died in Rome on 6th April 1520. He was buried in the Pantheon (Santa Maria della Rotonda), under the altar of the Virgin. Doubts having been raised respecting his place of sepulture, the Pope gave authority for opening the tomb described by his biographer Vasari ; and on the 14th September 1833, the body was found, and proved to be his by indubitable evidence. It had been inclosed in a wooden coffin, and this placed in another wooden coffin, both thickly painted ; a stone vault had been built over it ; but a small aperture had been accidentally left in one of the walls, through which, when the Pantheon was flooded by the Tiber (an event that has repeatedly occurred), the water penetrated into the vault, and supplied mud and moisture, which caused the coffins to rot, and the flesh to decay. Four views of the vault, coffins, and remaining bones, were drawn by Cammuccini, representing the whole exactly as they were found. The public authorities ordered two casts to be taken of the skull, of the bones of the hand, and of such other bones as were entire. One duplicate of these is placed in the official custody of the Chevalier Fabris, President of the Roman Academy ; and, on 7th January 1844, he allowed me, in his own presence, and that of the Chevalier Barberi, by whom I was introduced to him, to examine and measure the cast of the skull. From them and other authentic sources I learned the following particulars. The skull rested on the mud ; and the parts corresponding to the organs of Philoprogenitiveness, Inhabitiveness, and Adhesiveness, on the left side, and of Concentrativeness, having been immersed in it, were softened and destroyed. An irregular hole exists in the cast of the skull at this part ; but the clay, which penetrated the vault in a fluid state, had dried and become hard, and bore the exact impression of the part of the skull which it had destroyed. This clay has been lifted entire, and preserved, and, when placed beside the skull, gives the exact outline of the part which has perished, only in the concave instead of the convex form. All the other portions of the skull were entire. The teeth appeared young and complete ; and the skull, judging from a fragment of it found in the clay shewn to me, must have been fine and thin. A cast of the skull was made in wax, and one in plaster of Paris. The latter was the subject of my examination.

Raphael painted his own portrait more than once, and in the Gallery of Florence I examined the one which is regarded as the best. It is well known by engravings. The face is oval,

the features are regular, the expression is mild and intellectual, and beautifully harmonious. The form of the forehead, the only part exposed, corresponds exactly with that of the skull. The temperament indicated by the portrait is nervous and bilious, with a slight degree of the lymphatic, giving roundness to the features. The skeleton measured five feet seven inches, and the coffin was unusually narrow, indicating a slender frame.

The first look of the skull conveys the impression that it is smaller than the average of British male skulls. Its form is a beautiful graceful oval; and its surface was remarkably smooth and equal. My first observation was—"How like it is to a female skull of the highest class!" Chevalier Fabris observed—"That remark is striking, for Raphael is described by his contemporaries as having possessed much of the delicacy and grace of the female character;" and he called my attention, at the same time, to a cast of the bones of the hand found in the coffin;—they were long, slender, and beautifully graceful. On examining the skull more minutely, the left side was found to be a little larger than the right, the difference extending nearly throughout all its parts. A farther scrutiny shewed that the development is in an uncommon degree equable and harmonious, bespeaking corresponding equability in the development of the different parts of the brain. The only organs that present depressions are those of Self-Esteem, Hope, and the unascertained organ lying at the back part of Ideality, which I have ventured, on the faith of several instances, to suggest as probably that of the sentiment of the Sublime. There is a slight depression in the middle horizontal region of the forehead, along Eventuality and Time, the upper and under regions being most largely developed; the upper, however, predominating. At the point where the margins of Constructiveness, Tune, Wit, Acquisitiveness, and Ideality meet, there is a large development, corresponding to the locality assigned by Dr Vimont to the sentiment of the beautiful in art. The opening of the ear stands far back in the head, and it is lower than the lower margin of the bones of the nose.

On proceeding to examine the different regions of the head, I found the centres of ossification of the parietal bones (Cautiousness) and of the frontal bone (Causality) to be so distinctly marked, that there was no difficulty in determining their positions, and estimating the size of the coronal region above them. Its high, broad, and arched development is very conspicuous. The anterior lobe, measuring from the posterior margin of the superorbital plate (see *System of Phrenology*, vol. i., p. 140, fifth edition) forward to the superciliary ridge, is long, and it is also broad and high, but not so much above

the common proportions to the other parts as is the coronal region. The region of the propensities is well developed, but decidedly subordinate to the moral and intellectual regions. The cerebellum is rather large, but it does not in any degree predominate.

The details of the development are as follows. The measurements were taken with callipers applied to an English foot-rule.

	Inches.
From Individuality to a point immediately below the occipital spine, the spine itself having been destroyed by the mud,	6½
... Comparison to the point nearest Concentrativeness, the skull over that organ itself having been also destroyed,	6½
... the meatus auditorius to Firmness,	5½
... .. to Individuality,	4½
... a point corresponding to the posterior margin of the super-orbital plate to Individuality,	3½
... Do. do. to Comparison,	3½
... Constructiveness to Constructiveness,	4½
... Ideality to Ideality,	4½
... Destructiveness to Destructiveness,	5½
... Secretiveness to Secretiveness,	5½
... Cautiousness to Cautiousness,	5½
Amativeness, .....rather large.	Wonder, .....rather large.
Philoprogenitiveness, judging from the impression in the clay, large.	Ideality :—
Concentrativeness, do. do.....large.	Back part of do. (sentiment of the Sublime ?),moderate.
Inhabitiveness, do. do.....large.	Front part of do. (sentiment of the Beautiful ?),large.
Adhesiveness, judging from the right side of the cast, .....large.	Wit, .....full.
Combativeness, .....large.	Imitation, .....large.
Destructiveness, .....rather large.	Individuality, .....large.
Alimentiveness, .....rather large.	Form, .....large.
Constructiveness, .....full.	Size, .....large.
Acquisitiveness, .....rather large.	Weight, .....large.
Secretiveness, .....large.	Colouring, .....rather large.
Self-Esteem, .....moderate.	Locality, .....large.
Love of Approbation, very large.	Number, .....moderate.
Cautiousness, .....large.	Order, .....full.
Benevolence, .....large.	Eventuality, .....full.
Veneration, .....rather large.	Time, .....full.
Firmness, .....large.	Tune, .....large.
Conscientiousness, ....very large.	Language, .....uncertain.
Hope, .....moderate.	Comparison, .....large.
	Causality, .....very large.

We have here the elements of a first-rate character in almost every department. The temperament is active, and the organs of the propensities, sentiments, and intellect are so amply developed, with a decided predominance of those of the moral and intellectual powers, that the fountain of every desire and emotion, and of every perception and reflection, that could give elevation, copiousness, and vigour to the mental manifestations, is present. The admirable harmony of the development leaves no important source of feeling or of thought so feeble as to introduce weakness, and none so energetic as to give excess of manifestation in any one direction. Taste is the result of a harmonious combination of all the organs, with a fine temperament,* and on contemplating these endowments in Raphael, we see the source of his exquisite refinement and grace.

In man, every faculty, although capable of direction and modification by reason, possesses also an instinctive mode of action. It seeks to obtain its own gratification, and excites the other faculties to aid in its efforts. This spontaneous activity, attended by a certain degree of instinctive sagacity as to the *mode* best fitted to attain the desired end, is the fountain of mental resources. According to the combination of particular groups of organs, it gives to one man an instinctive capacity for acquiring wealth; to another a similar capacity for commanding armies; to a third a genius for poetry; to a fourth a genius for painting, and so forth. In virtue of this instinctive power, Raphael would, in his inmost soul, feel, comprehend, and respond to every external manifestation of passion, of love, of joy, of sorrow, of beauty, of grace, and of thought, that was presented to his mind; and he possessed, moreover, the special combination of faculties which enabled him to combine and to reproduce the expression of them all, endowing each with appropriate forms, attitudes, and colours.

There are only four organs so low as "moderate" in the head, and these are, Self-Esteem, Hope, the back portion of Ideality, inferred to be connected with the sublime, and Number. In reference to these, it is reported that he was distinguished for unpretending modesty of character, while there is in his history no trace of extravagance in expectation; he generally surpassed in performance what he held forth in promises. Of his powers of calculation we have no account; but critics are generally agreed that he is the painter of grace, truth, beauty, intellect, rather than of the sublime. The organ of the Sublime, however, is not fully established, and I merely mention this coincidence without attaching to it any

* System of Phrenology, vol. ii., p. 280, fifth edition.

great importance. The organ of Colouring is only rather large ; and although Raphael's attainments were considerable in this element of art, yet his colouring is not his highest excellence.

The organs which stand in the greatest contrast with these, are Love of Approbation, Benevolence, Conscientiousness, Ideality, and Casualty, all which are large. The extraordinary beauty and grace, the keen discernment and profound reflection which characterize his works, and are celebrated by all his biographers, sufficiently attest the vigour of Ideality and Casualty ; while the extreme amiability of his disposition accords with his very large Love of Approbation, Conscientiousness, and Benevolence, combined with moderate Self-Esteem. In my opinion, the predominating Conscientiousness was one of the most important elements in his character as a man, and in his genius as a painter. It gave him the instinct of *the true* in every thing, in contradistinction to the affected, the extravagant, and the false. It contributed essentially to that combination of grace, harmony, and simplicity, which gives to his figures the impress of genuine nature : Raphael's mothers are inspired by tender maternal affection, his saints by genuine piety, his philosophers by a pure love of truth ; and every figure looks as if unconscious of every emotion except those which belong honestly and directly to the action in which it is engaged. Even his immoral characters have a look of being naturally vicious. Not a particle of affectation is to be discovered either in good or bad ; there is no consciousness that spectators are looking on to be propitiated or captivated ; and no passion or emotion is seen running into extravagance or excess. Truth and simplicity preside over all. There are marked differences between his styles at different periods of his career, which I shall notice in a subsequent Number of this Journal ; but at present I refer to his great and finished works.

In several respects there are differences between the reputed skull preserved in St Luke's Academy and the real skull of Raphael ; and the first is in the region of the cerebellum. The organ of Amativeness is decidedly larger in the former than in the latter. Reports were long in circulation which seemed to indicate that Raphael was, to a considerable extent, the slave of that propensity, correspondingly with a very large cerebellum ; but these representations are now acknowledged to have been unfounded, and it appears that his true character corresponded with the development shewn by the real skull. In it the cerebellum is " rather large," a degree of size sufficient to give him a lively interest in woman, and to account for his attachment to the Fornarina, in an age when such connexions were not considered as disreputable ; but not sufficient to have rendered him the slave of the sexual

passion, as was falsely reported of him. The purity of form and expression with which he invests his female characters, proves that he saw in woman, not the object of a gross animal passion, but the personification of attachment, truth, gentleness, intelligence, and grace.

Another point of difference between the two skulls regards their size; the reputed skull is considerably larger than the real one. To me the real skull appears to be in harmony with the kind and degree of mental power manifested by its possessor. It is large in the anterior lobe and coronal region, and Raphael's strength lies in works emanating from these sources. He did not equal Michael Angelo and Rubens in embodying the fiery force of the propensities, and he, less frequently than they, portrayed even the moral emotions in a state of passionate excitement. To be capable of excelling in such representations, the artist must possess not only a vivid temperament, but great size of brain; because highly excited passion without corresponding *power* in the manifestation is ridiculous in nature, and altogether ineffective in art.* In a future article I shall notice the cerebral characteristics of Michael Angelo and Rubens, so far as they can be ascertained from their portraits, and contrast them with their works; and I hope then to shew that the special quality of great power which large size of brain communicates to their productions is not found in the same degree in Raphael.

Having now presented the record of Raphael's natural talents and dispositions, with such remarks as appeared necessary to elucidate its true import, I shall conclude this notice by citing some descriptions of his character as a man and an artist, from works held in general estimation for accuracy in statements of fact, and acumen in artistical judgments. The reader will be able to decide on the extent of the agreement between the natural record and the published descriptions, without being led to the suspicion that the latter have been coloured, with the view of adapting them to the skull. Far from wishing to consign Mr Scott's article to the shade in consequence of the error about the skull, I beg to remark, that a comparison of the two crania will shew an extraordinary general coincidence in their forms; and that, with few exceptions, Mr Scott's criticisms on Raphael's talents, dispositions, and works, will be found to be not only correct and eloquent, but strictly applicable to the real skull.

The following description of Raphael and his genius is given by Mrs Jameson in her *Memoirs of the Early Italian Painters*, published in 1845. "Raphael Sanzio or Santi was born in the city of Urbino, on Good Friday, in the year 1483. His father,

* See this subject discussed in vol. xvii., p. 234.

Giovanni Santi, was a painter of no mean talent, who held a respectable rank in his native city, and was much esteemed by the Dukes Frederigo and Guidobaldo of Urbino, both of whom played a very important part in the history of Italy between 1474 and 1494. The name of Raphael's mother was Magia, and the house in which he was born is still standing, and regarded by the citizens of Urbino with just veneration. He was only eight years old when he lost his mother; but his father's second wife, Bernardina, well supplied her place, and loved him and tended him as if he had been her own son. His father was his first instructor, and very soon the young pupil was not only able to assist him in his works, but shewed such extraordinary talent that Giovanni deemed it right to give him the advantage of better teaching than his own. Perugino was the most celebrated master of that time, and Giovanni travelled to Perugia to make arrangements for placing Raphael under his care; but before these arrangements were completed this good father died, in August 1494. His wishes were, however, carried into execution by his widow and by his wife's brother, Simone Ciarla, and Raphael was sent to study under Perugino, in 1495, being then twelve years old.

"He remained in this school till he was nearly twenty, and was chiefly employed in assisting his master. A few pictures painted between his sixteenth and twentieth year have been authenticated by careful research, and are very interesting, from being essentially characteristic."

"We have spoken at length of two among the great men who influenced the progress of art in the beginning of the sixteenth century—Lionardo da Vinci and Michael Angelo. The third and greatest name was that of Raphael.

"In speaking of this wonderful man we shall be more diffuse and enter more into detail than usual. How can we treat in a small compass of him whose fame has filled the universe? In the history of Italian art he stands alone, like Shakespear in the history of our literature; and he takes the same kind of rank, a superiority not merely of degree, but of quality. Everybody has heard of Raphael, every one has attached some associations of excellence and beauty, more or less defined, to that familiar name: but it is necessary to have studied profoundly the history of art, and to have an intimate acquaintance with the productions of contemporary and succeeding artists, to form any just idea of the wide and lasting influence exercised by this harmonious and powerful genius. His works have been an inexhaustible storehouse of ideas to painters and to poets. Everywhere in art we find his traces. Everywhere we recognise his forms and lines, borrowed or stolen, reproduced, varied, imitated—never improved. Some critic once said,

‘Shew me any sentiment or feeling in any poet, ancient or modern, and I will shew the same thing either as well or better expressed in Shakespear;’ in the same manner one might say, ‘Shew me in any painter, ancient or modern, any especial beauty of form, expression, or sentiment, and in some picture, drawing, or print after Raphael, I will shew you the same thing as well or better done, and *that* accomplished which others have only sought or attempted.’ To complete our idea of this rare union of greatness and versatility as an artist with all that could grace and dignify the man, we must add such personal qualities as very seldom meet in the same individual—a bright, generous, genial, gentle spirit; the most attractive manners, the most winning modesty—

‘His heavenly face the mirror of his mind;
His mind a temple for all lovely things
To flock to, and inhabit;’—

and we shall have a picture in our fancy more resembling that of an antique divinity, a young Apollo, than a real human being. There was a vulgar idea at one time prevalent that Raphael was a man of vicious and dissipated habits, and even died a victim to his excesses. This slander has been silenced for ever by indisputable evidence to the contrary; and now we may reflect with pleasure that nothing rests on surer evidence than the admirable qualities of Raphael; that no earthly renown was ever so unsullied by reproach, so justified by merit, so confirmed by concurrent opinion, so established by time. The short life of Raphael was one of incessant and persevering study: he spent one-half of it in acquiring that practical knowledge and that mechanical dexterity of hand, which were necessary before he could embody in forms and colours the rich creations of his wonderful mind; and when he died, at the age of thirty-seven, he left behind him two hundred and eighty-seven pictures, and five hundred and seventy-six drawings and studies. If we reflect for one moment, we must be convinced that such a man *could* not have been idle and dissipated: for we must always take into consideration that an excelling painter must not be only a poet in mind, but a ready and perfect artificer; and that, though nature may bestow the ‘genius and the faculty divine,’ only time, practice, assiduous industry, can give the exact and cunning hand. ‘An author,’ as Richardson observes, ‘must *think*, but it is no matter what character he writes; he has no care about that, if what he writes be legible. A curious mechanic’s hand must be exquisite; but his thoughts may be at liberty.’ The painter must think and invent with his fancy, and what his fancy invents, his hand must acquire the power to execute, or vain is his power of creative thought. It has been observed

—though Raphael was unhappily an exception—that painters are generally long-lived and healthy, and that, of all the professors of science and art, they are the least liable to alienation of mind or morbid effects of the brain. One reason may be, that through the union of the opposite faculties of the excursive fancy and mechanic skill—head and hand balancing each other—a sort of harmony in their alternate or co-efficient exercise is preserved habitually, which reacts on the whole moral and physical being. As Raphael carried to the highest perfection the union of those faculties of head and hand which constitute the complete artist, so this harmony pervaded his whole being, and nothing deformed or discordant could enter there. In all the portraits which exist of him, from infancy to manhood, there is a divine sweetness and repose; the little cherub face of three years old is not more serene and angelic than the same features at thirty. The child whom father and mother, guardian and stepmother, caressed and idolised in his loving innocence, was the same being whom we see in the prime of manhood subduing and reigning over all hearts, so that, to borrow the words of a contemporary, ‘not only all men, but the very brutes loved him:’ the only very distinguished man of whom we read who lived and died without an enemy or a detractor.”

In regard to Raphael’s alleged subjection to Amativeness, the author of a criticism on Passavant’s life of him in the *Quarterly Review* (vol. lxi, p. 40), makes the following interesting remarks:—“Raphael was even invited to make designs from the descriptions of Greek paintings; and, lastly, in order thoroughly to understand the architecture of the ancients, he employed the venerable and learned Fabius of Ravenna to translate Vitruvius into Italian for him. An interesting letter, which Passavant inserts, from Calcagnini to Ziegler, alludes to Raphael’s benevolent care of this old man; and is besides so strong a certificate of the great artist’s moral virtues, written as it was soon before his death, that it may be reckoned among the proofs—should proofs be wanting—to contradict the idle story of Vasari, respecting the painter’s inordinate attachment to the Fornarina, the alleged cause of his death. Passavant treats the assertion (first published in 1549, by Simone Fornari, and copied from him by Vasari) as it deserves. Earlier biographers make not the slightest allusion to it; and every other circumstance—above all, the unsubdued, or rather increased energy of the painter’s mind up to the very end of his career—abundantly contradicts the absurd calumny.”

Mr Haydon, in his description of Raphael in the *Encyclopædia Britannica*, (vol. xvi. p. 714, last edition), says: “The glory of Italian art is Raphael. Had he been born in Greece, and qualified by a Greek education, he would have been as great in painting as Phidias was in sculpture; but the educa-

tion of all the Italian artists was imperfect, and they seemed to be grounding themselves (even Raphael himself) on the meagre style of the early painters. The discovery of ancient statues in some degree opened their eyes; but they were not, like the ancients, gradually prepared for such perfection, nor was Raphael himself even skilled in those perfect principles of beauty, as applied to the naked figure, which distinguished the Greeks. Wonderful, amiable, and gentle creature as he was, the reverse of Michael Angelo in every way, who proved himself decidedly the inferior man. In all his endless inventions, a single repetition of himself, even in the folds of a drapery, is not to be found; he was not like Titian, an exquisite colourist, but his colour is always agreeable, though not distinguished for light and shade; and his groups are never obtrusive, though not remarkable for aerial perspective. Every object keeps its place; though no face of his can compete with the beauty of the ancients, his women always enchant; his great power was character and expression, and telling a story by human passions and actions; in these he was unrivalled in modern art, and not surpassed by the ancients."

Thirty years after the death of Raphael, Vasari published a biography of him, which, although not very accurate in its historical details, contains many interesting facts regarding the illustrious painter. The following abridgement of his description of Raphael's character and genius will form a fit termination to the present notice. It is quoted from the *Quarterly Review*, vol. lxvi., p. 46:—

"His death was deeply deplored by the whole court, the more so as the Pope himself, who was much attached to him, wept bitterly. For us who survive him, it remains to imitate the good, nay excellent, method he has taught us, and as his great qualities deserve, and our duty bids us, to cherish his memory in our hearts, and speak of him with the high respect which is due. For, in fact, through him we have the art in all its extent, colouring and invention, carried to a perfection which could hardly have been hoped, and in this universality let no human being ever dream of surpassing him. Among his extraordinary gifts there was one which especially excites my wonder; I mean that it should have been granted him to infuse a spirit among those who lived around him, so contrary to that which is generally prevalent among professional men. The painters—I do not allude to the humble-minded only, but to those of an ambitious turn, and very many of this sort there are—the painters who worked in company with Raphael lived in perfect harmony, as if all bad feelings were extinguished in his presence, and every base, unworthy thought had passed from their minds. This friendly state of things was never so remarkable as in Raphael's time; it was because

the artists were at once subdued by his obliging manners and by his surpassing merit, but more than all by the spell of his natural character, which was so benevolent, so full of affectionate kindness, that not only men but even the very brutes respected him. It is said that if any painter of his acquaintance, or even any stranger, asked him for a drawing which could be of use to him, Raphael would leave his work to assist him. He always had a great number of artists employed for him, helping them and teaching them with the kindness of a father to his children, rather than as a master directing his scholars; for which reason, it was observed, he never went to court without being accompanied from his very door by perhaps fifty painters, all clever in their way, who had a pleasure in thus attending him to do him honour. Happy those who were employed under him, for it appears that whoever endeavoured to follow his example turned out well: in like manner, those who hereafter shall take his works as models will be honoured accordingly in this life, and if they resemble him in the excellence of his character, may hope to win the favour of Heaven in another."

In a subsequent number of this Journal, I shall enter into a special criticism of several of Raphael's works, and endeavour to point out the sources of their interest to the phrenologist.

II. *Further Contributions to the Statistics and Pathology of Mental Diseases.* By JOHN WEBSTER, M.D., F.R.S., Consulting Physician to St George's and St James Dispensary. (Read before the Medico-Chirurgical Society, 24th June, 1845, and published in vol. xxviii. of their Transactions.)

In the 26th volume of their Transactions, the Society did me the honour to publish a paper, entitled "Statistics of Bethlem Hospital, with remarks on Insanity," containing several tables compiled from the Hospital Registers, along with a synopsis of seventy-two dissections of lunatic patients, performed by Mr Lawrence, the surgeon of that establishment.* In this communication, I propose to notice one or two points omitted in my former paper, as well as to give an account of 36 additional autopsies since made at the same institution.

The first point to which I would advert, is the influence of particular seasons of the year upon mental affections, as illustrated by the following table, indicating the total number of curable insane patients admitted into Bethlem Hospital, discharged cured, and died, during the last twenty-two

* [See Phrenological Journal, xvii. 204.]

years, ending the 31st December 1844, arranged according to the quarters.

Table of Admissions, &c., during 22 Years.

Season of the year.	Admitted.			Discharged cured.			Died.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1st Quar.—Jan., } Feb., March, }	451	649	1100	139	257	396	39	35	74
2d Quar.—April, } May, June, }	545	842	1387	215	375	590	21	34	55
3d Quar.—July, } Aug., Sept., }	551	798	1349	265	410	675	32	30	62
4th Quar.—Oct., } Nov., Dec., }	471	668	1139	333	561	894	32	32	64
Totals,	2018	2957	4975	952	1603	2555	124	131	255

According to the above statement, a much larger number of insane patients were received during the second and third quarters, than at any other period of the year; that is, when the temperature of the weather increased, so did mental diseases become more frequent. For example, during the second and third quarters of the period referred to, the total curable lunatics admitted into Bethlem Hospital amounted to 2736; whereas, during the first and fourth quarters, that is, in the cold season, the actual number was only 2239; being a diminution of 497 patients, or 22 per cent. less upon the whole admissions. In regard to particular months, it may be mentioned that the greatest number of curable lunatics admitted took place during May,—the fewest in January.

Respecting the curability of insanity, it also appears from the above table that fewer insane patients were discharged cured during the early part of the year, than in the autumnal months, or towards the approach of winter. For instance, in the first and second quarters, the number of cures were under the average proportion, only 986 lunatics having been discharged convalescent during that period; whereas, during the last two quarters, 1569 patients left the insti-

tution free from mental disease, thus making 583 more recoveries, or an increase of 57 per cent. on the total number of cures reported during the latter than in the first six months of the twenty-two years comprehended in the previous table.

With reference to the mortality of mental diseases, the same document shews that not only the relative proportion of deaths to the total admissions was larger, during the first than in any subsequent quarter, but the actual number of cases terminating fatally during the former period, exceeded the ratio of any other three months of the same series, whilst the fewest deaths occurred during the months of April, May, and June; when, as already stated, more insane patients were admitted into Bethlem Hospital than at any other season:

Supported by these data, the physician may rationally conclude, that as the temperature of the weather diminishes, and the year draws to a close, so may he give a more favourable opinion respecting the progress of cases of insanity. At the same time, seeing mental affections are in a greater degree prevalent during summer than in winter, every exciting cause, whether physical or moral, ought to be then carefully guarded against, particularly in persons who have been previously afflicted with mental alienation.

As an illustration of the improved system at present followed in all well-regulated lunatic asylums, of affording occupation and amusement to the inmates, it may be mentioned that of 422 insane patients under treatment in Bethlem Hospital, during the present or third week of this current month of June, 288 were engaged in some kind of employment; thus making upwards of 68 per cent. who were beneficially occupied, instead of passing their life, as formerly, in listless inactivity.

In connection with this subject, it may be stated, that the more such measures are promoted, the less need, in all probability, will there be for employing personal coercion; and in confirmation of this opinion, I refer to the following table, shewing the average weekly number of patients under restraint during the last five years, premising that the system of employing the lunatic inmates of Bethlem Hospital has been more fully developed in each succeeding year.

Return of Patients under Restraint.

Year.	Average Weekly No. of Patients under Restraint.				
1840	13½
1841	9
1842	3
1843	3
1844	1½

Considering the number of violent, dangerous, and suicidal patients annually admitted, the facts now stated demonstrate, in a very decided manner, the advantages of the new system, and fully confirm the opinions entertained by those who advocate the non-restraint mode of treating the insane.

Desirous of contributing some facts towards elucidating the pathology of mental diseases, I now beg to bring before the Society the subjoined report of thirty-six dissections of insane patients, recently performed at Bethlem Hospital, thus making 108 autopsies, including the seventy-two contained in my previous paper, which I hope will be thought worthy of perusal by the Fellows, and those members of the profession who take an interest in similar investigations. [Here follows a "Synopsis of Dissections," occupying 18 pages of the Transactions, to which we refer.]

According to the above statement, some diseased alterations of structure, more or less evident, in the brain and membranes, were observed in all the thirty-six dissections now detailed; of which the following summary may be given: In thirty-three cases the pia mater was infiltrated. In thirty, there was turgidity of the bloodvessels of the brain and its membranes. In twenty-six, effusion of water had taken place in the ventricles. In sixteen, there was thickening and opacity of the arachnoid coat. In twelve, fluid was met with at the base of the brain. In nine, the consistence of the brain was altered from its normal condition. In eight, patches, or bloody points, appeared on the cut medullary surfaces. In five, the colour of the medullary, or cortical substance, was altered from its healthy hue to a pink, mottled, or rosy tint; and in four cases, blood was effused in the brain, besides other morbid changes of structure of a less important character; for an account of which I would refer to the synopsis, to avoid superfluous repetition. The same may be said in regard to the cases exhibiting diseased alterations of structure in the organs of the chest; of which description there were thirty examples; being five-sixths of the dissections contained in the present series; whilst only twelve patients, or one-third, shewed any morbid appearances in the abdominal viscera.

I subjoin a short abridgement of the pathological changes met with in the brain and membranes of the one hundred and eight autopsies reported in the present and previous communication to the Society. I may remark that infiltration of the pia mater was observed in ninety-two cases. Turgidity of the bloodvessels existed in eighty-nine; fluid was effused in the ventricles in sixty-seven; effusion had taken place at

the base of the brain in thirty-nine. There was thickening and opacity of the arachnoid coat in thirty-two. Bloody points were observed on the cut surfaces of the medullary substance in twenty-seven. The colour of the brain appeared changed in nineteen; and in seventeen cases, blood was effused within the cranium. These data indicate unequivocally that the morbid alterations of structure, characteristic of insanity, which pathologists may expect to find in a majority of cases, will be, infiltration of the pia mater, turgidity of the bloodvessels, and effusion of fluid in the ventricles.

Unwilling to occupy the attention of the Society with further remarks, I would, in conclusion, observe, that although the mental maladies of insane patients demand special attention, their bodily complaints frequently become of such importance as to endanger life; when they must be treated according to general principles. On the other hand, the physician, however conversant with the pathology and treatment of physical diseases, ought also to study the nature and management of maladies of the mind, in order to be prepared for any contingency which may occur in the practice of his profession.

III. Case of Intermittent Mental Disorder of the Tertian Type, with double Consciousness. By DAVID SKAE, M.D., Fellow of the Royal College of Surgeons, &c. (From the Northern Journal of Medicine, No. xiv., June 1845).

The following case is interesting, as affording an illustration of an extremely rare form of mental disorder, that in which it assumes a periodic or intermittent character. I am acquainted with only one case of a similar character, which was mentioned to me by the late Dr Abercrombie; the particular features of the case I have not been able to learn, but they are probably known to several members of the profession in Edinburgh, as the individual affected himself occupied a prominent position in the medical profession. This much I have learned regarding his case, that he was affected periodically,—I believe, on every alternate day,—or at least the regularity of the remission or intermission was such, that his family were able to anticipate, by calculation, the days on which he would be well, and those on which he would be ill, and to arrange their social and domestic engagements accordingly. On the intermediate days, he was perfectly qualified for the discharge of his several duties; on the other days, he was totally disqualified for social intercourse or the ordinary business of life.

The subject of the following remarks exactly resembles the

individual referred to in the particulars enumerated. He is an unmarried gentleman, in the prime of life, connected with the legal profession, of a leuco-phlegmatic temperament, regular in his habits, which have always been retired, and extremely temperate in his mode of life. His complaint commenced with the usual symptoms of dyspepsia—it then gradually passed into hypochondriacism—and ultimately into its present form, a state bordering between hypochondriasis and mental alienation.

The dyspeptic symptoms became a subject of complaint and solicitude to the patient about ten or twelve years ago. They appeared to have had their origin partly in habits of over-walking before dinner, so as to produce considerable exhaustion, and partly in habits of sitting up to a late hour engaged in reading or in business. The symptoms gradually increased in severity and obstinacy, it being found quite impossible to induce the patient to break through the habits which he had acquired, or to alter in the least the quantity or quality of the diet to which he had been accustomed from his earliest youth.

To the usual dyspeptic symptoms there gradually succeeded a train of morbid feelings, and ultimately of illusions founded upon them. The distress occasioned by flatulent distention of the stomach, and the painful feelings in different parts of the body, which are its usual concomitants, led the patient to consult many medical men, and use large quantities of medicine, which, as he still persisted in the habits in which his complaints originated, and the diet by which they were excited, rather aggravated than abated the evil. The fugitive pains and uneasy feelings experienced in different parts of the body were spoken of as sufferings of a mysterious and unparalleled kind; they were at one time believed to be wind circulating through the veins, and at another, the whole system was imagined to be charged with water. While under the influence of these impressions, the patient, day after day, would sit for many hours in the water-closet, believing that the water was constantly discharging itself; and at another time, he continued spitting incessantly for many weeks, under the impression that his whole frame was becoming converted into saliva.

Feelings of gloom and despondency were at the same time developed:—the most trifling errors of the past were magnified into crimes of unpardonable magnitude, and the future was contemplated with the utmost dread. He commenced a system of reading the Scriptures, psalms, and paraphrases, with great zeal and rapidity; this soon grew into a system of rapidly scanning the pages, and incessantly turning over the leaves, and he persuaded himself that he read the whole Bible

through, and all the metrical psalms, once or twice daily. He now sat up the greater part of every night, and lay in bed during the day; and when he went to bed, he carefully surrounded his person, from head to foot, with Bibles and Psalm-books.

Under the influence of the bodily distress and mental despondency from which he suffered, he not unfrequently spoke of drowning himself, or of throwing himself over a window, and on several occasions begged earnestly that he might have his razors. A natural timidity of disposition, and a prevailing conscientiousness, prevented this tendency from displaying itself with any seriousness or determination of purpose.

From an early period in the history of this case, it was observed that the symptoms displayed an aggravation every alternate day. This gradually became more and more marked; and for the last eighteen months the symptoms above described have become distinctly periodic. On each alternate day, the patient is affected in the manner just described, and will neither eat, sleep, nor walk, but continues incessantly turning the leaves of a Bible, and complaining piteously of his misery. On the intermediate days, he is, comparatively speaking, quite well, enters into the domestic duties of his family, eats heartily, walks out, transacts business, assures every one he is quite well, and appears to entertain no apprehension of a return of his complaints.

What is chiefly remarkable and interesting in the present features of the case, is the sort of double existence which the individual appears to have. On those days on which he is affected with his malady, he appears to have no remembrance whatever of the previous or of any former day on which he was comparatively well, nor of any of the engagements of those days;—he cannot tell whether he was out, nor what he did, nor whom he saw, nor any transaction in which he was occupied. Neither does he anticipate any amendment on the succeeding day, but contemplates the future with unmitigated despondency. On the intermediate days, on the other hand, he asserts he is quite well, denies that he has any complaints, or at least evades any reference to them; appears satisfied that he was as well the previous day as he then is, asserts that he was out, and that he has no particular complaints. On that day he transacts business, takes food and exercise, and appears in every respect rational and free from any illusions or despondency; anticipates no return of illness, and persists in making engagements for the next day for the transaction of business, although reminded and assured that he will be unfit for attending to them. On those days he distinctly remembers the transactions of previous days on which he was well,

but appears to have little or no recollection of the occurrences of the days on which he was ill. He appears, in short, to have a double consciousness—a sort of twofold existence—one half of which he spends in the rational enjoyment of life and discharge of its duties; and the other, in a state of hopeless hypochondriacism, amounting almost to complete mental aberration.

An endless variety of remedies have been used in the treatment of this case, and among others, those which are believed to be useful in periodic affections, but without marked benefit. The patient has obtained considerable advantage from change of scene and exercise in the open air. But the friends by whom he is surrounded, have not sufficient control over him to carry out those regulations as to diet, exercise, habits, and employment, which should form the most essential parts of the treatment; and circumstances have hitherto prevented his being placed under more efficient control.

IV. *Case of Double Consciousness.* By THOMAS MAYO, M.D., F.R.S., Physician to the Infirmary of St Marylebone. (From the Medical Gazette, Nov. 7. 1845.)

In the spring of 1831, my attention was called to a very singular nervous affection, of which I subjoin some memoranda. It was considered by me, and so named at the time, an unusual form of hysteria. I afterwards found that similar cases have been arranged by Dr Abercrombie under a specific title, that of "double consciousness." It also possesses common points with the remarkable states produced by the manipulations of the mesmerisers.

April 1831.—Elizabeth Moffat, resident at Tunbridge Wells, a healthy girl, aged about 18, having swallowed by mistake some Unguentum Lyttæ, a long train of symptoms of pain and irritation in the head, thoracic region, and bladder, ensued. These gradually subsided, but left an extreme susceptibility of pain in the head from either sound or contact, so that in either case she readily became insensible, particularly from pressure on the vertex. On this physical state the following mental phenomena supervened. She appeared to pass alternately, and in succession, through two different states of mental existence; or rather, I might say, her normal state was exchanged for an abnormal one, which I shall presently describe, out of which she would return, sometimes after it had lasted some weeks, into the normal one,—her passages from either state into the other occurring suddenly. The pheno-

mena of her abnormal state were those of extreme excitement, entirely dissimilar to her natural habit, which was dull and quiet. Under this state she made considerable progress in needle-work, and in many points of intellectual acquirements, far beyond the energy and ability of her normal condition. She became also lively and spirited in conversation. At the same time she lost her consciousness of her relation to her father and mother, and former associates, calling them by wrong names. She was, however, at no time incoherent. On the subsidence of her abnormal state, her recollection of her father, mother, and friends, in their just relation to her, would return, and she would resume her quiet and dull character; she would also resume her true position and respectful manners towards some ladies of Tunbridge Wells, from whom she was receiving kindness and instruction; meanwhile, in both her states, the normal and abnormal one, the associations which have taken place in each are obstinately retained without the smallest confusion, but in each with a total oblivion of what has been learnt in the other state. Thus, in her normal state, she will have entirely forgotten all those manual or intellectual acquirements which she may have made during that of excitement, and every attempt to instruct her in these points will utterly fail.*

From the scantiness of my notes, and an unwillingness to trust my memory, I am unable to supply adequate particulars of this case; for instance, I cannot answer the question, under what conditions, whether from pressure on the vertex, the transition from one state into the other seemed to occur? I can affirm, generally, that the case received no benefit from medical measures, that it gradually lost its mental peculiarities, and the normal state became permanent. But in the meanwhile circumstances of misconduct in the girl's relatives were discovered, which led to an impression among her patrons at Tunbridge Wells that the case was an imposture; and, fortunately perhaps for the patient, it was left to itself.

I have observed that a suspicion of simulation in the above case occasioned it to be dismissed with unbelief. It is probable that a more scrutinising eye ought to have been applied throughout the inquiry into it. But does the discovery of simulation in hysterical disease, to which the above case is analogous, involve a total rejection of every *other* symptom of that state? I say, of every *other* symptom, for simulation itself is a symptom of hysteria, though not an inseparable one. What is more common than to see young persons *become* deceitful, to the extent, *exempli gratiâ*, of pretending incapacity

* It does not appear that in either this or the preceding case the consciousness of *personal identity* was affected.—ED. P. J.

to take food, while they are covertly taking articles of *indigestible* food to a great quantity? The mental pathology of that state is fully as singular as its physical. I do not believe that Elizabeth Moffat *could* have simulated *all* the phenomena of *her* case; and when I find that case, singular as it is, forming one under an assigned medical head on the authority of an eminent pathologist, I more readily give some weight to my own convictions on this subject.

Much of the above reasoning has a bearing on that train of symptoms which I have adverted to as having common points with the above case; I mean, the trance produced by the manipulations of the mesmerisers. Is it philosophical to decline inquiry into these symptoms, *because* they may have occasionally been exaggerated, or even put on, when adequate evidence is afforded of their general reality by unbiassed and numerous observers? But if the question cannot be answered affirmatively, let me put another, with the same intention, which naturally springs out of it. It is wise in *us*, who desire to obtain for our tripartite profession exclusive privileges from the legislature, to prove that we are unworthy of these privileges, by refusing inquiry into practices which offer, on extensive authority, an antidote to pain and irritation in their direct forms? We allow our nurses to rock our infants to sleep. Are we to be told, that it is absurd and unjustifiable to produce a form of sleep during which pain is unfelt, and irritation allayed, by movements of the hands? Yet such a proposition I have heard maintained by an eminent and valued member of our profession in a wise and learned assembly.

I allude here to the ordinary phenomena of mesmerism—the trance, which the operators in these cases appear to have the power of producing and terminating at will. Unless we propose to establish a new theory of the value and effect of testimony on belief, or of the utility and desirableness of adding to our means of subduing pain and irritation, it is our *duty* to give a patient and candid inquiry into this subject, and to profit by it, if we may.

III. NOTICES OF BOOKS.

- I. *Contributions to the Mathematics of Phrenology; chiefly intended to aid Students. Illustrated with a Plate.* By JAMES STRATON, Secretary to the Phrenological Society, Aberdeen: W. Russel; MacLachlan & Co., Edinburgh; Simpkin, Marshall, & Co., London; and Wiley & Putnam, New York. 1845. 8vo, pp. 35.

We have frequently had occasion to speak highly of the practical qualities and general talent displayed by the
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Phrenological Society of Aberdeen, and have now the pleasure of directing the attention of our readers to a valuable contribution to Phrenology from their secretary. The motto of the work is, "*Cæteris paribus—size is a measure of power;*" and this is the fundamental principle of Phrenology, on which its entire superstructure rests. But a great difficulty has presented itself to different classes of minds in regard to the method of *ascertaining* the size and the power. Men trained in the school of physical science have demanded *exact measurements* of the size of each organ, and of the power of each faculty; and denied that, without these, Phrenology could ever become a science at all. Others, accustomed to observe *vital* organs and forces, have replied that, from their very nature, these do not admit of the application of the scale and the balance; that they cannot be isolated from the living system of which they form integral parts—and dealt with as if they were mineral squares or vegetable cones; that the size of the organs, and also the degree of power with which they act, must be *estimated* by the judgment of the observer, aided by his hand and his eye; and that Phrenology belongs to this category of sciences. We coincide in the views last expressed; but have willingly acknowledged that an *estimative* science, in point of certainty and precision, necessarily stands below an exact science, and have hailed with pleasure every attempt that promised to aid our judgment in *estimating* size and power, and to introduce more precision into our method of investigation. The work of Mr Straton is one of the most valuable contributions towards this object that have appeared.

The objects of the author are stated as follows:—

"I propose, in the subsequent pages,—*First*, to shew how the human head, or cranium, may be measured by very simple means, and with an approximation to mathematical accuracy, sufficient for practical purposes. *Second*, to graduate a scale, indicating the average size, the average range, and the extreme ranges of size which have been found among the various races of men.

"After measuring the head as a whole, and determining its place in the scale of size, I propose, in the *third* place, to measure that whole in separate parts; and, *fourthly*, to determine the relative size of those parts in equally balanced heads.

"The principal aim, in measuring separate parts, is to furnish the eye of the observer with a more definite range or standard whereby to estimate the more minute portions—the individual organs. I have, therefore, attempted instrumental measure to the *least* possible extent only, which would be use-

ful for that purpose. The principal object in view, throughout, is to remove perplexing uncertainties, in attaching a meaning to the language of the masters, and thereby to impart a proper degree of confidence to the student, and to the more advanced an uniformity in the estimating and recording of size and proportions, which I believe has hitherto been unnecessarily difficult to attain."

Mr Straton discards spherical measure as unsuitable to the purpose. But "the head or skull may be measured to any degree of accuracy, by marking the quantity of water which it displaces in a receiver of known dimensions. This mode is, of course, inapplicable, or inconvenient, in most cases, for the living head; but as it gives a standard proof wherewith to test the accuracy of every other mode, and can be easily applied to skulls and plaster casts, the following is given as a simple and convenient means of obtaining proofs.

"The receiver is constructed as nearly square as possible, 10 inches long, 10 inches broad, and 8 inches deep, inside. One of the sides is a plate of glass; all the other parts are of pine deal, well saturated with paint. On the plate of glass is fixed a perpendicular scale, divided into inches and tenths of an inch.

"The 0, or zero of the scale, is about five inches from the bottom of the receiver, inside, which is accurately filled with water up to the 0 point before the object be immersed.

"In taking measurements, the head or skull must be put into the water, with the top lowermost, till the surface of the water touches the articulation of the nasal and frontal bones, and enters the opening of both ears. From the given dimensions of the receiver, it will be obvious that each inch which the water rises on the scale corresponds to 100 cubic inches (*i. e.* 10×10), and each tenth to ten cubic inches. The use of a vernier would give single inches, or even tenths of an inch, with equal accuracy; but a practised eye will find the aid of the vernier unnecessary. It is by such means that all the proofs quoted in the following pages have been obtained."

He next mentions the different points and lines of the skull to and from which the measurements are taken; but here a great difficulty in describing the work overtakes us. It is written in so condensed a style, and hangs so closely together, that we are unable either to abridge it, or to convey its evidence and signification by means of partial extracts. We trust, therefore, that our readers will consult the pamphlet itself. Cubic measure is that which is adopted. "The human head," says Mr Straton, "or cranium, may be measured, as an irregular cube, with a degree of accuracy all but perfect. The average length, breadth, and height can be

deduced from a number of measurements—the more the better for precision ; but the fewest by which the requisite accuracy is attained is the best for practical utility.” He illustrates this method of measurement by a formula, which, he says, “ fulfils the essential conditions with sufficient accuracy, simplicity, and applicability to every variety of case ;” but without the aid of the plate of the head on which the lines, points, and figures are delineated, the formula cannot be rendered intelligible.

The next inquiry is into the “ average size of the head.” Mr Straton notices the extraordinary discrepancy in the statements of different authors in regard to the time when the brain reaches its full size. The Wenzels, Tiedemann,* and Sir William Hamilton, state the seventh year as the date of its arrival at its full growth ; while Dr J. B. Mège of Paris says, that “ the human brain requires from 45 to 50 years to attain its highest degree of development and activity. The head of Cuvier is an example of this law.”—*Zoist*, No. 10, p. 147. “ But supposing, for a moment, the question of adult size to be settled, there are others equally important which remain to be so.” “ What is the average size of the head at birth ? What is the range of sizes at the same period ? What is the rate, or rates, of increase at the different periods of infancy and youth ? What are the modifications of development which take place between infancy and maturity ? What are the effects produced on development and character, by training and circumstances ?”

Mr Straton gives rules for finding the external from given internal dimensions of the cranium, and for inferring the corresponding size of head from the external dimensions of the cranium ; and illustrates them with numerous interesting examples. He discusses and condemns Professor Tiedemann's mode of measuring the cranium by filling it with “ dry millet seed ;” because, says he, if we carefully fill a glass tube, 10 inches long, one inch or more in diameter, and closed at one end, quite full, and then shake it, it will be found easy, by the shaking, to render one inch of the tube empty. “ In other words, it is quite easy to err 10, 15, or 20 inches in measuring skulls by such means.”

His “ next source of evidence is the measurements in use by those engaged in the hat business ;” and he gives the results of extensive inquiries into this subject. This measure does not give any information concerning “ the absolute size of *individual heads* ;” but it “ secures, beyond all doubt, an

* Mr Straton quotes from Tiedemann the statement, that “ Gall and Spurzheim are of opinion that the brain continues to grow till the fourteenth year.” This should be “ the *fortieth* year.”

average shape to each size." In our next publication we shall, if possible, quote his remarks on this subject.

The foregoing remarks apply to the measurement of the head as a whole. Mr Straton proceeds to discuss the mode of measuring, "*First*, The Frontal region, or compartment of the intellectual faculties; *Second*, The Coronal, or region of the superior sentiments; *Third*, The Occipital, or region of the domestic feelings and inferior sentiments; *Fourth*, The Lateral region, or aggressive group of organs.

"The last named region is, in reality, two separate groups, or portions, one on each side of the head, but, for the sake of simplicity, is spoken of here throughout as one. It is proposed to measure each region or portion just named, as if it were formed like a pyramid—the apex dipping into the medulla oblongata, and the base being a specified part of the surface of the head or cranium. It is not, of course, meant to be understood that each portion is, strictly speaking, a cerebral pyramid in natural structure, it being well known that all the fibres do not pass directly from the surface to the centre of the brain; but the irregularities, if such they may be called, are supposed to be constant, and a pyramidal figure is that which, from anatomical and mathematical considerations, it appears proper to measure.

"In determining the superficial space on the head, in other words, the base of the pyramidal portions to be measured, it would obviously be impossible to adhere strictly to the outlines of the different regions or groups of organs which we are accustomed to contemplate in studying Phrenology; and even though it were quite practicable to determine the precise position of the outlines in every case, their irregular waving course would complicate the measurements far too much for practice. For our present purpose, however, it is not considered necessary to attempt to follow the precise phrenological outlines. It is believed that a sufficient approximation to accuracy is obtained if we measure the largest possible portion, or nearly so, in each region, to which a regular outline of surface can be easily and certainly found by observing anatomical points and lines—provided that the part measured always bears a proportional relation of size to the entire region. This is what I propose to do. The superficial space measured of each region will therefore be a parallelogram, more or less long, more or less broad, according to the measurements of each individual case—and always below the actual size of the phrenological group measured."

There is a section on "equally balanced heads," in which Mr Straton says—"From the measurements of a large num-

ber of the best balanced heads I have seen, I am led to infer that the following are the proportions of the different regions, measured in the manner above specified :—

“ The *Anterior*, or intellectual region, is one-tenth part of cubic measure of the whole head.

“ The *Coronal* is equal to three times the *Anterior*, or three-tenths of the head.

“ The *Posterior* is equal to the *Coronal*.

“ The *Lateral* is equal to twice the *Anterior*, or two-tenths of the measure of the head.

“ Such, it appears to me, are the uniform proportions of an equally balanced head, measured in the way proposed.

EXAMPLES.

Size of Head.	Anterior, 1-tenth.	Coronal, 3-tenths.	Lateral, 2-tenths.	Posterior, 3-tenths.	Sum.	Add 1-tenth.	Aggregate.”
150	15	45	30	45	135	13·5	148·5
148	14·8	44·4	29·6	44·4	133·2	13·32	146·52
134	13·4	40·2	26·8	40·2	120·6	12·06	132·66
96	9·6	28·8	19·2	28·8	86·4	8·64	95·04
82·4	8·24	24·72	16·48	24·72	74·16	7·42	81·58

We select the following from his table of “the Measurement of Regions.” By the word “proof,” at the head of the first column, is meant the cubic size of the head, as indicated by measuring the quantity of water which it displaces :—

NATIONAL.

	Proof.	Anter.	Coron.	Lateral.	Posterior.	Sum.	Add.	Entire.
Icelander,	110	10	30	26	31	97	10	107
Celt,	120	12	31	28	35	106	11	117
Swiss,	115	10	34	26	31	101	10	111
Ancient Greek, . .	118	11	33	29	33	106	11	117
Chinese,	100	9	29	25	26	89	9	98
Hindoo,	105	8	31	22	32	95	9	104
New Zealander, . .	110	8	31	27	31	97	10	107
Peruvian,	94	8	26	22	27	84	8	92
Negro,	102	5½	26	25	33	90	9	99
N. American Indian,	90	9	25	23	24	80	8	88
Carib,	106	7	26	29	33	95	10	105
Peruvian,	92	8	24	24	25	83	8	91
Brazil Indian, . .	88	8	24	20	27	79	8	87
Araucanian Warrior,	105	9	24	26	24	93	9	102

In the conclusion of the pamphlet, the author “takes leave to assume that the reader is prepared to examine the cases quoted in the table of the measurements of regions, to compare these with each other, with model proportions of all sizes, with any other heads whatever, and with the published memoirs of the different individuals, and from the whole to

judge how far the measurements given are in accordance, or otherwise, with each other, and with the known characters.

"I may first remark, however, that it is the constant, or general features only, of the individual character, which will be made apparent in most cases by the measurements. When striking features of character turn upon one or two prominent or defective organs in one or more of the groups, such features will appear in the measurements so far only as the general size of the region is affected by the excess or deficiency.

EXAMPLE I.

		Intel.	Mor.	Aggr.	Dom.
Caucas. Model, average size, . .	137	14	41	27	41
Dr Gall,	174	20	54	34	46
Model, corresponding size, 174		17	52	35	52

"The first remarkable peculiarity of Dr Gall's head is great size, 174 inches—the average of his race being 137. The second is the still greater size of the anterior or intellectual region, 20 inches—the model proportion being 17 inches for the corresponding size, and 14 inches for the average. The coronal region appears, by the cast, to be unequally balanced in some of the organs; but, upon the whole, it is slightly above the model proportions, and far above the average—being 54 to 41. The lateral is slightly below the model (34 to 35), and the posterior still farther below (46 to 52.)"

In conclusion we remark, that, as the absolute size of an organ determines, *cæteris paribus*, the absolute power with which that organ is capable of acting, so, of course, the absolute size of the entire brain, *cæteris paribus*, determines the power with which that brain is capable of manifesting the aggregate of the mental functions. But as, in the individual brain, one organ may be large or small in relation to the other organs, the absolute size of any one organ will be no criterion of the relative power of the corresponding faculty in proportion to the others in the individual mind. In order to draw really scientific conclusions from measurements, we should require to know, in addition to the temperament, age, and training, *first*, the absolute size of the whole brain; and *secondly*, the relative size of each organ in proportion to that of all the other organs in the individual head. Mr Straton gives us the first, and he gives the relative proportions of the different regions of the same head; but he has not attempted to measure the individual organs. This, therefore, remains a great desideratum.

In regard to the absolute size of the whole brain, his

method appears to be sound ; but it affords only approximations to truth in regard to the size of the regions. According to the nearly unanimous opinion of physiologists, the grey matter of the convolutions constitutes the organs of the mental functions, and the fibrous medullary matter serves as media of communication among the different organs themselves, and between them and the rest of the body. Mr Straton's measurements of the regions include both, without distinguishing the difference of functions. In the present state of anatomical knowledge, we cannot perceive how this error can be avoided. For example, in measuring the size of the anterior lobe, he treats it as a pyramid having its small end in a point corresponding to the axis of the openings of the ears. In Hare, the murderer, the anterior lobe is broad ; but (measured by the size of the superorbital plate) it is very short from front to back ; in other words, the *convolutions* composing it are shallow, and the power of intellectual manifestation should therefore be weak. As, however, the *breadth* gives the base of Mr Straton's pyramid, and the length of it is determined, not by the distance between the surface and the bottom of the convolutions, but by the distance between the surface and the axis of the ears, which distance (owing to the mass of the organs of the propensities lying before the ear) is great ; the measurement gives Hare a degree of intellectual power above that which we should ascribe to him by the common mode of *estimating* the size of the anterior lobe, and also above that which he manifested. His "intellect," says Mr Straton, "is above the model proportion (16 to 15), and still farther above the average (16 to 15). The coronal is not only below the model (40 to 50), but even below the average (40 to 41). The aggressive is far above the model (40 to 30), and still farther above the average (40 to 27). The disproportion between the moral (5 below) and the aggressive (10 above) is 15 inches, being nearly the entire size of the intellect." There is here a general approximation to truth ; the deviation, owing to the circumstance now stated, being in regard to the intellect and the anterior lobe.

We do not charge upon Mr Straton the imperfections which still exist in regard to these measurements, but, on the contrary, are grateful to him for the advances which he has made. The difficulties are very great ; and we hope that the value of his "Contributions" will be so estimated as to induce him to proceed in his interesting researches.*

* An accomplished practical mathematician, whose opinion of Mr Straton's pamphlet we requested, has favoured us with the following remarks :—

"The proof mode of measurement, by immersion in water, is, of course,

II. *Mesmeric Experiences.* By SPENCER T. HALL. London: H. Bailliere. 1845. 12mo, pp. 103.

Mr Hall here relates, in a pleasant style, the chief of his mesmeric experiences, and the volume may be recommended to the perusal of those who wish to acquire, without much trouble, a general knowledge of what the mesmerists teach.

It does not appear that any new light has lately been thrown upon the phreno-mesmeric phenomena. This subject still continues in the position where it was left by Dr Gregory in our 81st Number (vol. xvii., p. 384). We shall therefore content ourselves with quoting the following passages from Mr Hall's work, leaving them to make their own impression on the mind of the reader.

"One evening," says Mr Hall, "I was trying experiments with Mr D. G. Goyder, editor of the *Phrenological Almanac*, and Mr Henry Atkin, at the house of the latter intelligent friend in Sheffield. The patient was an uneducated girl, who had never been mesmerised before, and if not totally ignorant of Phrenology, could only have caught of it the most vague popular idea. She was passed into a deep mesmeric sleep, by me, in about twenty minutes, in the presence of Mrs Atkin, and then brought before the rest of the company

unexceptionable when practicable. As to the mode by measurement, it is not exactly that which I would have employed; the breadths and heights are not taken in the situations usual in finding mean dimensions, nor are the heights perpendicular to the length. But, of course, neither of these particulars is very important, provided that one error be made to compensate another; and this the author appears to have adjusted well, by numerous trials of course, if you can trust his statement of the results. These, in fact, agree so well with the proofs by measurement, in heads of every variety, that it would be almost impossible to devise any general mode which would give a nearer approximation, without adding considerably to the trouble. Still, this remark rests on the impartiality of the writer's measurements; and it is easy to see that, from the unequal distribution of the widths and heights, there will be certain conformations, of which we could say beforehand that the computed capacity would be greater or less than the actual capacity.

"If I were attempting the same thing, I would employ Sir Isaac Newton's method of equidistant ordinates, which was expressly intended, and is beautifully adapted, for measurements of this kind; but, in order to bring it into practical operation with nicety, some mechanical apparatus would be necessary for taking the dimensions correctly, which, however, would neither be difficult to devise nor troublesome to use. It would have the important advantage of being independent of *particular points* in the skull, which, at least in the case of the living subject, must be difficult to determine exactly.

"The author's measurement of the particular compartments of the skull is, mathematically considered, very good; but I am altogether ignorant how it may apply to the phrenological divisions."

without appearing in the least disturbed. On my touching the region of *Tune*, she broke forth in a strain of melody as sweet as it was loud and clear, and gave a few equally striking indications of the functions of other faculties. But something followed that surprised and puzzled us, since, when Mr Goyder suggested that I should excite her *Imitableness*, and I touched (as it appeared on close scrutiny) a point rather towards the back of the space allotted to that organ, she responded in terms quite at variance with our anticipation, manifesting diligence or industry in a most significant and powerful manner—but nothing of Imitation. She persisted that she was at work, not imitating anybody, and would not be hindered by our questions and interruptions. This was so contrary to the suggestions of Mr Goyder, and to my own anticipation—so opposed to what we understood of Phrenology—as to make us for a time suspend our judgment; and the patient being awake, declared herself oblivious of all that had passed in her sleep.

“A few days afterwards I met incidentally with a young man, who had first been mesmerised on Mr Braid's plan of staring continuously at some motionless object, by which he was thrown into a state resembling an epileptic fit, and made so painfully susceptible to nearly all external influences, that the slightest atmospheric changes, as well as the forms and qualities of the objects he handled, would afterwards affect him most strangely, although a person of great muscular energy, firmness, and sagacity. I knew him on one occasion to be so affected by the mere handling or presence of a skull, although he was not aware of the source of the influence, as to become an impersonation of the character of the man to whom it had belonged. Phrenologically speaking, it must have been the cranium of one sadly deficient in all the cheerful and hopeful characteristics of humanity, but given to anger and to alimentive gratification; probably drunkenness. It had been used by Edmund Kean, when representing Hamlet in a provincial theatre, and was, for that reason, valued as a relic by the young man to whom I allude, in whose possession it had been only a few hours, when he became wretched—despondent to the utmost degree; out of his usual sympathy with what was good and beautiful, and, as the evening advanced, delirious, with a determination to suicide. He could not tell me the cause of this, nor was I then myself aware of it; but sat up with him all night to prevent him carrying his purpose into execution. It was a night of horrors; but I kept calm and hopeful myself, which, with thankfulness I may observe, is generally the case where my aid is likely to be of benefit to a patient, however violent his pa-

roxysms. Next day, while he was still in a hot fever, delirious, and most wretched, by a mere incident I detected the cause; had the noxious object taken away; removed his fever, reducing, in a few minutes, the pulse from 120 to 80, by what Deleuze calls the long passes; and he became almost instantaneously well. . . .

"Finding this young man so susceptible that I could either quicken or suspend sensation in any part of his body—could, in fact, lock or unlock his jaw, by operating upon his toes even—I thought that, with judicious treatment, he would be a good subject for phreno-mesmerism; and so I found him, always corroborating the doctrines of Gall when I attempted to "magnetise" the brain by touching the *centre* of those spaces given by that philosopher to the organs he had discovered. One day, however, on my touching, as I thought, the region of *Imitateness*, he commenced with great energy the same movements of his hands as those required in the trade he worked at—that of a file-cutter. Thinking this might be really a manifestation of *Imitateness*, I asked him what he was doing. His reply was, "Why, don't you see? Cutting files, to be sure. Don't bother me." "Whom have you seen cutting files?" was my next question. "Why, don't you see that I am cutting them myself?" was his reply. "Well," I continued, "but *why* are you cutting them?" "Because," said he, "they are wanted; and if you hinder me in this way, I shan't be able to get them done soon enough." At the close of this parley, my finger-end accidentally slipped a little forward, when he began to manifest *Imitation*, by mocking every sound that was made. The above indication of diligence, it should be remembered, resulted from my exciting the same part in this patient as in Mr Atkin's servant; but, in both cases, altogether independent of my anticipation: in the first, in opposition to a direct verbal suggestion; and, in the second, in opposition to the patient's own ideas of *Phrenology*.

"The thought now struck me, that as most, if not all, of the other functions had been so accurately and strikingly indicated in these cases, that it would require any one who might attempt to simulate them to be at least a Combe in *Phrenology*, a Locke in metaphysics, and a Garrick in acting; since the patients were too little educated to be more than passive subjects in the matter—and especially as this manifestation of diligence or industry was not less striking and characteristic of some distinct function, than were the indications of those faculties already recognised—Mr La Roy Sunderland might possibly be correct in his hypothesis of a great amplification, and that what I now saw was the natu-

ral language of the moral faculty of *Diligence*, the organ of which might be seated in that part of the head. Acting upon this idea, and avoiding as much as possible any design or suggestion as to the results, I afterwards proceeded, by minute changes of the point of contact, over the entire head of this patient, and the heads of others in the same way; some of my friends and correspondents have done the same with similar results; and I am bound to state my conviction, that if such results are corroborative of Phrenology at all, they are equally so of a very great amplification of its details. If, however, they can be referred with more certainty and satisfaction to any other principle, nothing will afford me more pleasure than to give way to it. A pioneer and expositor, rather than a theorist, I wish my opinions to be valued only according to the facts upon which they are founded. I am well aware, and have sometimes shewn how, in certain conditions of the patients, similar results may be obtained by verbal suggestion, or association of ideas with particular points of contact in any part of the body, so that they may be *trained* to whistle or sing if we touch the nose, and to weep with compassion if we touch the heel or the elbow. I am also well aware of, and shall proceed to describe, some beautiful cases of silent mental communion between operator and patient, by which the mute intention or expectation of one is indicated by the words or actions of the other. But how are we to explain those phenomena arising with such consistency—after a due allowance for idiosyncratic differences has been made—from what appears to be the paramount action of particular faculties, when they are opposed alike to the anticipations of the operator, the opinions of the patient, and the verbal suggestions of bystanders, if we do not recognise the hypothesis of a special influence through a distinct organic medium? For the present I leave this question with the reader."

In Chapter vii. Mr Hall introduces the case of William Holbrook, who is described as an intelligent and estimable young man, very susceptible to mesmeric influences. "I have always," says he, "valued his case highly, because of its evident freedom from guile or simulation. Many, when mesmerised, are still sufficiently under the influence of ordinary motives to 'help nature' in some degree; and, without any real disposition to deceive, will endeavour to gratify the on-lookers with whatever may be anticipated or desired, by the super-addition of acts not strictly peculiar to the abnormal state that they are in. Thus it is, that they will sometimes *guess*, and make mistakes, when unfair and often absurd questions are put to them, or suggested, under the sup-

position that they are clairvoyant, because they are then apt to partake of the wonder-loving, speculative spirit of their questioners. In Holbrook I never saw any tendency of this kind, but have always had the most perfect faith in his passiveness, under the circumstances, to what may be termed the strictest conditions of mesmerism. Still, often so strikingly beautiful and logical were his responses to phrenological excitement, that it was desirable, after the promulgation of so many hypotheses of Phreno-Mesmerism, to learn, if possible, whether in him the phenomena resulted in any degree from his acquired knowledge, or were solely owing to some intuitive if not organic principle. With this view I one day requested him to tell me what he actually knew of Phrenology, and of the location of different organs. His reply was, that, practically speaking, he knew next to nothing: his natural inclination had led him to study other matters so exclusively, that he had paid as little attention to Phrenology as to any thing; and he was not certain that he could define the location of more than half a dozen organs with accuracy. To test this, I asked him to place his finger upon any point of my own head, and tell me, if he could, the name of the region which he was touching; but we had not proceeded far upon this plan, before I felt my whole frame thrilled by a most unusual sensation. In short, it soon became evident, that through this mode of contact he was exercising over me a most powerful magnetic influence, and, as the event proved, calling distinct faculties into excessive activity, although I still remained perfectly awake, and able to reason upon the species of 'mania' he was inducing! Directing him to apply his finger to the centre of the posterior region of my head, with a view to test, if possible, whether it was the seat of *Inhabitiveness*, or of *Concentrativeness*—I soon found my anticipation altogether over-ruled by the apparition of *two infants*, so palpably present to me, that I felt as though it would be possible to take hold of them. What is more curious, these were mother and daughter—a *dear sister of my own, as I had known her when an infant, and her daughter, then an infant*. This was evidently a manifestation, neither of *Inhabitiveness* nor *Concentrativeness*, but of *Philoprogenitiveness*; and having no children of my own to engage that affection, it appears to have been occupied by such other fitting objects as stood nearest in relation to me.

"The effect of this first excitement being removed, the operator next, by my own direction, placed his finger a little higher, when my native cottage appeared quite as palpably before me as though I had really been at and about to walk into it. This must have been *Inhabitiveness*.

"On touching another point in the same region—instead

of *one* sole spot—appeared to me, as if concentrated in one scene, *all* the remarkable places I had ever visited. Old cathedrals, castles, parks, mountains, forests—every place of note to which I had made a pilgrimage—all seemed to be combined in one idea, mirrored in one glowing affection; and this was no faint vision: it appeared at the moment a striking reality.

“Drawing his finger somewhat aside from the above point, towards the region marked on the charts as *Adhesiveness*, while he gently pressed it there, I saw and I wished to shake hands with *one* friend alone; and then, on the point of contact being moved a little further in the same direction, I suddenly became aware, as it seemed, of the presence of *all* the friends I had ever known. This appears to me to be the seat of the *social* affections.

“Subsequently, by direction, he endeavoured to excite *Self-esteem*, *Benevolence*, and one or two other faculties; but by this time my state was much changed; I was beginning to be very confused both in my thoughts and feelings—possibly from the activity of so many conflicting principles—a slight sickness and headache supervened; and I have never since submitted to the same class of experiments—nor do I think it advisable, on any occasion, to induce phreno-mesmeric phenomena when the patient is in a state of vigilance, though in some cases it may easily be done.

“From the above experiments, it would appear that, as the results were in several instances very different from what I had anticipated, and as the operator had no motive for touching me anywhere but as he was directed, my own case does not furnish any evidence against Phreno-Mesmerism, although it would seem to qualify a view more amplified and modified than that at present taken by most phrenologists.”

Mr Hall treats largely of the curative effects of Mesmerism, and gives a number of cases. These, however, are seldom so full in the details as to admit of a confident judgment being pronounced respecting them. Moreover, it would have been satisfactory to be assured that the cures have always been tolerably permanent: why, for example, does the account of Case xi. (“Extension of a contracted leg”), which occurred at Carlisle, so long ago, if we mistake not, as August 1844, come no farther down than three weeks after the cure? A chapter is devoted to the case of Miss Martineau, to which it would be out of place here to do more than refer. We conclude by saying that some of the mysterious phenomena mentioned by Mr Hall are such as we, in our inexperience, cannot help regarding as incredible, though we have no doubt that he himself thinks he has good grounds for his belief.

III. *Notes on the New Reformation in Germany ; and on National Education, and the Common Schools of Massachusetts.*
By GEORGE COMBE. Maclachlan & Co., Edinburgh ;
Simpkin & Co., London. 8vo., pp. 37.

These "Notes" were originally written for, and published in, the *Scotsman* newspaper ; and have been reprinted in consequence of a demand for them in a more connected form. The author describes the German character as follows:—
"The Teutonic, or German race, although slow, is distinguished by great vigour, earnestness, and solidity of character. They are profound and intrepid thinkers, but not practical ; they are full of deep and serious emotion, but it too often evaporates in enthusiastic ebullitions of poetry or song, without leading to any ulterior result. When excited, they are terrible in passion ; but they are slow to anger, and are generally mild, considerate, and compassionate. They are the most upright, consistent, and honest people in Europe. A phrenologist would describe them as having large brains ; a good deal of the lymphatic, combined with the sanguine, bilious, and nervous temperaments ; large organs of the animal propensities, large organs of the moral sentiments—those of Benevolence and Conscientiousness predominating ; also large organs of reflection, but with moderate or small organs of the observing and practical faculties."

It would be going beyond our province were we here to enter on the subject of the present religious movement in Germany ; those who desire to see a concise and connected history of the late momentous events, will find much to interest them in Mr Combe's sketches. The "Notes on National Education, and the Common Schools of Massachusetts," will gratify the friends of non-sectarian education, by shewing that on the other side of the Atlantic such a plan has been proved to work well in practice, and has gained the decided approbation of the great body of the people. "Among the citizens of the American Union, may be found the most ardent and zealous sectarians, and the most dogmatic and fiery politicians, each armed with constitutional power, by his votes, to give efficacy to his own will, and to counteract the designs of his neighbours. Nevertheless, in most of the States, the obstacles to public instruction have been surmounted ; and Jew, Christian, and unbeliever, unite in maintaining schools in which the children of all receive a highly valuable moral, intellectual, and religious education. We say *religious* education ; because we have recently received a pamphlet from Massachusetts, which shews that religious instruction is communicated in the common schools of that State ; and a brief exposition of

the extent to which it is carried will enable our readers to judge whether, compared with the profound ignorance in which so many of the children of our labouring classes are left, the religious teaching in these schools is not a benefit of the highest order to the community ; and whether similar schools could not be introduced with advantage into Britain." The pamphlet here mentioned, entitled "The Common School Controversy" (Boston, U.S., 1844), exhibits the arguments of both the friends and opponents of sectarian religious education in national schools ; and it is truly refreshing to read the liberal sentiments expressed by some of the writers, one of whom, the Hon. Alfred D. Foster, says :—"I am Sir, a decided believer in the doctrines of grace, as held by orthodox evangelical Christians. In them to me are the spirit and life of the Gospel—on their truth rest my hopes of heaven. I must teach them to my children, for, in my opinion, it is through love and obedience to them, that my children, as well as I, must be saved, if saved at all. But have I a right to insist that they shall be taught to my children in a school supported by me only in common with those whose faith is different from mine, and to whom my faith is both a stumbling-block and a foolishness ? I say no : and I think the laws and common sense say, and should continue to say, no. My next-door neighbour feels a deep interest in the cause of common school education ; he is active in promoting it ; he pays as much towards it as I do (though this last circumstance is of no consequence) ; he desires good morals to be taught, and many of the great religious truths which I hold ; but the Trinity, man's depravity, the atonement, spiritual regeneration, to me realities of revelation or of consciousness, are to him, not truths but imaginations. I wish we might see eye to eye ; I may properly, with kindness, shew him my reasons for my faith, and urge them upon him ; but I do not feel any more that I have a right to compel him to have his children taught those doctrines in school, than he has a right to compel me to have my children taught the doctrines of Socinus, which I regard as wholly unsupported by Scripture, and feebly by reasoning. What then can we do ? We can meet where the constitution and the laws allow us, on all common ground. Where we differ, we can peaceably separate and teach our children, or procure them to be taught, what we believe to be religious truth. The means are at hand in our families, in Sunday schools, from the pulpit. This, I think, we ought to do. And when so much is to be done, which all agree in thinking desirable, I regret exceedingly that obstacles should be thrown in the way of doing it, because our own religious views cannot be taught."

IV. INTELLIGENCE, &c.

Edinburgh.—At the Annual General Meeting of the Phrenological Society, held on the 8th December 1845, the following gentlemen were elected office-bearers for the ensuing year:—Sir George S. Mackenzie, Bart., *President*; George Monro, George Cox, James Simpson, and Dr Andrew Combe, *Vice-Presidents*; Peter Couper, James Tod, Dr Patrick Neill, Dr Francis Farquharson, Charles Maclaren, and Andrew Dun, *Councillors*; Robert Cox, *Secretary and Curator of the Museum*. The following donations were presented:—(1.) Skull found in a stone coffin on the farm of Stonelaws, East Lothian; presented by Mr James Mitchell junior, Stonelaws. (2.) Two skulls from the churchyard of North Berwick Abbey; presented by Mr C. Stevenson, Redside, East Lothian. (3.) Two skulls from Drummahaire Abbey, near Sligo; presented by Mr Alexander McIntyre, Glasgow. (4.) *Quistioni Medico-Legali intorno alle diverse Specie di Follie: Opera di Luigi Ferrarese, Dottore in Medicina. Napoli: 1845.* Presented by the Author. (5.) *Prolegomena in Philosophiam Musaram. By T. S. M. Forster, M.B., &c. Bruges: 1845.* Presented by the Author. Thanks were voted to the donors. The Secretary reported that the lawsuit at the instance of the Society against Dr Robert Verity of Paris, for payment of the legacy bequeathed to them by the late Dr Robertson, continues in the same position as at the last annual general meeting (see vol. xviii. p. 90), the appeal of Dr Verity to the Court of Cassation not having yet been disposed of.

Appointment of a Lecturer on Phrenology in Anderson's University, Glasgow.—In last number we announced the establishment of this lectureship, and we have now the pleasure of adding that the choice of the electors has fallen on Dr William Weir, one of the physicians to the Royal Infirmary of Glasgow, and member of the Faculty of Physicians and Surgeons of that city. Dr Weir, besides having been known for many years as an able phrenologist, is an experienced teacher of medical science, having lectured for ten years on the Theory and Practice of Medicine, and delivered several courses on Clinical Surgery and Clinical Medicine in the Infirmary, in addition to some popular courses on Phrenology and on Physiology. The following just remarks on this appointment appeared in the *Scotsman* of 10th December:—

“In common with many who have long felt an interest in Phrenology, we have for some years past, and more especially of late, been struck with the many sure, though unobtrusive, indications of its steady progress in public estimation, and with the extent to which its principles are incidentally, and sometimes even unconsciously, appropriated, without any allusion to their origin, in many works of professional merit and reputation. Those, however, who have never looked below the surface, and who know too little of Phrenology to be able to recognise even its plainest doctrines when divested of their somewhat uncouth nomenclature, can have but so imperfect an idea of the true state of the case, that they will perhaps be more surprised than ourselves to learn that a lectureship on Phrenology, as a regular branch of science, has just been established in one of the most prosperous educational establishments in the country, viz., the Andersonian University of Glasgow, and that, too, by the unanimous vote of its managers. We have much pleasure in adding, that on the 24th of last month, Dr William Weir, a gentleman well known as a successful lecturer in the medical school of that city, and now one of the physicians to the Glasgow Royal Infirmary, was appointed to the lectureship, for the adequate support of which an annual endowment has

been granted by the trustees of the late William Ramsay Henderson, Esq.

"Aware, as we are, of the growing importance and influence of the Andersonian University, as evidenced by the number and comprehensiveness of the subjects now taught within its walls, and by the increasing number of its students (the number of tickets issued to medical students alone last session having been 606), and deeply impressed as we have long been with the substantial truth and importance of Gall's discovery, we sincerely rejoice at this appointment, and congratulate the managers of the university on having been the first to disregard the prejudices of the ignorant, and welcome Phrenology within their walls. Without desiring to attach any undue weight to the proceeding, or to hold every man who has supported the appointment as giving a personal testimony to the truth of Phrenology in all its details, we still cannot regard the establishment of this lectureship as an insignificant event in the history of the new philosophy. Its effect will undoubtedly be to encourage inquiry and to promote the cause of truth; and, under the guidance of a man of Dr Weir's matured judgment, extensive experience, and high position, we have no fear of the young being either carried away by blind enthusiasm, or induced to waste their time on a fruitless inquiry. If true, Phrenology is a subject eminently deserving of examination by the medical profession and general student; and if the reverse, there is no better way to end its pretensions than to submit them to the scrutiny of the young, whom the lapse of a few years will constitute its natural umpires. We repeat that, in our opinion, the managers of the Andersonian University deserve great credit for their liberality and foresight."

Anderson's University was founded in 1795 by Mr John Anderson, professor of Natural Philosophy in the University of Glasgow, who endowed it with a valuable philosophical apparatus, museum, and library; and it was incorporated by a seal of cause from the magistrates and council of the city in 1796. Its constitution and management are of the most liberal kind. Dr Cleland states (*Encyc. Brit.* x. 540. art. GLASGOW), that it "is subject to the inspection of the Lord Provost and other official persons, as ordinary visitors, and is placed under the immediate superintendence of eighty-one trustees, who are elected by ballot, and remain in office for life, unless disqualified by non-attendance. The trustees consist of nine classes of citizens, viz., tradesmen, agriculturists, artists, manufacturers, physicians and surgeons, lawyers, divines, philosophers, and, lastly, kinsmen or namesakes. The trustees elect annually by ballot nine of their number as managers, to whom the principal affairs of the institution are entrusted during the year. The managers elect by ballot from their number, the president, secretary, and treasurer. Although the views of the venerable and celebrated founder embrace a complete circle of liberal education, adapted to the improved state of society, it was found convenient at first to limit the plan to natural philosophy, chemistry, mathematics, and geography. The business of the university commenced on the 21st of September 1796, by Dr Garnet's reading in the Trades' Hall, to persons of both sexes, popular and scientific lectures on natural philosophy and chemistry, illustrated by experiments. Soon after this period, the managers rented, and then purchased, extensive premises in John Street. Dr Garnet having been appointed professor of experimental philosophy and chemistry in the Royal Institution of London, which had been formed on the model of this primary one, resigned his professorship; and, on the 18th of October 1799, Dr George Birbeck was appointed as his successor. In addition to what had been formerly taught, he introduced a familiar system of instruction, which he demonstrated by experiments, free

of expense. Dr William Anderson and Dr James Cleland recommended about 500 operatives to this class. This mode of tuition, by which philosophical subjects are explained in ordinary language, divested of technicalities beyond the comprehension of the students, is continued with great success at a small expense, and has been productive of the happiest effects on a valuable class of society. Dr Birbeck resigned his professorship on the 5th of August 1804, and returned to London. Dr Andrew Ure was appointed his successor on the 21st of the following month, and, during a period of twenty-five years, discharged the duties of his office with great ability, when he also went to London to reside. The affairs of the university becoming more and more prosperous, the trustees purchased from the City the Grammar-School buildings in George Street; and, having made considerable additions and alterations, the premises now contain numerous halls for the professors, and for the museum, which has of late become very rich in its several departments. The university buildings were opened in November 1828, since which time the classes have been well attended, and *soirées* have been introduced with the happiest effect. The subjects professed in 1834 were, first, literature, philosophy, and popular science, natural philosophy, logic, ethics, rhetoric, mathematics, natural history, modern languages, oriental languages, drawing and painting in oil and colours, and popular lectures on the veterinary art; and, secondly, surgery, chemistry, medical jurisprudence, theory of medicine, anatomy, physiology, and midwifery."

Dr Weir's first course of lectures in Anderson's University will commence on 7th January 1846, at 8 o'clock P.M., and be continued every Monday, Wednesday, and Friday, at the same hour. The course will extend to forty lectures, illustrated by engravings, wax models, and casts; and will embrace the anatomy of the brain and nervous system in connexion with Phrenology, and the application of its principles and facts to the treatment of insanity, to criminal jurisprudence, and to education. Though intended chiefly for medical students, the lectures will be rendered interesting to the general student, the educator, and the philanthropist. Mr Combe has been requested to open the course, and will deliver an introductory address on the evening of 7th January.

Lectures on Phrenology.—In October and November, Mr Goyder delivered a course of sixteen lectures at his hall in *Glasgow*. During the session 1844-5, he delivered a course of twenty lectures in the Mechanics' Institution, Cowcaddens, Glasgow; and at *Vale of Leven* Mechanics' Institution, two lectures on Phrenology applied to the government of the passions and regulation of the temper.—In October, Mr C. Donovan delivered eight lectures on Phrenology at *Bandon* in Ireland; in November, six in *Liverpool* for the Phrenological Society of that town, besides a course of instructions in his system of manipulation to a class of twelve members of the Society.—At the conclusion of his labours in *Cork*, mentioned in our last number, a meeting of Mr Donovan's pupils was held on the 5th October, in the Committee-room of the Cork Institution, the Rev. Wm. Whitelegge, A.M., in the Chair, when the following Address to him was proposed by Samuel Hobart, Esq., M.D., and seconded by J. S. Varian, Esq., and unanimously adopted:—"DEAR SIR,—We, your Pupils, who have assembled this evening, beg to offer to you the following expression of our sense of the services you have rendered to us, as well, we trust, as to many others in our city, by your public and private teaching of the theory and practice of Phrenology. At the commencement

of your first course of Lectures, early in June last, Phrenology had but few supporters here. By many it was ridiculed—by still more it was totally disregarded. But a great change has since been effected. Your lectures, instructions, and private practice, have reversed the picture. Public respect for the science of “the Functions of the Brain” has been created: the believers in the details of the science are numerous, and ridicule and opposition have been at least *silenced*. To us, your visit cannot fail to form an important event. The spirit of fact loving discussion, and of a bold advocacy of truth, has spread rapidly under your precept and example. Mental science, hitherto involved in learned obscurity, has assumed the clearness and accuracy which now distinguish other branches of human inquiry; induction begins to supersede speculation, and “the fittest study of mankind” has, by the discovery of the functions of the brain, been made fit for man to study. But it is not alone in the abstract study of the human mind that the science you teach is of value. Under its guidance the powers of individual men will no longer remain in that obscurity, even to themselves, in which, in so many instances, they have lain; in the choice of their various avocations, in the intercourse between man and man, and, above all, in the great work of education, regard will be had to the moral and intellectual aptitudes of individuals. Instead of viewing the mind of man as a blank sheet on which circumstances might exercise a creative power, we shall look upon each specimen of humanity as having received from the Divine Originator, specific and individual, yet educable, mental and moral characteristics. We cannot close without expressing with what peculiar satisfaction we have heard of the establishment of a Professorship of Phrenology in the Andersonian University of Glasgow. Scotland has led the way nobly in her cultivation of this, and all other sciences; may such an example be followed by all nations, for knowledge is the great pacificator. We would wish to dwell more fully on your personal qualifications, but we are convinced we shall act more in conformity with your wishes, by expressing in brief but sincere terms the sentiments of respect and esteem for your public and private character, which we believe to be in strict accordance with those principles of moral and intellectual elevation of which you are the zealous and able advocate. W. WHITELEGGE, A.M., Chairman.”—This Address, with a suitable reply by Mr Donovan, was published in the local newspapers.

Lectures on Mesmerism were delivered by Mr Spencer T. Hall at *Leamington* in October, and gave rise to considerable excitement. We learn from the *Leamington Spa Courier*, of 18th October, that Dr Leitch of that town came forward and offered to give L.100 if Mr Hall would produce a clairvoyant belonging to the town who could read a line of written or printed words shut up in the commonest way from sight; on condition that Mr Hall, or his mesmeric friends, should, in the event of a decided failure, present a similar sum to a certain hospital. Mr Hall gave his reasons for declining to accede to this proposal; and, in reply to a question from the chairman, as to whether, if Mr Hall failed a few times, he should forfeit L.100 each time, Dr Leitch said, “By no means; he shall have six months if he pleases and one hundred trials: I shall enclose the words in an envelope, so sealed that it cannot very well be tampered with, and leave the rest to yourself and your clairvoyant.”—Mr Hall observed, that as any failure, from any cause not understood, would be set down against Mesmerism, instead of being attributed, as it might possibly with justice be, to the want of knowledge of the true principles of Mesmerism, he had too much respect for the cause thus to risk its reputation under circumstances which, for anything he then knew, might be in themselves inimical to clairvoyance, and otherwise as absurd as

it would be to call upon a lecturer on Botany, illustrating the nature of a plant at a particular stage of its growth, to grow a plant before their eyes to prove that he was not cheating them, however adverse to its growth all contingent circumstances might be.—Dr Leitch said he was satisfied: as Mr Hall declined to furnish proof of one of the most universally repeated mesmeric assertions—an assertion which he himself made in his book—he left the matter with the public, well assured that they would appreciate the motives of his refusal. (Cheers and confusion.)—Mr Hall replied that it would be time enough to charge him with meanness of any kind when it could be proved. (Cheers.) The course of opposition which had been taken was, he maintained, not only unphilosophical but unfair. It was a crafty attempt to invalidate the effect of his lecture—that had not been on clairvoyance, but on a totally different class of phenomena, and which his opponent did not interfere with, because it had been so straightforward and clear—preferring to drag in an irrelevant question.—At a subsequent lecture, Mr Hall exposed the discreditable means by which Dr Leitch had contrived to frighten one of the boys who had been exhibited by Mr Donovan as mesmeric subjects, into an avowal of trickery. “After these boys had been mesmerised by Mr Donovan, Dr Leitch took a policeman—(Cries of ‘no, no!’) Well there was one present at Dr Leitch’s house, as if in attendance to apprehend a criminal. (Mr H. Young here exclaimed—‘Only part of the time.’ This observation was followed by mingled cheers and jeers.) Mr Hall continued: Be it so:—‘only part of the time.’ That a policeman was there, with handcuffs, is established by the fact, that he received a fee for his services, and was subsequently reprimanded by his superior for taking any part in the transaction. (Cheers.) By way of invalidating Mesmerism, Dr Leitch then told one of the boys, in a stern manner, that if he did not confess that he had been tricking those who believed in Mesmerism (the handcuffs having been displayed before his eyes), he would be taken to jail. (Sensation.) After this confession, thus wrung from him, he received from Dr Leitch five shillings as a reward for his delinquency. (More sensation.) . . . And let me ask, whether or not, if a professor of Mesmerism had ever employed similar means to induce a boy thus to belie himself in his favour, any man would have been more ready to condemn and to hold him up to shame, than Dr Leitch? (Cheers.) There is at the present time in Leamington a document, signed by the same boy, in the presence of a gentleman of the highest respectability, in which he avers that he really had been put into an abnormal condition by Mesmerism by that gentleman, subsequently to the scene at Dr Leitch’s; and further, that he had been induced to confess what he had done there, although that confession was false, by the fear of the punishment, and the hope of a promised bribe from his tempter and convict—Dr Leitch!” (Cheers.) Mr Hall concluded by saying, that if a moderate number of candid and intelligent gentlemen would form themselves into a committee of investigation, he should be happy to associate with them for the purpose of bringing Mesmerism to such tests as those best acquainted with its practice considered most legitimate and fair; these gentlemen should have the choice of subjects for him to operate upon. A committee was formed accordingly, and has published the following resolutions:—“A meeting of the committee for selecting cases, and for investigating the mesmeric phenomena developed by Mr Spencer T. Hall, in Leamington, was held in the County Library, on Monday, December 1. 1845—Present, E. F. Acton, Esq. (J.P.) chairman; Signior Brezzi, Mr Burgess, Mr W. Enoch, Mr Herring, Mr R. Muller, M. Basczewicz, Mr Sweatman, and Mr Catell; when it was unanimously resolved,—1st, That whilst the committee

is in duty bound to state, that several of the parties brought forward to be operated upon by Mr Hall were not visibly affected, the effects upon some of the others were so extraordinary, that the committee cannot but regret the absence of those scientific individuals whose more especial province it would be to investigate the subject; 2d, That the thanks of the committee be given to Mr Hall for his solicitude that the investigation should be conducted with the most rigid scrutiny, and for his unvarying readiness to further that object on all occasions."—We add the following particulars, abridged from the *Warwick Advertiser* of 29th November:—"On Wednesday and Thursday evenings, in the present week, Mr Hall delivered lectures at the Court House, in this town. On both of those occasions the audiences were large and highly respectable. On Wednesday evening the Chairman was the Rev. Dr Meesom (who a few years ago practised as a physician in London); and on Thursday evening that respected physician, and eminent man of science, Dr Lloyd, presided. Thus our frequently-expressed wish that respectable medical men would preside, and see 'fair-play,' was fully realised. With respect to the experiments on each occasion, we are in every way justified in saying, they were unusually satisfactory; for Mr Hall first operated upon a most respectable youth, residing in the town, whose integrity is beyond all possible doubt,—next, upon a little boy in the service of Mr Cooke, the bookseller, a boy whom he had never seen until the very evening of his lecture; and next upon another lad, who came forward from among the audience, *unexpectedly*, and who had never before heard a lecture or seen a mesmeric operation. No attempt was made to display clairvoyance. We may claim some excuse if we appear to be satisfied, more than previously, with Mr Hall's operations in our town; for the fact is, that *two* of the *three* cases of *strangers* being operated upon by him here, were parties from the *Advertiser* establishment. At the close of the two lectures, Mr Hall expressed a desire that a few gentlemen in this town would form themselves into a Committee, for the purpose of investigating the subject of Mesmerism, and declared his readiness to aid them, at any time, by making experiments in their presence. On Thursday evening, after the lecture, Dr Lloyd, in a very brief address, observed, that he had attended many lectures on the subject, and that after listening to Mr Hall's interesting lecture, and minutely and attentively observing all his various experiments—occupying together about four hours—he must say he had never been more entertained, or listened to a more fair and *candid* explanation of the lecturer's objects, feelings, and conscientious convictions, than on that occasion; and he thought Mr Hall justly entitled to the thanks of the audience for the lecture he had delivered, and for the interesting experiments he had brought before them. (Great applause.)"—The *Dublin Pilot* of 10th November says,—“A private *seance* of the friends of Mesmerism—to which quite an aristocratic circle of visitors came by invitation—took place at Mr Adair's residence on Thursday evening. Five persons were mesmerised on the occasion, four of whom are respectable citizens of Dublin, who permitted themselves to be operated upon there, but who would, of course, have a disinclination to appear on a public platform. Sir Philip Crampton, the Surgeon-General, was present among the visitors for a part of the sitting. The subject is acquiring strength here, and is moving in far higher circles now than when Surgeon Mathews and Doctor King made their feeble, but abortive, efforts to strangle it. Touching the course pursued by the latter gentleman and the editors of the *Dublin Medical Press* towards Mr Adair, the writer of the present notice deems it his duty to make an observation. In that paper a letter signed “Charles Croker King, M.D.,” appeared on the 24th September. It

purported to give a description of what occurred at two mesmeric lectures which the Doctor witnessed, but contained, in reality, a most strange misrepresentation of what took place, and stigmatised, besides, Mr Adair as a charlatan and a cheat, his auditors as dupes, and his subjects as mere knavish impostors. The writer of the present notice happened to be present at both the lectures. Seeing Mr King's letter—knowing, too, how far his assertions divaricated from truth—he thought it right to contradict them, and wrote to the editors of the *Medical Press* for the purpose, giving his name and address, and referring these gentlemen to a host of witnesses for the accuracy of his statements. But though they published the slander, they refused to insert its refutation—a thing not very usual with newspaper proprietors. Other steps would, in consequence of this refusal, have been taken to defeat the object of Mr King, had not that gentleman, though a lecturer at one of the medical schools, been found on inquiry not to occupy so high a place in his profession as would render him worthy of too much notice.”—We observe, from the Belfast papers, that Mr Adair has lately been giving phreno-mesmeric exhibitions in that town.

Phrenological Class, London Mechanics' Institution.—A novel and interesting substitute for the ordinary lecture on Wednesday evening, 26th November 1845, was given by four of the members of the “Phrenological Class” of this institution. They delivered four short essays on Phrenology and its applications. Mr W. D. Mitchell presented a concise view of the fundamental principles of the science, and briefly considered the proofs on which they are founded. He also discussed and answered, in a very effective manner, the principal objections urged against Phrenology. The next essay, by Mr Eason, on “the power of Phrenology in discriminating character,” exhibited considerable vigour and intellectual power on the part of the author, and contained some very clever reasoning. Some remarks on the source of the errors of phrenologists, and on the application of the science in promoting general, and especially domestic, happiness, were highly creditable to the author. Phrenology applied to education, and especially in the treatment of children who either have brains too active by nature, and hence liable to early mental exhaustion or idiocy—or, on the other hand, who, being slow at school, are apt to be condemned as hopeless dunces—formed the subject of the third essay, by Mr J. C. Forrest. The fourth, by Mr Uriel Rickards, was devoted to the harmony of Phrenology with morality and natural religion; in which the doctrines of the latter were shewn to be in strict accordance with the spontaneous dictates of the moral feelings enlightened by the highest intellectual faculties. These essays were listened to with the greatest attention, and elicited much applause. They were characterised by Mr E. J. Hytche, who presided, as displaying, not only extensive knowledge of the subject, but that high tone of moral feeling which the study of Phrenology tends to eliminate.

Phrenology and the Fine Arts.—Mr Green, the Professor of Anatomy at the Royal Academy of Arts, London, stated in a lecture at the Academy on 4th December 1845, that PHRENOLOGY IS USELESS TO THE ARTIST. The reason which was urged to support the dictum, viz., That however phrenologically correct a head might be painted with reference to the character to be expressed, as the public are ignorant of the science the display of knowledge would be of no avail,—is equally valid against the utility of anatomy to the artist. Mr Green is a learned, eloquent, and most accomplished man; but on this occasion he did not manifest that profound knowledge of Phrenology which he did of Sir Charles Bell's Anatomy of Expression.

Rd. C.

Phrenology and Cerebral Anatomy.—In a late number of the *Lancet* (December 19. 1845), there is the report of a paper purporting to have been read before the Medical Society of University College, which is, in reality, only a resumé of Dr Sharpey's annual objections, though the reporter, Mr Marshall, has added a supplementary one of his own, which is, that as Gall got his first inkling of Phrenology in his boyhood, before he knew anything of anatomy, he began on an "unphilosophical" basis, and these first impressions preceding his subsequent anatomical knowledge, biassed him in the wrong direction, so that his physiology preceded his anatomy. Now, if anatomy had taught anything of the functional nature of the cerebral convolutions, or had afforded anything but ground for the most vague conjectures before his time, there might be a trifling amount of force in the objection; trifling, I say, for it would have been nothing more, as Professor Quain, whose opinion is tolerably decisive, has publicly stated in his lectures, that he conceives Phrenology to be independent of mere anatomy, and that anatomical objections are of little or no weight, its truth being to be proved more by external observation than anything else, it being conceded that the brain corresponds closely with its osseous case; so that the empirical (I use the word in its extended sense) was here the only and correct method, as Gall could have made his discovery in no other way but by outward observation. And this method is the commencement of all sciences of observation, just as the empirical physicians and chemists, i. e. those who regarded facts and not theories, were precisely those who laid the foundations of their respective sciences.

CHARLES PRENTICE.

Sheffield Phrenological Society.—The opening lecture of the session was delivered on Monday evening, 13th October 1845, in the Cutlers' Hall, by Dr Thompson. It will be remembered that Dr Thompson has delivered two previous lectures, shewing how the state of childhood, youth, and mature age, confirmed the theory of Phrenology. [These are briefly reported in the *Phren. Journ.*, xviii., 11, 320.] On this occasion, he chose the remaining part of the subject, the decay of the mental and physical powers of man in old age. After recapitulating the purport of his former lectures, Dr Thompson went on to remark, that, in the latter part of life, it was not only difficult but dangerous to make any unusual mental effort, as it was likely to be followed by imbecility. With the mental as with the physical powers, those most severely taxed were ordinarily the first to decay. He had, on a former occasion remarked, that the reasoning powers were the latest to develop themselves, and were the first to decay. The passion of love, the development of which was attended with an extraordinary mental development, was, in its decline, followed by a rapid decay of the bodily and mental powers. It was proverbial that poetry and love declined together. This the lecturer confirmed by a reference to the labours of our poets, shewing that age was not the period for the production of any work marked by originality. They heard of some old men learning new languages; they also heard the same things of children; and he apprehended that, in the former case as in the latter, the amount learned was very small. The lecturer refuted entirely the assertion of Mr D'Israeli, that literary pursuits only retained their charms in old age, and renewed the fire of youth. There had been cases of unusual vigour in old age, just as some men had lived to a hundred years of age and upwards. This did not invalidate the law that 70 or 80 was the ordinary term of life. There had been cases where very old men married and had children, as there were other cases of premature decay. But the exception on both sides

only proved the rule. In the first stages of old age, the character retained more or less of the features of mature age. But by degrees the characteristics of age developed themselves. As the higher faculties declined, the lower preponderated. In old age were reproduced the petulance, stubbornness, and selfishness, which were found in childhood. The timidity of infancy revived in old age. Young men could not bear the caution induced by age; while the old men wondered that men would never grow wiser, and that their experience and teaching produced no effect in preserving youth from its usual errors. The timidity of age gave rise to constant distrust, and, more truly than conscience, it made "cowards of us all." Age, too, was prone to policy which overreached itself,—was vacillating and indecisive. Age was less subject to madness than maturer years. Age, like youth, had its spectres. It peopled the elements with mysterious powers, and the enlightened reverence with which men were capable of contemplating nature and its Author degenerated into superstition and credulity. With pardonable vanity and self-conceit, the aged delighted to dwell on the achievements of early life. Age relied on authority, and was prone to denounce as unwarrantable innovations all measures of reform. All great changes were produced by the efforts of the young and vigorous, who pushed boldly on, regardless of the predictions of ruin, and the warnings of authority, with which they were encountered by age. Language was one of the latest faculties to decay, and was employed in that garrulity which was common to age. The passion for idle decorations in youth recurred in age; and the weakness in the one case demanded the same indulgence as in the other. Age felt with peculiar keenness any withholding of marks of respect and deference, and was displeased by any imaginary neglect. There was an increased activity of the selfish feelings, and of the disposition to acquire and to hoard. Dr Thompson supported his remarks by quotations from many authors ignorant of Phrenology; and remarked that he did so, that it might be apparent he was speaking not only the language of Phrenology, but of experience. Carefulness, parsimony, penuriousness, and finally avarice, were common in age. The former strength of the intellect was no barrier against this. Indeed, the more active the mind had been in its maturity, the more surely would it yield to one of the lower faculties, or become entirely imbecile. The extreme decrepitude at which protracted age arrived, was a state to which a man, in the maturity of his judgment, would esteem death a blessing. Many, on the approach of decrepitude, shewed great petulance, and the most trifling thing produced anger. The puerility of decrepitude, it was remarked, was one of the strongest signs of mental and physical decay. It was remarkable in how many cases age resembled childhood, so that, in some cases, life appeared to become a species of vegetation. Imbecility sometimes arrived at a total incoherency of ideas, and the only pleasure left seemed to be in taking food. In some cases, even the latter disappeared. The imbecility of old age did not depend on the decay of the senses. There were many cases where the senses were but slightly decayed, but the mind gone. The reason of this seemed to be, that overtaxed powers lost their force at the first touch of decay. Were there not a strict connexion of bodily and mental powers, both in development and decay, to what a deplorable and anomalous condition would man be reduced! In the spring of life, he was found to be tender, delicate, and frail; in the summer, hale and strong in body, bold and enterprising in spirit; in the autumn came the sere and yellow leaf; while the winter chilled and withered him. Thus generations came and went. Individuals perished, but the race remained. All who lived must look forward to changes, regular, progressive, and inevitable. It was fortunate for us that Na-

ture worked by unvarying rules, and with unfailing certainty. In the understanding of the laws consisted knowledge, and in the obeying of them wisdom. (Cheers).—Mr S. Eadon moved a vote of thanks to Dr Thompson, for his very able and impressive lectures. Such lectures had a tendency to improve and elevate man, and to urge him to study more fully the laws of his being.—Mr Roper seconded the motion, which was carried by acclamation, and briefly acknowledged by Dr Thompson.—*Sheffield Independent*, Oct. 18, 1845.

Paris.—M. Pecoul, a member of the Phrenological Society of Paris, and formerly a counsellor in the royal court of Martinique, has offered a prize of 1000 francs (namely, a gold medal of the value of 500 francs, and 500 francs in money) to the author of the best treatise on the sensations, and on the origin and formation of ideas in general, with reference to the doctrine of the functions of the brain (*le meilleur essai d'un traité des sensations, de l'origine et de la formation des idées en général, composé au point de vue de la doctrine sur les fonctions du cerveau.*) The essay is to be written in French, and must be transmitted, free of expense, before 1st October 1846, to the Society (à l'Athénée Royal, Rue de Valois, No. 2), who, at their annual meeting on 31st December 1846, will award the prize. The successful candidate will retain the property of his work, but be bound to publish it under the superintendence of the Society. A printed sketch of the manner in which the Society wishes the subject to be treated is in our possession, and will be lent to any intending candidate who may apply for it. The first paragraph states, that in requiring that the phrenological theory be reduced to the plan of a well known theory, that of Condillac, the Society particularly desires to exhibit in bold relief the immense progress which Gall and those who have adopted his method of investigation have made in a few years; in this way they think it will be rendered more evident that the work of their celebrated countryman "is defective only because he was ignorant of the organs or senses discovered by the immortal German physiologist and his disciples, but that his principal idea is true." So many topics are detailed in this prospectus, that the possibility of fitly discussing them all within the compass of an essay may well be doubted.

We observe, from the Proceedings of the French Academy of Medicine, that, on 23d September last, M. Voisin, physician of the Bicêtre Hospital, "read a philosophical discourse on the faculty of Self-Esteem."

Phrenology in America.—The New York papers describe a curious instance of the use of Phrenology. At the trial of a man, Van Steenburgh, for murder, a phrenological lecturer, Mr Stanley Grimes, "sat on the right hand of the counsel for the prisoner, and critically examined the faces, but more particularly the bumps on the craniums of witnesses while undergoing examination." His advice was taken as to the characters of the jurymen. "This is certainly," says the *New York Herald*, "one of the most novel, romantic, and funny proceedings we have yet heard of."—*From a Newspaper*.

Cast of Ebenezer Erskine's Head.—While Ebenezer Erskine's grave at Stirling was in course of being opened, a few days ago, to receive the remains of the Reverend Dr Smart, two skulls, with some bones, were exhumed. There was no doubt that one of these skulls was that of Ebenezer Erskine. A medical gentleman, on happening to pass, was requested to examine them. He immediately pronounced one of them to have been that of a female, and the other that of a male. That the

male's head was that of Ebenezer Erskine was evident, not merely from its being found in his grave, but also from an authentic document, which bears, that none were ever interred in that grave but Mr Erskine himself, and the wife of the late Reverend Robert Campbell. Her head was in a greater degree of preservation than his, she having been interred nearly fifty years after him. It occurred to two of the members of St John Street Congregation that the present was a fit opportunity to secure a cast of Mr Erskine's head. A competent person was immediately sent for, who succeeded in doing the business in a very accurate manner. Many of his admirers will doubtless be anxious to see it—a desire which, we understand, will by and by be gratified. We may just add, at present, that Mr Erskine's grave, with three others, which are also minutely noticed in the document above referred to, were originally intended for the ministers of his congregation. They were at first under the table-seats in the old church, but now lie beneath the first mound in the centre of the avenue conducting to the new church. No other graves are near them. The stone which covered his grave, and which was, of course, removed to allow the grave to be opened for Dr Smart, bears the following Latin inscription, with the English translation annexed:—"2 Junii 1754—Aetat. 74—Dormiit in Jesu—R. D. Ebenezer Erskine, officio pastorali, primo apud Portmoacenses 28, dein apud Stirlinenses 23, fidelissime functus. In aede hac sepeliri voluit, ut mortuus testimonium firmaret, quod dum vivus mordicus tenuit." "June 2, 1754.—Ye Rev. Mr Ebr. Erskine fell asleep in Jesus, in the 74 year of his age, having faithfully discharged the ministerial office, first in Portmoak 28 years, and then at Stirling 23 years. He inclined to be buried in this House, that when dead he might confirm the testimony which he held fast when alive."—*Stirling Journal*, November 1845.

Head of Thorwaldsen.—Dr Otto of Copenhagen has presented to the Phrenological Society a cast of the head of the celebrated sculptor Thorwaldsen, which was taken immediately after his death by Dr Otto and a very skilful cast-taker. We shall give an account of the measurements and development in a subsequent number.

Alleged Misrepresentation of Dr Spurzheim.—Mr Prideaux complains, in his rejoinder (*Phren. Jour.*, xviii. 365), that I confine my remarks to the Greek language. The reason for selecting the Greek is, that it contains all the tenses which are found in the French language, and more too; so that a reference to the Greek is virtually a reference to the French also.

I have, therefore, not abandoned my position in regard to the French language. I still affirm that all the conceptions of time of the Greeks and the French, as expressed in their languages, can be understood by the Germans and English, and accurately translated into their languages. I quite agree with Mr Prideaux, that the French imperfect *frappois* cannot always be rendered by *was striking*; and yet the assertion that *frappois* = *struck, was striking, and did strike*, is perfectly true. I have drawn attention to an example where the French word *ai* is rendered by *am*, and yet *ai* = *have* (xviii. 203). Such instances are numerous in all languages, and do not interfere with the great principle of equivalents. I did not, in my papers, or reply, enter upon the question of the tense-usage in any particular language, because that is apart from the subject: the question is, Can all the Greek and French time-signs be accurately rendered into English and German?

I considered it unnecessary to state, that the expressions *struck, was striking, and did strike*, are distinct forms of the English imperfect tense;

and that each, so far as time is concerned, is equivalent to the Greek *ιτυπτο*, and to the French *frappois*. There is, therefore, no inconsistency in the statement, in my reply (xviii. 291), that *ιτυπτο* = *was striking*, with the previous statement (xviii. 37) that *ιτυπτο* = *struck*, as both equivalents are forms of the English imperfect tense.

I considered it also unnecessary to state, that when the word *struck* occurs in a sentence, we know from the context whether it is the imperfect tense, or the aorist. And even those who are entirely ignorant of tense, know as well as we do whether the word, taken in connexion with the rest of the sentence, defines the time of the past action, or leaves it indefinite.

Comparative grammar is a profound study. The comparison of Greek and English time-signs requires more knowledge than can be gleaned from a reference to a paradigm of verbs in an English-Greek grammar. Every Greek scholar knows that the syntax must be studied in order to know the verbs in their applications as time-signs. And this study reveals to us the Greeks' conceptions of time. Now, if Mr Prideaux, instead of merely "turning to the paradigm of the active voice in an English-Greek grammar," had well studied the Greek time-signs in connexion with the Greeks' conceptions of time, he would not have committed himself by writing the fourth paragraph of his rejoinder. On the subject of time-signs, Harris' *Hermes* may be consulted with advantage, Tooke's *Diversions of Purley*, *Les Elémens de Grammaire Générale* par Sicard, and especially that most learned work of M. Cour de Gebelin, entitled "*Monde Primitif analysé et comparé avec le monde moderne, considéré dans l'histoire naturelle de la Parole; ou Grammaire Universelle et comparative.*"

The evidence which Mr Prideaux adduces to prove that the Germans have fewer time-signs, and consequently a less exact discrimination of time, than the Greeks, is inadmissible: I refer to his statement that Vosz used to say, that, when employed on his translation of Homer, "he was several times on the point of throwing his work in the fire, from vexation at the utter inadequacy of the German language to convey the nice distinctions in time of the original Greek." Now this is a mere idle anecdote, which is told in different ways. Mr Prideaux tells it of the Greek; I have heard it of the Latin. Mr Prideaux tells it as a difficulty in finding adequate time-signs; I heard it of finding time-signs equally terse. I am acquainted with Vosz's Virgil, but not with his Homer. Vosz has wonderfully preserved, in his version, the order and arrangement of the ideas, the energy of style, the terseness with the rhythmus and cæsuras of the original language, as the following example, the *Battle of the Bees*, from the Fourth Georgic, will evince:—

" Sin autem ad pugnam exierint; (nam sæpe duobus
Regibus incessit magno discordia motu.)
Continuòque animos vulgi, et trepidantia bello
Corda licet longè præsciscere: namque morantes
Martius ille æris rauci canor increpat, et vox
Auditor fractos sonitus imitata tubarum.
Tum trepidæ inter se coeunt, pennisque coruscant,
Spiculaque exacuunt rostris, aptantque lacertos.
Et circa regem atque ipsa ad prætoria densæ
Miscentur, magnisque vocant clamoribus hostem.
Ergo, ubi ver nactæ sudum, camposque patentes,
Erumpunt portis: concurritur: æthere in alto
Fit sonitus: magnum mixtæ glomerantur in orbem,
Præcipientes cadunt: non densior aëre grando,
Nec de concussâ tantum pluit illic glandis;

*Ipsi per medias acies, insignibus alia,
 Ingentes animos angusto in pectore versant;
 Usque adeo obnixi non cedere, dum gravis, aut hos,
 Aut hos versa fugâ victor dare terga subegit.
 Hi motus animorum atque hæc certamina tanta
 Pulveris exigui jactu compressa quiescunt."*

GEORG. IV. 67.

"Doch wenn jene zur Schlacht ausziehn; (denn oftmals empöret
 Zweener Könige Brust die Gewalt unbändiger Zwietracht)
 Gleich auch kann man des Volks aufwallenden Muth und vor Kampflust,
 Bebendes Hertz schon lange vorherschaun; denn es ermuntert
 Kriegerischer Klang, wie des Erzes, die Zauderer, und ein Gesumme
 Tönt umher, nachahmend den schmetternden Klang der Trompete,
 Rings dann strömen sie hastig herbei, mit den Fittigen schimmernd:
 Schärfen den Stachel mit Macht am Gebisz, und strengen dies Muskeln
 Und um den König geschaart und das ragende Zelt des Gebieters
 Wühlen sie all', und rufen den Feind lautdrohend zur Feldschlacht,
 Drum, wenn in offenes Feld der Frühlingsbläue die Heerschaar
 Stürzt aus des Lagers Thor; wenn man anrennt; hoch in dem Aether
 Ausruf tönt; das Gewühl weitkreisend sich drängt, und Erschlagner
 Menge den Lüften entfällt: nicht häufiger rasselt der Hagel,
 Noch von geschüttelter Eiche so dicht ein Regen von Eichel'n;
 Jene selbst durch die Reihen der Schlacht, mit leuchtenden Flügeln
 Drohn, erhabenen Muth im engen Busen bewegend,
 So durchaus nicht zu weichen gefaszt, bis mit grosser Gewalt hier,
 Oder auch dort, der Sieger gewendete Schaaren daherscheucht.
 Solch ein Kampf der Empörten und so ausharrender Eifer
 Ruht, von wenigem Staubes besprengenden Würfe gebündigt."

This translation exhibits the power, terseness, and flexibility of the German language. Those who are unacquainted with Vosz's translations will be pleased with this specimen of his great accuracy. I have never met with a translation in which the original is so exactly reflected. The ability to render the time-signs of the Latin and Greek into German may be ascertained by reference to the German versions of the classics. The boasted superiority of the Greek time-signs is not, that they are more precise in marking time, but that they are more elegant signs than the German and English.

To these remarks on Mr Prideaux's rejoinder, I beg to add a re-statement of the question at issue, and shall close my reply with a brief specification of some consequences which flow from Mr Prideaux's position.

In the *Phrenological Journal*, vol. xviii., p. 37, I controverted the opinion of Dr Spurzheim, that the Greeks and French have more accurate notions of time than the English and Germans. Dr Spurzheim's opinion is avowedly based on the greater number of tenses in the Greek and French languages than are found in the English and German. Now, it is familiarly known, that the English phrases which are popularly termed tenses, are time-signs. I attempted to shew, that those phrases and the tenses together constitute a system of time-signs which are equivalent to the Greek tenses. Mr Prideaux asserts, that for some of the Greek and French tenses we have no equivalents in English and German; and hence the inferior discriminations of time of the two latter nations. Mr Prideaux, however, has not thought fit to cite an example of a French time-sign which cannot be translated into English or German. Mr Prideaux is an excellent French scholar, and would no doubt have backed his assertion with an example if he could have found

one. Of Mr Prideaux's appeal to the Greek I have spoken, and do not wish to add more.

To maintain that we cannot express in English all the nice distinctions of time which were expressed by the Greeks, is to affirm that some of the conceptions of time which are expressed in Greek authors, cannot be accurately rendered into English. And if it be asked, Why? the answer must be, "Because we have not the time-signs in our language." And why have we not the time signs? "Because we have not the conceptions of time, which those nice discriminations gave the Greeks." Now, if the English cannot appreciate those distinctions of time which are found expressed in Greek—how came they to know that they are expressed in the Greek? If the English cannot appreciate the thing (*i. e.* the distinctions of time) on the one hand, and cannot translate the Greek by an English equivalent on the other, it remains to be shewn how Mr Prideaux, and his classical friends, know that the Greek expresses anything about time. It appears to me that such a Greek word would be to Englishmen a mere empty sound, unconnected with anything in nature as its significate, and as isolated from any sense that we can discover, as is the Hebrew word סֵלָה (*Selah*), which occurs so frequently in the Psalms.

It remains also to be shewn how Herr Vosz, with the asserted absence of certain time-signs in his, the German language, and his non-discrimination of the thing (*i. e.* the conception of time), arrived at a knowledge of the signification of the Greek time-signs which he could not translate.

And it remains also to be shewn how the English and Germans, in an asserted similar condition with regard to the French language, arrived at a knowledge of the signification of the French time-signs which they cannot translate.

Instead of idly occupying space and time with the endeavour to exhibit a fancied inconsistency in my statement of the English equivalents to the Greek imperfect tense, Mr Prideaux should have cited some Greek and French time-signs which cannot be translated into English and German; and he should further have shewn how he arrived at the signification of the word. And when Mr Prideaux is ready with such an example, accompanied with that explanation, he will be entitled to a further reply on the subject.

RICHARD CULL.

Differently coloured Cloths distinguished by a Blind Man.—Dr John Black of Glasgow relates, in the *Medical Times* (18th October 1845, p. 70), that on 18th February 1841, he was requested to visit Mr J. Thomson, a blind man, who was suffering from bronchitis, and who died on the 18th of September of the same year, in consequence of tumours on the head. The following curious particulars are added to the medical report of the case:—

"Had Mr Thomson's history been faithfully delineated by an able pen, it would have been equally interesting to the metaphysician, the physiologist, and the public generally.

"He lost his sight, when twenty months old, by a second attack of small-pox; notwithstanding this, he could with great ease distinguish one colour from another, refuting that common saying, 'that such a one is no more able to judge of this or that thing than a blind man is of colours.' He could impart all kinds of colours to all kinds of cloth, and, what is still more remarkable, all *shades* of colours. He was by trade a dyer, and followed that occupation, unassisted, with great success for a period of fifty-five years.

"The drysalter that supplied him with dye stuffs says no man was a

better judge of their qualities than Mr Thomson. I inquired how he was able to give lighter and darker shades to his goods. This he did by submitting them to a longer or shorter process—and how he was able to distinguish the goods that were clouded from those that were uniformly coloured? ‘That is more than I can tell,’ said he, and I believe he spoke the truth when he said so; for when one of the external senses is destroyed, or constitutionally wanting, the rest, in consequence of frequent employment, are in most cases endowed with an extraordinary degree of energy, as if the share of sensorial power, naturally belonging to the lost organs, was distributed among the rest and modified to their respective uses; and the facility with which Mr Thomson managed every department of his intricate business, is an interesting example of what has just now been stated. He seemed to understand the common rules of perspective. After reading to him a description of a landscape, I asked him if he saw it in his mind’s eye? He said, ‘Perfectly well. The writer first brings into view a stream, then beyond the stream is a level plain, which is bounded by a circle of high mountains;’ at the same time stretching out his arms to different lengths, which represented the distances of the different objects mentioned. This strengthens a declaration of Professor Reid’s, ‘that sight discovers almost nothing which the blind may not comprehend.’ I informed him that if his sight could be restored by an operation, the objects which he conceived to be at a distance would appear to his eye as all on one line, and he would have to learn only by experience to judge of their distance. But this doctrine he was slow to believe. I informed him that the patients who were couched by Cheselden, Wardrop, and others, thought everything they saw touched their eyes; ‘It may be so,’ says he; ‘but, as this is a lesson I will never need to learn, I will say nothing more on the subject.’

“Mr Thomson’s life shews what patience and perseverance will accomplish. His parents died when he was young, and though the greatest ‘object’ left in a large family, yet without his aid they would have been left destitute. He had an excellent constitution, was temperate in his habits, of a cheerful disposition, and fond of music.”

We should be glad to receive, from our Glasgow friends, any farther particulars which can be ascertained respecting Mr Thomson’s powers of sensation. He does not seem to have perceived *colours*, though able to distinguish by touch differently coloured or shaded *cloths*; and this discrimination seems to have been rendered possible by each colour and shade giving a peculiar *feel* to the cloth.

Precocity of Intellect.—Having watched the growth of the young mind a good deal, I am less and less in love with precocity, which, indeed, is often a mere manifestation of disease—the disease of a very fine, but very weak nervous organization. Your young Rosciuses, and all your wonders of that kind, generally end in the feeblest of common-place. There is no law, however, precise and absolute in the matter. The difference of age at which men attain maturity of intellect, and even of imagination, is very striking. The tumultuous heat of youth has certainly given birth to many of the noblest things in music, painting, and poetry; but no less fine productions have sprung from the ripeness of years. Chatterton wrote all his beautiful things, exhausted all hopes of life, and saw nothing better than death at the early age of eighteen. Burns and Byron died in their thirty-seventh year, and I think the strength of their genius was over. Raphael, after filling the world with divine beauty, perished also at thirty-seven; Mozart earlier. These might have produced still greater works. On the other hand, Handel was forty-eight before he “gave the world assurance of a man.” Dryden

came up to London from the provinces, dressed in Norwich druggot, somewhat above the age of thirty, and did not even then know that he could write a line of poetry. Yet what towering vigour and swinging ease all at once in "glorious John!" Milton had, indeed, written his *Comus* at twenty-six; but blind, and "fallen on evil days and evil tongues," he was upwards of fifty when he began his great work. Cowper knew not his own might till he was far beyond thirty, and his *Task* was not written till about his fiftieth year. Sir Walter Scott was also upwards of thirty before he published his *Minstrelsy*, and all his greatness was yet to come.—*Aird's "Old Bachelor."*

Difficulty of ascertaining the Mental Character of Foreign Nations.—We ought to be infinitely circumspect in pronouncing on the moral or intellectual dispositions of nations, from which we are separated by the multiplied obstacles which result from a difference in language, and a difference of manners and customs. A philosophical observer finds what has been printed in the centre of Europe, on the national character of the French, Italians, and Germans, inaccurate. How, then, could a traveller, after merely landing in an island, or remaining only a short time in a distant country, arrogate to himself the right of deciding on the different faculties of the soul, on the preponderance of reason, wit, or imagination among nations?—*Humboldt's Political Essays on the Kingdom of New Spain*, chap. vi.

Books received.—*Mesmeric Experiences.* By Spencer T. Hall. London: Bailliere. 1845. Post 8vo, pp. 103.—*Stray Thoughts, in Prose and Verse.* By E. J. Hytche. London: Darton and Clark. 1845. 18mo, pp. 72.—*The British and Foreign Medical Review*, No. XL., Oct. 1845.—*The Zoist*. No. XI., Oct. 1845.—*Essays on Human Rights and their Political Guaranties.* By E. P. Hurlbut, Counsellor at Law in the City of New York. New York: 1845. 12mo, pp. 219.—*The American Phrenological Journal.* By O. S. Fowler. Sept. and Nov. 1845.—*The Phrenological and Physiological Almanac for 1846.* By O. S. and L. N. Fowler, New York.—*Zeitschrift für Phrenologie*, Nos. VIII., IX., and X.; Dec. 1844, and March and June 1845.—*The Phrenological and Psychological Annual for 1846.* Edited by D. G. Goyder, Glasgow.—*Explanations: a Sequel to "Vestiges of the Natural History of Creation."* By the Author of that work. London: J. Churchill. Post 8vo, pp. 198. 1845.—*The Medical Times*, weekly.—*Report of the Crichton Royal Institution for Lunatics*, 1845.

Newspapers received.—*Edinburgh Chronicle*, Oct. 11.—*Cork Constitution*, Oct. 14.—*Leamington Spa Courier*, Oct. 18.—*Troy Northern Budget*, Sept. 23.—*Sheffield Independent*, Oct. 18.—*Pilot*, Nov. 10.—*Banner of Ulster*, Dec. 2.

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NEW SERIES.—No. XXXIV.

I. MISCELLANEOUS PAPERS

- I. Phrenology—its Nature and Uses: An Address to the Students of Anderson's University, at the opening of Dr Weir's First Course of Lectures on Phrenology in that Institution, January 7. 1846. By ANDREW COMBE, M.D.***

GENTLEMEN—On seeing a stranger present himself before you to deliver a lecture introductory to a Course on Phrenology, it will naturally occur to you to ask, Why does he occupy the place which belongs of right to Dr Weir? The answer to this question will be found in the following brief history of the origin and progress of Phrenology, and of the events which led to the institution of a Lectureship on the subject in this University.

From the earliest dawn of science, the attention of anatomists and physiologists, and, I may add, of philosophers also, has been earnestly directed to the study of the brain and the nervous system. Enveloped in obscurity as these important organs were, facts of daily and hourly occurrence nevertheless forced the conviction upon the minds of all reflecting men, that, whenever their functions should be discovered, they would be found to fulfil the very highest purposes in the economy of man. Even the most cursory observation was sufficient to shew, not only that the brain is the seat and centre of sensation, voluntary motion, thought, and feeling, but that it exercises a paramount, although often indirect, influence over the whole bodily organization. Under the pressure of deep grief, for example, every function is impaired, and the powers of life become more and more en-

* In consequence of the infirm state of the author's health, this Address was delivered by his brother Mr George Combe.

feebled, till death at last closes the scene, and the individual is said to have died of "a broken heart." Under the influence of the strong passion which accompanies maniacal excitement of the brain, the action of the heart is characterised by unusual violence, the circulation becomes rapid and tumultuous, and the whole system is so instinct with energy, as almost to defy restraint. Under the calmer and more equally diffused excitement of hope and joy, the different bodily functions are raised in tone, and so agreeably stimulated, that all the operations of life are carried on with a vivacity and ease which at once enliven existence, and form the best safeguards against the inroads of disease. A blow on the head, or a powerful narcotic, on the other hand, may, by disturbing the action of the brain, produce absolute insensibility of both body and mind, and lay prostrate the highest genius. The bursts of mental power and extraordinary bodily strength developed during the delirium of fever, or under the use of wine or spirits, form equally striking and instructive examples of the predominant influence of the brain in the animal economy; and its intimate connexion with the mind is perhaps nowhere exhibited with greater clearness, than in the regularity with which the different mental powers become developed and advance through the different stages of maturity and decay, in exact proportion as the brain itself passes from the imperfect development of infancy through *its* stages of maturity and decay.

These, and similar facts, all leading to the same conclusion, have forced themselves upon the attention of mankind in all ages and countries, and they form the groundwork of the almost universal conviction that the brain is, in some way or other, the seat or organ of the mind. An enlightened curiosity, however, does not stop short at this vague and general proposition—it seeks to discover farther under what conditions this association of mind with brain exists. It seeks to know whether, in producing and giving expression to the varied and complicated phenomena of thought and feeling, the brain acts as a whole or as an aggregate of many parts, each subserving a particular sense or faculty. For thousands of years philosophers have laboured to penetrate this mystery, but laboured in vain; and yet, in every succeeding age, the constant recurrence of the same phenomena has kept alive in its fullest force the conviction, that the discovery of the functions of the brain and nervous system would be fraught with important advantages to science and to mankind; both by explaining some of the profoundest mysteries of our being and position, and by affording principles of the highest utility for our future progress and

improvement. Under this stimulus, inquiry never became apathetic, even when it seemed most unpromising. If it failed of success, this was not from want of zeal, talent, or perseverance, on the part of those engaged in it. The failure, as will be afterwards pointed out to you by my friend Dr Weir, arose solely from pursuing methods of research which, because they were founded on a wrong principle, were incapable of leading to success. Not suspecting or perceiving where the error really lay, one physiologist after another, either entered upon the beaten path of his predecessors, without attempting to remedy the defects of method which had misled them,—or he *invented a new theory*, bearing the impress, not of nature, but of his own imagination, and of course failed in his turn to arrive at the truth. The anatomists also, from no lack of talent, zeal, or industry, but purely from a similar want of a guiding principle, expended their time in nearly profitless labour. Instead of attempting to trace the natural relations of the parts of the brain to each other, they continued for centuries to cut it into slices, and thus *destroyed, by their own act*, the very structure they wished to examine—a proceeding, the only parallel to which would be to examine the anatomy of a limb by slicing it transversely like a round of beef! Failing to arrive at any useful result by such destructive methods, they, too, had recourse to their imagination, and enlivened the dryness of their researches by the discovery of supposed resemblances of parts of the brain to natural or artificial objects, and believed that in giving names significant of these most grotesque resemblances, they were advancing the cause of science. Hence the learned application of the terms *nates* and *testes* to the quadrigeminal bodies. Hence the *aqueduct* of Sylvius, the *bridge* of Varolius, the *writer's style* or *calamus scriptorius*, and other equally unmeaning designations. From the same imaginative source was derived the fancy which gravely seated the soul in the pineal gland. Hence also the various "spirits" with which it pleased philosophers at different times to fill the ventricles of the brain! In reflecting on all these things, however, let us not give way only to a smile of ridicule or contempt. Seriously considered, these very vagaries indicated the strong and constant desire to arrive at the discovery of truths which were felt to be important. They sprang from no innate love of absurdity, but simply from zeal and activity of mind operating without a principle to guide them through the labyrinth which they sought to penetrate. If a man, set down in a new country, wanders in a direction the opposite of that in which he wishes to go, it is no proof that he is destitute of the power of motion. The greater,

indeed, his power of walking in such circumstances, the farther will he be likely to go astray ; but provide him with a sure guide, and then see how vigorously and safely he will advance ! It is the same with the anatomist and physiologist ; set them down without a guide to study the unknown regions of the brain and nervous system, and the greater their talent, the farther will they be liable at times to wander from the way of truth. But once provide them with a guiding principle, and every step will then bring them nearer and nearer to the goal.

The more, indeed, we consider the nature of science and the history of the past, the more manifest does it become, that it has been the want of a sound method of investigation, and not any inherent difficulty in the subject, or any marvellous complexity of function, which has hitherto constituted the chief obstacle to success. Nature's laws and operations rarely remain wholly inaccessible to well directed and persevering inquiry, and they seem to be a maze of confusion and contradiction only when considered in a wrong point of view, or when examined apart from their natural relations to each other. When correctly understood, they generally present an aspect of remarkable simplicity. For a similar reason, many of the plainest of the laws or phenomena of nature appear the very image of incongruity to the untutored savage, who knows not how to trace the principle which binds them into harmonious connection. It is precisely thus with the anatomist of the brain and nervous system. If he has no sound principle to direct him where to begin, and how to proceed, many of his results must necessarily appear to him perplexing, incongruous, and inexplicable. By a lucky chance he may hit upon useful truths, which will remain like landmarks amidst the waste of error over which he has fatiguingly wandered ; but he will do little to throw light upon the general scheme of Nature, and will often leave even his surest facts a subject of doubt to those who succeed him, simply because he cannot present them in harmonious connection with any other ascertained truths.

Here, then, is the source of the barrenness of results which has, in times past, so signally characterized most of the researches which have been made into the structure and functions of the brain and nervous system. False methods of inquiry, and not any insuperable difficulty in the subject, have been the causes of failure ; and it is most important that at this your outset in a new study, you should fix your attention strongly on this fact, and satisfy yourselves of its foundation. If the method which Gall has followed be really superior to any hitherto in use, it becomes no longer wonder-

ful that he should have succeeded in unfolding, to a greater extent than his predecessors, not only the real structure of the brain, but many of its most important uses ; or that he should have put you in possession of means whereby you may, in your turn, correct his errors, and improve what he and his followers may have left imperfect. I shall, in a subsequent part of this lecture, explain his method ; but, in the mean time remark, that if I shall assign adequate causes for so many centuries of failure by other physiologists, and for the success which has attended the labours of Gall, it will follow, as a matter of course, that any condemnation of his discoveries, by those who have never zealously pursued his method, but derived their knowledge wholly from methods proved to be utterly inadequate, must be held, in the eye of reason, as of scarcely higher value than would be the hostile opinion of any uneducated man regarding any disputed point in modern chemistry, optics, or electricity. Ignorant as such an opponent must be regarding the uses of the brain, it is impossible that he *can* have anything except theory or early prejudices to oppose to the facts of Phrenology ; and for these I have no respect as sources of evidence. I am as much disposed as any one to yield deference to authority, or to opinions based upon certain and positive knowledge, however much they may militate against my own prepossessions ; but where mere opinion is brought against what I know, from direct, careful, and repeated observation, to be *clear* and *positive facts*, no matter how eminent the source of the opinion may be, I stand firm and unmoved, because Nature is at my back, and I have the fullest assurance that she commits no mistakes, and is never inconsistent ; and I know that, on appeal being made, she will be found to speak the same language to-day as yesterday, or as a thousand years ago, and to bear out all I have advanced, if I have really been accurate in my observations.

To place this argument before you in its full force, it would be necessary, if your time permitted, to expose, in some detail, the inherent defects of the different methods of investigation resorted to before the days of Gall. This will be done more fully at a subsequent part of the course, by my friend Dr Weir. In the mean time, it will be enough for my purpose to state, that anatomists have tried to discover by dissection the uses of the different parts of the brain ; but unaided examination of structure has never yet been sufficient to reveal the function of an organ ; and, even if it did, the structure of the brain is, or was till very lately, as little known as its uses. We might dissect the optic nerve till the crack of doom, without being enabled, by that means alone,

to demonstrate that its use is to convey visual impressions from the eye to the mind. It is by observing the concomitance of the faculty of vision with the existence and development of the nerve, and the effects of its diseases in destroying sight, that we arrive at the discovery of its function. *Having once made this discovery*, anatomy steps in to confirm its truth, by shewing its consistency with the relations of the nerve to the eye on the one side, and the brain on the other. It is the same with the nerve of hearing, with the nerves of sensation and motion, and, indeed, with every part of our bodily structure. We might dissect them all for centuries, apart from observation of the living phenomena, without being thereby enabled to discover their uses. A familiar proof of this is to be found in our still remaining ignorant of the functions of the spleen and thyroid and mesenteric glands, and of parts of the brain itself, of which the structure is now pretty well ascertained. Even the structure of a muscle, plainly as it speaks *after* we perceive its function, does not, of itself, suffice to teach us that its office is to contract. It is by observation of the actual concomitance of contraction and structure that we first ascertain the fact. Dissection may prove the *compatibility of function and structure*, *after the function is found out by observation*, or disprove an alleged function, by shewing its incompatibility with *well ascertained* structure; but, in the case of the brain, neither of these principles can be very safely applied, because the structure itself is even yet too imperfectly known to lead to positive results; and hence, among those who reject the discoveries of Gall, there is to this hour no agreement whatever regarding the functions of the different parts of the brain—whereas, if structure revealed function, there would be unanimity amongst them.

Metaphysicians, on the other hand, have attempted to solve the problem of the cerebral functions by the aid of *Consciousness*; but their failure has been equally signal. So far from revealing to us the uses of different parts of the brain, consciousness does not even reveal its existence. We know that there is *something* within the skull, but we have not a trace of information from consciousness what it is, how composed, or what its form. If it had been possible to discover the functions of the brain by reflecting on the phenomena of our own consciousness, they would not now have continued to prove as great a stumbling-block to the modern as they did to the ancient metaphysicians; and I need only appeal to yourselves, and ask what amount of information you can derive regarding the operation of your own brains, or of any internal function, from consciousness alone. Did con-

sciousness enable any one to anticipate Harvey's discovery of the circulation of the blood? or does it throw any light on the phenomena of digestion or of respiration? None whatever. We know that we breathe and digest, but we are left to find out, by observation, both the manner and the mechanism; and it is the same with the brain. We have a kind of consciousness, that we think and feel by means of our heads; but none whatever that our skulls contain brain, much less of the uses of its component parts, or of its particular uses even as a whole.

The only other channel through which information has been sought, and sought in vain, is the study of the effects of injuries and diseases of the brain, and the effects produced by mutilating the brains of animals. Dr Weir will, by and by, demonstrate to you the inadequacy of this method also, to furnish the information required. Suffice it for me to say, that it is not amidst the suffering of disease, or the general disturbance of system caused by wounds or mutilations, that healthy regularity of function is to be found. Where any part of the nervous system is concerned and suffering is excited, general results become too much mixed up with those which are local, to admit of being properly discriminated; and, accordingly, not one new fact of any radical importance to the physiology of the brain in its connection with the mind has yet been demonstrated by this method of inquiry, notwithstanding the many and persevering efforts made in recent times to turn it to account; and, except for the light thrown upon its results from other quarters, many of them would remain before us nearly as destitute of meaning as at first.

Such, then, was the state of the physiology of the brain down to the time of Dr Gall, and such continues to be essentially its state even now, among those who reject his discoveries. If, therefore, any adherent of the old methods of inquiry should happen, in your presence, to enlarge upon the demerits of Phrenology or the presumption of its disciples, you need be under no alarm for the consequences; you may at once turn the attack against himself, by requiring him to shew what he can put in its place. If he has made any discovery of his own of the functions of the brain, he must be a very modest man indeed, to hide its brilliancy under a bushel; for, as yet, nobody has claimed any such merit. If, therefore, Phrenology contain *any portion* of truth, science can only gain by its candid and unprejudiced examination; and you are interested in exact proportion to the amount of truth which it embodies, in not rejecting it heedlessly or unexamined.

But what, then, you will ask, is this boasted method by

which Gall has derived such a rich harvest from a field which others have cultivated with so little success? The answer is simply, that, in investigating the functions of the brain, he has followed the same principle which, applied to other organs, has led to the discovery of their functions, but which, from various causes, had never before been systematically applied to the brain. When the physiologist wished to ascertain the function of any particular organ of the body, he did not rest satisfied with examining its structure, and speculating on the purposes for which that structure seemed in his eyes to be adapted. He began by direct observation, and watched what kind of function *appeared during life as the invariable accompaniment of the presence and action of that particular part*; and, by repeated and careful observation, he at last succeeded in discovering the functions. The knowledge thus obtained was afterwards verified, confirmed, and completed, by the examination of structure, and the observation of the effects of its injury or diseases.

It was by this method that the liver, for example, was proved to be the secreting organ of the bile, many centuries before its true anatomical structure was ascertained. This fact being once arrived at, its truth was confirmed by observing, further, that bile is met with only in animals in which a liver also is found, and that its secretion varies in amount with the development of that organ, and is affected by its diseases. The same with the kidneys: observation, during life, of the concomitance of organ and function, is the *first source* of all our authentic knowledge of the part they perform in the animal economy; and it is only *after* having thus ascertained that they serve to secrete the urine, that we become enabled to extend and complete our information, and to trace the true relation of structure to function. Even of the muscles, our knowledge has been acquired in the very same way: we *observe*, in the living body, the concomitance of muscular motion with muscular fibre, and thence infer that its function is to execute motion. Here, then, is the very principle which Gall has succeeded in applying to the elucidation of the functions of the brain; and he was led to its adoption by an accidental observation at school, of the concomitance of a particular kind of talent with a peculiar appearance of the eye, which he found afterwards to be caused by the development of a particular part of the brain. At school, at college, and in many other places, and under wholly different circumstances, the same concomitance of talent with development of brain came under his notice so frequently, as to arrest his attention to the probable or possible success which might attend the application of a similar mode of discovering

a connection betwixt other mental talents and the development of other portions of the brain. In this respect Gall resembled in no small degree the illustrious Newton, who, from the accidental fall of an apple at his feet, was led to the discovery of the law of gravitation. Like Newton, having once obtained the clue, Gall never lost his hold of it as a guide to discovery; and he found it, on trial, to prove like a lamp to his feet, in the investigation of nature.

It was by the persevering application of the method of inquiry which accident had thus suggested to him, and not, as many suppose, by an effort of imagination, that Dr Gall was at last enabled to place the physiology of the brain upon a solid foundation, by demonstrating, *first*, that the brain is an aggregate of many different parts, each serving for the manifestation of a particular mental faculty; and, *secondly*, that, *all other conditions being equal*, the size of each of these cerebral organs is an index of the power of its function. These two propositions, as will be afterwards fully explained to you by Dr Weir, constitute the distinctive or fundamental principles of Phrenology. The first of them, however, is not new. The impossibility of reconciling actual phenomena with the notion of a single organ of mind has, for many centuries, suggested the probability of a plurality of organs; and it is stated, that, influenced by this incompatibility, the great Haller, among others, "*felt a necessity for assigning different functions to different parts of the brain*;" just as, for a similar reason, many physiologists felt a necessity for inferring that the nerves of sensation and motion must be different. But it remained for Dr Gall to *demonstrate* the fact of a plurality of organs in the brain; just as it did for Sir Charles Bell to demonstrate the distinction between the different kinds of nerves; and before the conclusion of this course of lectures you will be better able to appreciate the merit and consequences of this demonstration than you are now. At present I need only allude to an objection sometimes inconsiderately made by medical men against the possibility of the existence of any such cerebral organs—namely, that, on looking at the brain, no visible separation between its constituent parts can be detected, such as we see in the organs of the five senses. On examination, the whole force of this objection is found to depend on overlooking the very different nature and functions of the internal and external faculties. The organs of the five senses require to be distinctly isolated from each other, because, from their being the media of communication with the external world, each requires a distinct apparatus to place it in harmony with the kind of impressions it is destined to receive and transmit to the brain.

The eye, for example, being adapted in structure to the rays of light, is unaffected by impressions of sound; and the ear, being adapted to atmospherical vibrations, is unaffected by the rays of light; and hence each of the senses has, and must necessarily have, a specific apparatus for itself, so distinct in its mechanism from that of the rest, as almost to preclude the possibility of the organs being grouped together in close connection with each other. With the organs of the internal faculties, however, no such necessity exists for their absolute separation. On the contrary, their complete isolation would serve only to impede that consentaneity and harmony of action among several of them which is required in almost every mental operation. Accordingly, the objectors forget that, even in the case of the nerves of sensation and motion, where simultaneousness of action is often indispensable to the due regulation of our movements, a still more intimate connection of fibres of different kinds, and performing distinct functions, exists for a similar purpose; and that it was precisely this apparent blending of two sets of nervous fibres which so long misled physiologists to the belief that the nerve was a single organ, consisting of fibres serving equally for sensation and motion. This hasty and erroneous inference was arrived at in the face of many opposing physiological phenomena, solely because, on examining the really compound nerve, no visible distinction could be traced between its two sets of fibres; and it remained for Sir C. Bell, in the nineteenth century, to demonstrate their actual existence, and thus to reconcile their structure with the functions which they were ascertained to perform. The objectors forget, also, that a similar peculiarity characterizes the spinal marrow, and was equally the cause of the obscurity in which the distinct functions of its constituent parts were so long involved. In all ordinary circumstances sensation and motion, irritation and reflex action, are most intimately associated; because the one is the exciting cause, and, in one sense, the director of the other: but on some occasions, and more especially in morbid or abnormal conditions of the system, their distinct and independent operation becomes so evident as to be explicable only on the idea of a corresponding plurality of nerves.

The very same principle applies to the different cerebral organs which serve to manifest the different primitive faculties of the mind. In most mental operations, associated action of several of the primitive faculties is almost indispensable to the accomplishment of their object; and to admit of this at once consentaneous and combined action of several faculties in themselves distinct, their cerebral organs must be

in intimate connection with each other ; and, accordingly, such is found to be the order of nature.

But, it may be argued, if the internal faculties of the mind generally act in combinations of a greater or less number, does it not follow that the brain must, as a single organ, serve for the whole of them, instead of each having a part of the brain appropriated to itself ? This conclusion, however plausible it may seem, would be as fallacious as the similar inference of the identity of the nerves of sensation and motion, from the general fact of their combined and consentaneous action. It is true that several of the faculties are generally active at the same time ; but their elementary distinctness and independence of each other are shewn, not only by their different degrees of strength bearing no constant relation to each other, but by the ever-varying combinations, in number and in kind, in which they manifest themselves. For if they were all general results, of one general power, operating through one organ, there would be in all instances a fixed proportion in the manifestations of feeling and thought, and a definite order in their sequence and arrangement, in harmony with the unity of action of a single organ. This is not the occasion on which to enter more fully into the objection ; but I trust that I have said enough to satisfy you, that it is in reality more specious than sound, and that it is refuted both by direct evidence and by the analogy of other parts of the nervous system, the functions of which are now well ascertained.

Of the truth of the two fundamental principles of Phrenology, and of the possibility of applying them successfully to the discovery of the functions of the different cerebral organs which serve to manifest the different mental faculties, it would be easy for me to adduce ample evidence, were this the proper time to do so. That, however, will be afterwards satisfactorily done by your able lecturer. For the present, I must be allowed to assume their truth, and on this assumption to press upon you the necessity of examining both the facts and evidence for yourselves. You cannot with safety continue to neglect this inquiry ; because the truth is advancing while you are inactive, and you are not in possession of any other knowledge which can warrant you in condemning the claims of Phrenology untried. In common fairness, you are bound at least to make yourselves acquainted with both sides of the question, and to suspend your judgment till you have done so. I may go farther, and urge what to many will seem still stronger grounds for recommending you to give Phrenology a fair hearing. Your own interest is deeply con-

cerned in your decision. If Phrenology be true, and if you remain unacquainted with its principles and facts, you will soon find yourselves left behind by those who have had the courage and sagacity to follow the guidance of truth. If true, there is no branch of knowledge which can be of more direct practical interest and utility to the physician or to the philosopher. If true, it furnishes a key, not only to the physiology of the brain and nervous system, but to the philosophy of the mind; and, as such, there is scarcely any form of disease, on the nature and consequences of which it is not calculated to throw some light, or in the treatment of which it does not afford valuable aid.

Many suppose that it is only in cases of insanity, that a knowledge of the physiology of the brain is of any great consequence to the physician. In the discrimination and treatment of every form of nervous and mental disease, it is indeed invaluable, or rather, I may say, indispensable; but from much experience I may further add, that there is scarcely a case to which a medical man can be called, in which an acquaintance with Phrenology will not smooth down difficulties and afford him efficient aid, both in regulating the treatment, and in dealing with the friends of the patient, so as to secure their hearty and complete co-operation. The afflicted are beginning to make this discovery for themselves; and the day is gone by, when advocacy of Phrenology was an objection to a medical man. The bias is now turning the other way; and I have myself received many applications for advice from invalids in different parts of the kingdom, who stated that they were induced to consult me by a belief that Phrenology would throw light upon their ailments. In ordinary private practice, also, the utility of Phrenology is already appreciated by many; and professional men who understand it, are sought after in preference to men of equal skill who remain in ignorance of its value. Here, again, I speak from actual experience; because, since bad health compelled me wholly to relinquish the exercise of my profession, I have repeatedly been applied to by invalids to recommend an adviser who was well acquainted with Phrenology. Indeed, it is to the actual experience of its benefits by a former patient, that you are indebted for being now assembled in this hall. The late W. R. Henderson, Esq., devoted much time and attention to its study, and became deeply impressed with the services it was destined to render to mankind. In his own person and under many drawbacks, he had, both during health and in disease, experienced its practical utility, and thence became more fully aware of the numerous and

beneficent applications of which it admits, to the relief of suffering, as well as to the moral improvement of man. Under this conviction, he resolved to do all in his power for its more extensive diffusion. With this view, some years before his death, he devoted part of his leisure to the delivery of lectures on the subject to the working classes of Galashiels, in the neighbourhood of which he then resided. An impediment in his utterance rendered this effort less successful than it would otherwise have been; but to secure the more effectual and permanent attainment of his object, he made a will, by which, after providing annuities for several friends, he bequeathed all his property to Trustees, to be devoted to the more extensive diffusion and cultivation of Phrenology; and specially recorded, that he did so from no transient fit of enthusiasm, but from a calm, well-considered conviction of the truth and practical value of Gall's great discovery. He lived for four years after making this will; and his conviction that he had done wisely in dedicating his funds to such a purpose became only the firmer. Need I add, then, that, in now providing an endowment for a lectureship on Phrenology in this University, Mr Henderson's Trustees, of whom I have the honour to be one, and as whose representative I now address you, are merely acting in the spirit of the instructions which he left for their guidance, and thereby fulfilling the aim which he had in view. To them, indeed, there seems to be a peculiar appropriateness in this particular application of the Henderson Trust, which renders the present duty doubly gratifying to them. Looking to the motives which actuated Mr Henderson, and to those which actuated the founder of this Institution, in making their respective bequests, what could be conceived to be more congenial in nature and in spirit? In proof of this, I need only read an extract from Mr Chambers' biographical memoir of the late Mr Anderson. After his appointment to the mathematical chair in the College of Glasgow, says Mr Chambers, Mr Anderson "entered upon the business of his class with an enthusiastic ardour of application which we may safely pronounce to have been without example in any Scottish university. Not contented with the ordinary duty of delivering a course of lectures—though he performed the duty in a manner alone sufficient to obtain distinction—he was indefatigable in studying and exemplifying the application of science to mechanical practice; visiting, for this purpose, the workshops of artizans in the town, and receiving, in return for the scientific doctrine which he had to communicate, a full equivalent of experimental knowledge. The

most estimable characteristic of Professor Anderson was a liberal and diffusive benevolence in regard to the instruction of his race. Under the inspiration of this feeling, which was in that age more rare, and therefore more meritorious than it is at present, he instituted, in addition to his usual class, which was strictly mathematical, one for the working-classes, and others, whose pursuits did not enable them to conform to the prescribed routine of academical study, illustrating his precepts by experiments, so as to render it in the highest degree attractive. He continued to teach this *anti-toga* class, as he called it, twice every week, during the session, to the end of his life; and it would not be easy to estimate the aggregate of good which he thus rendered to his fellow-creatures."

From the preceding extract, and from what I have mentioned regarding the motives of Mr Henderson's bequest, it is evident that both testators were induced to make the arrangements we are now reaping the fruits of, by the anxiety they felt to insure, long after they should have themselves mouldered into dust, the continued and wide dissemination of useful knowledge, as the surest way of benefiting and improving their fellow-creatures. In like manner, the Managers of this Institution, acting in a kindred spirit, discarding the narrow prejudices which have retarded the progress of Phrenology as of every other great discovery, and looking only to your advantage, have cordially welcomed the proposal of Mr Henderson's Trustees to establish a Phrenological Lectureship within your walls; and I feel assured, that, so far from ever having occasion to regret their liberality, they will one day be glad to have it in their power justly to boast that the University over which they preside was the first to teach the new philosophy as a branch of science.

Another circumstance which adds to the appropriateness of the present lectureship, is the rising eminence of your Institution as a school of medicine, and the increasing number of professional students who are attracted to its halls. Phrenology, considered as the philosophy of the mind, must be deeply interesting to all classes of reflecting and educated men; but to the intelligent and well educated medical man it offers still more powerful points of attraction, by presenting to him, for the first time, a firm foundation for a true and complete physiology of the brain. In this point of view it will, I am confident, speedily become an *indispensable* branch of knowledge to every physician who desires to keep pace with the progress of science, and to maintain his place either in general society, or among his well educated brethren. Conscientiously

entertaining this belief, I cannot but rejoice that you have been provided with an opportunity of becoming acquainted with the nature and evidences of Phrenology, and with its applications to the treatment of disease; and I would strongly urge you not to let slip the facilities which Dr Weir will afford to you of forming your own judgment, on the only safe ground—that of examination of evidence. Dr Weir is well qualified to be your guide, and he is not untried. He has been long known to you as a successful teacher of medicine, and as an able physician. He has already lectured on Phrenology; and from him you will learn all that is requisite to enable you to prosecute with advantage your own farther researches into the anatomy, and the physiology and pathology, of the nervous system. He will prove to you, what many are anxious to conceal, that Gall's merits are not confined to the physiology of the brain; and that, on the contrary, it was he who, by abandoning the old plan of slicing this organ like a cheese, and adopting the rational method of tracing its elementary structure as it exists in nature, first gave the impulse and the direction which, in recent times, have done so much to improve our knowledge of the anatomical relations of the different parts of the brain to each other, to the spinal marrow, and to the nerves; and that such men as Reil, Blumenbach, Blainville, and Cuvier, did not disdain to acknowledge their obligations to him as an anatomist, even while they doubted his physiological doctrines.* Dr

* Bischoff mentions in the preface of his *Exposition of Dr Gall's Doctrines*, that Reil, after witnessing the dissection of the brain by Gall in 1805, said, "I have seen in the anatomical demonstrations of the brain made by Gall, more than I thought that a man could discover in his whole life."—(See *Phrenological Journal*, vol. vi. p. 307). Blumenbach, in like manner, writes to his friend Dr Albers of Bremen, in September 1805—"I need not inform you, that I congratulate myself uncommonly on having heard Dr Gall, and become more intimately acquainted with him. His lectures were equally interesting and entertaining to me."—*Phrenological Journal*, xix., 41. The celebrated comparative anatomist and professor, Blainville, again, in his *Report on Foville's Anatomy of the Brain*, read to the Academy of Natural Sciences, on 28th June 1828, "placing truth above selfishness, declared," says Dr Spurzheim, "that Gall and I have given to the researches of the brain and nervous system, an impulse and direction altogether new; that this new direction has diverted anatomists from the beaten track to which they had attached themselves before our labours; and that, if we had done nothing but this, and were all the points of our anatomy to be successfully contested and completely refuted, there would still remain to us the honour of having discovered a new impulse, and that, consequently, to us must be referred, as to its source, all that may be valuable in future labours on that subject."—*Phrenological Article of the Foreign Quarterly Review*, by Richard Chenevix, Esq., F.R.S., with Notes by J. G. Spurzheim, M.D. 8vo. Anderson,

Weir will prove to you farther, *that*, in proportion as the principles of Phrenology have been examined and tested by extensive observation, they have been adopted and appreciated both in and out of the profession, and have made their way into books and practice, in an open or unavowed manner, to a far greater extent than those who look only at the silent surface of things are apt to suppose; and that hence we may expect their future progress among men of science to become every day more rapid. It is now fifty years since Gall proclaimed his discovery to the world, and surely half a century of active and determined hostility would have been sufficient to extinguish a system such as his, had it really been based on error and assumption, as it was said to be! And yet so far from being extinct, Phrenology gives every day new signs of increasing vitality. The works in which it is expounded have been sold to a large extent, and yet their sale still continues steady and regular. Does not this simple fact betoken an inherent interest in the subject, which, because truth is on its side, no misrepresentation can destroy? Even in Germany, from which Phrenology was expelled almost at the instant of its birth, it now rears its head, and gives indications of vigorous and enduring vitality. Germany not only possesses a journal devoted to Phrenology, and published regularly at Mannheim, but there is every reason to hope that, in the University of Heidelberg, the very focus of the celebrated Tiedemann's active opposition, a lectureship similar to your own will shortly be established, and given to Dr Scheve, who has already made himself advantageously known by his labours in the cause.

Many other facts might be referred to in proof of the increasing interest with which Phrenology is regarded, more especially among medical men; but time forbids me to enter upon them. Many who believe in and make use of its principles, are still afraid to avow the fact, from a dread of suffering in the estimation of their patients; but others are acquiring confidence in the force of truth, and proclaiming their convictions. The number of the latter is happily on the increase; but so many are still under the influence of apprehension, that it is those only who are either sufficiently acquainted with the subject to detect its features through the thin disguise, or are admitted to the confidence of the more cautious followers of Phrenology, that can form a cor-

Edinburgh. 1829. See also *Phrenological Journal*, vol. vi. p. 307. I may add, that I have heard Blainville express similar sentiments, in equally strong terms, in his lectures in Paris.

rect estimate of its actual progress. Being myself in the enjoyment of both of these means of judging, I have no hesitation in expressing my conviction that the new physiology of the brain is daily extending its influence, and that ere long all timid reserve will be thrown aside, and even credit be claimed by many for a conversion which they are still anxious to conceal. The indications to be derived from the state of the medical press, both in this country, in America, and on the Continent, lead to the same conclusion. In the United States and in France, especially, the principles of Phrenology are as unhesitatingly adopted in many practical works, as if their truth had never been doubted by any one. In England also, they have found their way into many recent publications, where they can easily be recognised by those who have studied the subject. Among our professional periodicals, again, the ablest and most influential of them all—Forbes's British and Foreign Medical Review—has, within the last few years, and in several articles, enforced on its readers the necessity of investigating the phrenological physiology; and for many years past, the Medico-Chirurgical Review and the Lancet, and more recently the Medical Times, have advocated still more strongly its claims to attention. I have reason to know, indeed, that the conductors of both the Lancet and Medical Times have recently expressed a desire to give their readers reports of phrenological lectures. Significant as these signs are, I must refrain from commenting farther upon them; your own reflection will suffice to elicit their meaning.

But, Gentlemen, I have still a word or two to address to the more general part of my audience. Many are now present who do not belong to the medical profession, and they may naturally ask, What interest can Phrenology have for us, who also are invited to attend? My answer is, that it has *much*. If Phrenology be true, it is destined one day to unfold the whole philosophy of human nature; and, therefore, to all who live in society, and wish either to improve themselves or exercise an influence over others, Phrenology is of indisputable use. By unfolding to us the nature and sphere of action of the different powers of intellect and moral feeling and their laws of operation, it throws a flood of light on the principles of education, on the moral government of the world, and on the means for elevating and improving the condition of all classes of society. In the regulation of our own conduct, in the training of our children, and in our whole social intercourse, whether for business or for pleasure, it steps in with a helping hand, of

which those who have experienced its efficiency can best appreciate the practical value. I could point to educators among yourselves who avow that they owe to its aid almost the whole of the superiority and success which have distinguished their career; I could point to parents who have experienced its blessings in the management of their families, and who would not give up its assistance for any consideration which could be offered to them; and, lastly (to come to my own experience), I have, for many years, declared that my obligations to Phrenology, both in my private and professional capacity, are very great—greater, indeed, than to any other single branch of science. When I began to avow belief in its doctrines at the outset of my career, I was warned that if I persisted in doing so, it would prove an almost insurmountable barrier in the way of my professional success. Trusting to the sustaining power of truth, I continued, nevertheless, to avow my convictions, and to advocate its cause, whenever the occasion required it; and the result amply justified the reliance which I placed on the omnipotence and stability of truth. My advocacy of Phrenology did *not* prove any impediment in my professional career; on the contrary, it in many respects extended my field of usefulness, and greatly contributed to my happiness, by giving a more definite and consistent direction to the faculties which I possess. No doubt, some who might otherwise have employed me, were at first deterred, by their prejudices, from doing so; but their place was more than supplied by others, who, in their turn, would not have sought my advice except for Phrenology; and, ere long, many even of the prejudiced ventured to return, and ultimately took place among my warmest friends. The truth is, that, in the long run, professional success or failure does not depend on a man holding this or that particular opinion which happens, for the moment, to be popular or the reverse. Success depends almost entirely on professional skill and attainments, on general soundness of judgment, on readiness in resource, moral integrity, kindness of disposition, discretion, and persevering industry. These are the qualities which elicit confidence in the hour of danger; and you may depend upon it, that if you give decided evidence of your possessing them in a high degree at the bedside of the patient, you will compel even the most prejudiced of your opponents to respect your opinions on this as well as on other subjects, even while they may differ from you. In the private relations of life, also, I have derived the utmost advantage from the lights of Phrenology, and have gained a firmer hold on the confidence of my patients, by pointing out

to them its great practical value in conducting the intellectual and moral training of the young, in promoting mutual forbearance and general kindness of intercourse, and thereby adding to their general means of happiness. It is for Dr Weir to dwell upon all these points in detail; here I can only give you, in a few imperfect words, the general results of my own experience, and leave you to attach what importance to them you may think they deserve. I owe this testimony to Phrenology; and now that I am cut off from the active duties of life, I rejoice in the opportunity once more afforded to me of repeating it before such an assembly as the present. Some among the young and ardent minds who now listen to my words may be impressed by them, and stimulated to the study of a science which, rightly used, may not only greatly contribute to their professional success, but amply repay them for their trouble, by its utility in every relation of life.

But while I estimate thus highly the value of Phrenology, it is right to warn you that it is of Phrenology as it exists in the minds of its well informed cultivators after years of study and observation that I speak, and not of the fancy which many substitute for it in their own minds, and designate by its name. Of the latter kind of Phrenology, nobody can have a lower opinion than I have. It neither is nor ever can be of any use, either to its possessor or to others. The Phrenology which I have here recommended to you is a science which cannot be mastered or judged of in a day, in a week, or in a month. Like other sciences it must be studied before it can be known. Many entertain the notion that they have only to read a book or a pamphlet to qualify themselves to estimate its bearings, and pronounce authoritatively on its merits. This is a grand mistake; as well might we expect to become the equals of Liebig or Faraday, by reading a volume on chemistry. Till we become acquainted with Phrenology in its details, with its evidences, and with its manifold applications to medicine, education, and morals, we are in truth as incapable of forming a correct opinion of its nature and uses as we should be of those of chemistry while in a similar state of ignorance.

I am aware that, by many persons, medical men are supposed to be qualified by their professional knowledge to pronounce an *ex cathedra* opinion, without any previous study of its doctrines; but, speaking again from experience, I have no hesitation in seriously affirming that this also is a gross delusion. A medical man enjoys many facilities for becoming acquainted with and verifying the truth of Phrenology, but

he possesses no intuitive or acquired power of judging without careful examination in this department of science more than in any other. In my own case, I was so far from being conscious of the possession of any such power, that it was only after witnessing the examination of many brains in the extensive hospitals of Paris, that I became convinced that the skull really represents the configuration of its enclosed brain; and it was only after upwards of two years of observation, and meeting with many striking instances of the concomitance of the development of particular cerebral organs with the possession of the corresponding mental powers, that I became assured of its truth, and aware of its many important applications. Singularly enough, too, it was while attending the clinique of the philanthropic Esquirol, who was himself opposed to Phrenology, that my faith in its truth became fixed. As I was then investigating the subject, I became a regular attendant at the Salpêtrière, for the double purpose of studying the nature of insanity, and of ascertaining how far its phenomena were explicable by means of Phrenology. For the first two or three weeks, every thing which I saw, and every description which dropped from the lips of Esquirol, coincided so completely with the representations given by Gall and Spurzheim, that I could not help regarding Esquirol himself as a convert. Judge, then, of my surprise, when, calling one day for Dr Spurzheim, and expressing this opinion to him, he significantly said to me—“Yes, Esquirol’s *lectures* are phrenological, because he faithfully copies Nature, and Nature and Phrenology are one: but personally he is an opponent.” Astonished at this statement, I replied, that surely he must have recently changed his views, as every word that he uttered seemed to me to embody the doctrines of Gall and himself. My lamented friend smiled, and answered, “Oh no! Esquirol has not changed; wait, and you will see. One day he will speak out his opinion.” The event entirely justified Dr Spurzheim’s prediction. Esquirol *did* ultimately speak of Phrenology by name, and he did so only to declare his dissent from its tenets. In the very few reasons, however, which he assigned for his scepticism, there was not, in reality, a shadow of ground to justify his hostile conclusion. On the contrary, his mode of classifying and explaining most of the phenomena, seemed to me to imply, not only an acquaintance with, but a belief in, at least, the general principles of Phrenology. This was also the exact state of his opinions on the subject when I revisited the asylums of Paris twelve years afterwards (1831). While kindly conducting me through the wards of Charenton, M.

Esquirol mildly repeated his disbelief, and referred, in support of it, to objections which were either palpably irrelevant, or based entirely on misapprehension of Gall's statements. The singular contradiction between Esquirol's facts and inferences made a strong impression on me on both occasions; and he himself seemed in some degree sensible of its strangeness, for, in his lectures, his mention of Phrenology was very slight, and he never again referred to it by name, but went on as before, unconsciously making every day new use of its principles and adding new force to its evidences.* That I was not mistaken in regarding the cases which he brought under our notice as confirmatory of its truth, may, I think, be fairly presumed from the circumstance that the celebrated Georget, his own friend, relation, and disciple, who lived for years in the midst of those cases, not only became an avowed phrenologist, but, by his phrenological writings on insanity, did much to diffuse those sounder views of its nature and treatment, which are now effecting so much good, and for which he was, in no small degree, indebted to the able work which Dr Spurzheim published shortly before on the same subject.

Having gone through this long and varied course of inquiry before I became fully aware of the extent and importance of the subject, I need scarcely say, that I feel as little respect for the favourable opinion of those who style themselves "great believers," formed on the evidence of an hour's study, or of two or three lectures, as I entertain for the hostility of those who, on equally slender grounds, reject its claims. Of the two, indeed, the "*great believer*" is perhaps the more dangerous enemy, for his credulity is apt to excite disgust in the minds of more thoughtful and philosophical men who happen to meet with him, and erroneously assume him to be a fair representative of the doctrines which he only brings into contempt.

But while I inculcate the necessity of patient inquiry, as the only means by which to acquire a competent acquaintance with the practical details and applications of Phrenology, I should be sorry were any one of you to be deterred from studying it by an exaggerated estimate of its difficulties. In this respect it possesses a great advantage over the ordinary systems of mental philosophy, many of the doctrines of which are so abstract as almost to defy comprehension. Even while I write, a document has been put into my hands, in which the superior intelligibility of Phrenology is so clearly stated, that I cannot do better than

* The reader will find a more detailed examination of M. Esquirol's opinions on Phrenology in the *Phrenological Journal*, vol. viii., p. 653.

use its words. The document referred to is a prospectus just issued by the Phrenological Society of Paris, offering a prize of 1000 francs (called, from the name of the donor, the *Prix Pecoul*) for the best essay on the application of Phrenology to metaphysical analysis. After alluding to the contradictory vagueness of most metaphysical speculations, the writer continues:—"It is important to remark, that the propositions of Phrenology concerning the nature of man, and that of the animals most nearly allied to him, are precise, and have the great merit of resting upon real data, easily tested by facts which everybody can observe; while in the philosophy of the schools, human nature remains an enigma, or at least a purely ideal conception, abounding so much in hypotheses wholly unconnected with experience, that neither teacher nor moralist, nor judge nor legislator, can derive from them any of the principles which are so much wanted to guide them in the action they exercise on each other, on individuals, and on society." In the justice of these remarks I entirely concur; and I would add, that, from the light which Phrenology throws upon many of the most intricate phenomena of human nature, there is scarcely any situation in which a man can be placed which does not afford opportunities for interesting and useful phrenological observation. From its very nature, it is in society and in our daily intercourse with the sick, and not in the closet, that we are to look for most of its evidences, and that we find ample scope for its applications; and in this way it becomes an object of interest, and almost of amusement, in the very hours which would otherwise be often thrown away. Let no one, then, who is possessed of a strong love of truth, combined with even average powers of intellect, fear to engage in the study; for although, in its applications to human improvement, Phrenology affords full scope for the exercise of the highest mental endowments ever vouchsafed to man, it also presents much that is at once intelligible, and in a high degree useful, to minds of an ordinary calibre. I know some persons of this description who, by patient perseverance, have not only thoroughly mastered its principles, but succeeded in applying them in the affairs of every-day life with so much tact and success, as to have added largely to their usefulness, comfort, and happiness.

In making these remarks regarding the utility of Phrenology, and the increasing interest now felt in its diffusion, I ought, perhaps, to warn you, that, as a system or body of doctrine, it is far from being regarded by its adherents as either perfect or complete. On the contrary, no one knows so well as

the true phrenologist how much still remains unaccomplished. Let those, however, who are opposed to it, on the ground of its incompleteness, fairly try its merits even as it stands, by comparing them with those of any other philosophy or physiology of the brain, and we shall fearlessly abide by the result. Utility is a prominent characteristic of truth. Whatever is true, becomes of some use, even when imperfectly developed; whereas error serves only to mislead, however ingeniously it may be propounded. Tried by this test, there is this remarkable difference between Phrenology and any other physiology of the brain or philosophy of mind that I ever heard of:—On the one side, we have the direct and explicit testimony of physicians, moralists, philosophers, clergymen, lawyers, teachers, parents, superintendents of asylums, prisons, and schools, merchants, students, and, in short, of numbers in all ranks and professions, certifying, in strong terms, and from their own experience, that they have found Phrenology of great utility in the practical business of life; whereas there is not, on the other side, so far as I am aware, a single instance of any one volunteering similar testimony with regard to any other view of the functions of the brain, or any other philosophy of mind, from the days of Aristotle downwards. For my own part, I am certainly within the mark when I say, that I have seen, heard, or received explicit testimony to the practical advantages of Phrenology from at least a hundred different persons, many of whose communications were by letter and from individuals wholly unknown to me; and I know that other phrenologists could state the same thing. How, then, are we to account for this remarkable fact? A high and revered authority tells us, that truth may be known by its fruits, and admonishes us, therefore, to try all things, and hold fast by that which is good. Is it wrong, then, to infer, with this evidence before us, that there must be at least a large infusion of truth in that which all who know it have found to be a source of happiness, improvement, and advantage to them? And am I wrong in urging you to try Phrenology for yourselves, and to abide by your experience of its results?*

* Among other unequivocal symptoms of the estimation in which Phrenology, as a practically important science, is held, I may refer to the bequest of about £15,000 to the Phrenological Society of Edinburgh, by the late Dr Robertson of Paris, who died in 1840, and who had taken a warm interest in the subject for nearly thirty years. In a correspondence which occurred a few months before his death, Dr Robertson mentioned that he thought at first leaving money for the purpose of founding a Professorship of Phrenology in the University of London; but that, on consideration, he preferred leaving the disposal of his funds to the Phrenological Society. The legacy, however, has not yet been forthcoming, and a law-suit is now pending in Paris, at the instance of the Society,

But time warns me to have done. Before parting, however, I would once more earnestly recommend to you, while listening to the instructions of Dr Weir, to observe nature for yourselves, and exercise your own judgment, on the subjects submitted to your attention. Your object ought to be truth alone; and that, unfortunately, is not to be found unmixed with error in any of the works of man. Man is, at best, but a fallible being, and no one who values science at its just rate will ever seek to rest its facts and doctrines solely on his own or any other human authority. So far as Phrenology is true, it has nothing to fear from either the wit or the malice of man; and so far as errors may have mingled with its truths, it can only gain by their exposure and rejection.

After what I have already told you, you will easily be able, without farther explanation, to understand the motives which have led to the establishment and endowment of the present lectureship. Addressing you, not as your teacher, but merely as the representative of Mr Henderson's Trustees, it was no part of my object to explain to you the nature, the evidences, or the uses of Phrenology; and consequently, if I have said enough to convince you that the subject is one of intrinsic importance, and eminently deserving of careful study on your part, my aim and that of the other Trustees will be entirely fulfilled. It will remain for Dr Weir, as your teacher, to do the rest, and I have no doubt that he will give you the most able and efficient assistance in conducting your inquiries. Looking back upon the aid and comfort which I myself have derived from Phrenology, both in my private and professional capacities, during the last twenty-five years, I cannot but feel an earnest desire that you, who are now only entering upon your career, should also share largely in its benefits, and contribute in your turn to its future improvement and diffusion. It is this feeling which has impelled me, at the cost of a greater effort than I have of late been accustomed to make, to prepare the present address; and, had strength permitted, nothing would have given me greater satisfaction than to witness in person the commencement of an undertaking which, by its permanent results, will, I trust, redound equally to your advantage and to the credit of Anderson's University.

AND^W. COMBE.

Edinburgh, January 7. 1846.

to compel Dr Verity—the sole executor under the will—to fulfil the intentions of the testator. This he at present declines to do, on the groundless plea of the non-existence of the Society; and he even repudiates the competency of the French courts to entertain the question at all.

APPENDIX TO THE FOREGOING ADDRESS.

THE following letters are so interesting in themselves, and bear so directly on some of the points touched upon in the preceding Address, that no apology can be required for introducing them here. They were all written to Mr George Combe, in answer to a request made by him that each of his correspondents should favour him with his opinion on the subject of the Andersonian Lectureship. They were, consequently, all written without the slightest intercommunication or knowledge on the part of any one of the sentiments expressed, either in the Address itself or in any of the other letters. In this point of view, the definiteness and coincidence of opinion by which they are characterized, and the unconscious testimony which they bear to the accuracy of the author's representations, must strike every reflecting reader.

A greater number of such letters might easily have been procured ; but those now presented will suffice. They are all from distinguished men, and each of them may be regarded as the representative of a distinct class of society. To the medical world, both at home and abroad, Mr Carmichael has been long known as standing at the head of the surgical profession in Dublin ; and his brethren will not soon forget either the ability, zeal, and success, with which he has, for many years, laboured in the cause of science, or the munificent contribution (L.500) which he gave, two or three years ago, to promote the cause of medical reform. Professor Gregory, also, is too well known, from his position and writings, and from his former connection with Anderson's University, to require any notice here. Of Dr Browne of Dumfries, and of the value of his testimony, little need be said. He is well known as one of the ablest and most enlightened men who ever devoted their energies to the cause of the insane. Of Mr Hodgson, again, it will be sufficient to say, that as Principal of the Mechanics' Institution of Liverpool, he has for several years stood at the head of what is now one of the largest, most important, and most successful educational establishments of this country, and that to his untiring energy, enlightened views, and great talent, it owes no small share of its efficiency and prosperity.

LETTER I.—From RICHARD CARMICHAEL, Esq., M.R.I.A.,
President of the Royal College of Surgeons in Ireland; President of the Medical Society of Ireland; Honorary Member of the Royal Academy of Medicine of France, &c. &c. &c., and Surgeon of Richmond, Hardwick, and Whitworth Hospitals, Dublin.

RUTLAND SQUARE, DUBLIN,

December 24. 1845.

MY DEAR SIR,—It afforded me the greatest satisfaction to learn that a Lectureship of Phrenology has been at length established in a University; and it reflects the highest credit upon the managers of the Andersonian University, to be the first to throw off early prejudices, and to acknowledge the importance of Phrenology, which, I have no doubt, will soon be generally regarded *as the true physiology of the brain, and immeasurably beyond every system of metaphysics hitherto propounded, in accounting for the workings of this hitherto inexplicable organ.*

When Spurzheim first arrived in this country, I witnessed his dissection of the brain; and I well recollect the gratification I felt, when I observed him tracing the nervous fibres from their origin to their termination, instead of cutting them transversely, as had been previously the habit. Just as well might we attempt to display the muscles of a limb, in order to explain their action, by cutting them across. But, notwithstanding this obvious improvement in the mode of dissecting the brain, Gall and Spurzheim were stigmatized for this, as well as for their other discoveries, in the *Edinburgh Review*, as impudent impostors and charlatans. But *now* their dissection of the brain is the only one pursued, I believe, in all the anatomical schools; and their Phrenology will soon, I trust, be equally taught, as the true philosophy of mind, in all the universities of Europe.

Phrenology, under the able lectures of Spurzheim, continued to make progress with the public, notwithstanding the opposition of established moral philosophers and metaphysicians, at the head of whom was the celebrated Dugald Stewart, who actually refused to admit Spurzheim into his presence, although he brought him a letter of introduction.

A second virulent article against Phrenology appeared in the *Edinburgh Review*, in which that most unmerciful of all weapons, *ridicule*, was unsparingly and skilfully employed by its able editor. But Phrenology has withstood all this violence and persecution; and, so far from being crushed, is every day advancing in public estimation;—a strong proof of

which is the fact, that the language of Phrenology is often employed, even by its opponents, when they attempt to convey opinions respecting the mental characteristics of others, which they find it difficult to render equally intelligible in ordinary language.

I shall not occupy your time, by adverting to the flood of light which Phrenology has thrown on the principles upon which education, jurisprudence, and prison discipline, ought to be conducted, viz., by the improvement of the intellectual and moral organs, so as to keep in check the influence of the animal propensities. It would be equally superfluous to insist on the advantages it affords in treating the insane. You will agree with me, that no individual who is not a skilful Phrenologist, can reach the same degree of efficiency, in superintending an asylum for such patients, which he could attain by its aid. Indeed, the assistance it lends in establishing a confidence in ourselves, and acquiring the confidence of our patients, is of the greatest utility in the treatment of those ailments which depend upon a morbid state of the brain, or some other portion of the nervous system, such as epilepsy, hysteria, hypochondriacism and neuralgia.

The example of the Andersonian University must in time be followed. Other similar institutions cannot leave the students in that unenviable state of ignorance, which would render vain all competition with those who are well grounded in this most important science, and aided by the light it sheds on so many fields of knowledge.—I remain, my dear Sir, yours very truly,

RICHARD CARMICHAEL.

GEORGE COMBE, Esq.

LETTER II.—*From WM. GREGORY, Esq., M.D., Professor of Chemistry in the University of Edinburgh.*

EDINBURGH UNIVERSITY,
5th January 1846.

MY DEAR SIR,—Having only returned from the country two days ago, I could not sooner acknowledge the receipt of your letter, which I found waiting me here.

I rejoice that you are to deliver the opening lecture of the first course of Lectures on Phrenology founded in any public educational institution in Scotland.

As having formerly held office in the Andersonian Institution; and as having, in 1839, delivered, within its walls, a brief popular course of Lectures on Phrenology, I feel naturally much interested on the present occasion.

The Managers have always been distinguished by liberality of sentiment; and in no one of their proceedings have they more honourably acted up to the liberal spirit of their Institution, or more conscientiously performed the duty which they owe to society, than in assisting in the foundation of a Lectureship on Phrenology.

It is possible that some may look on this step as imprudent, or even unjustifiable; but no one acquainted with the recent progress and present state of Phrenology will hold such an opinion. On the contrary, those who have attended to the subject, and watched its progress most closely, cannot but look forward with confidence to the time when there shall be a chair for teaching the true physiology of the brain in every flourishing seminary, as no longer remote. The example now set by Anderson's University will, ere long, be followed by other seminaries; and the managers and members of the Andersonian University will then derive just honour and praise from the result of their foresight, candour, and liberality.

The students attending these lectures will enjoy very great advantages; for they will no longer be shut out from the rich harvest of observations, and the valuable practical applications of these which abound in the works of phrenologists. When they listen to their learned instructor, Dr Weir, of whom it is unnecessary, and would be very presumptuous, for me to speak in terms of praise, they will find it impossible to hold the doctrine, so comforting to indolence and prejudice, that a phrenologist is necessarily a bad or inferior anatomist. The subject being presented to them as it ought to be, not in the form of a gross caricature, but in the words of the great founder and promoters of Phrenology, they will soon perceive, that the cerebral anatomy of Gall and Spurzheim surpasses that of their predecessors, as much as their cerebral physiology does; and that no discoverer ever lived who adhered to the golden rule of induction from carefully observed facts more strictly than Gall. These fortunate students, hearing Phrenology spoken of like any other branch of natural or physiological inquiry, as a field for observation and induction, and not sneered at, when alluded to at all, as an absurd system of divination, will proceed to the study of nature in this branch of physiology, without having to unlearn a mass of prejudices which have, in many cases, proved an insurmountable obstacle to the progress of young anatomists, trained in some of the existing schools to a blind and unreasoning contempt of Phrenology.

Thus freed from the shackles of prejudice, and trained to

employ their own faculties in observing Nature, as well as in reasoning on the phenomena observed, they will soon discover that Phrenology furnishes the key, so long sought for in vain, to many perplexing facts; that it explains, in a natural and simple manner, the phenomena of partial genius, and of partial insanity; that it throws equal light on innate tendencies, whether intellectual, moral, or sensual; that it yields the most precious hints for the treatment of the insane, as well as of the criminal; and, finally, that it forms the only rational foundation for an enlightened education.

What less, indeed, can be predicated of the physiology of the brain, when studied on rational principles? Indeed, were I to enter here on a list of the invaluable applications of Phrenology, I should appear to exaggerate, when, as you well know, I should speak very sober truth.

Let me observe, in conclusion, that I never cease to rejoice that it has been my fortune to live in a time and country which admitted of my becoming acquainted with Gall's Physiology of the Brain, as expounded and illustrated by Spurzheim and yourself; and that I feel a thorough conviction, that Dr Weir's pupils in the Andersonian University will, one day, echo the sentiment, and will ever feel grateful to the Founders of the Lectureship, for the inestimable benefits which have flowed from the Institution. I remain, yours very sincerely,

WILLIAM GREGORY.

LETTER III.—*From W.A.F. BROWNE, Esq., M.D., Physician to the Crichton Institution for the Insane.*

CRICHTON INSTITUTION, DUMFRIES,
3d January 1846.

MY DEAR MR COMBE,—I understand that you are to deliver a Lecture before the Members of the Andersonian Institution, Glasgow, introductory to the Course of Dr Weir, the newly appointed Professor of Phrenology.

All men, whether holding my sentiments or not, must regard this as a most important event in the progress of moral and physical science. But those who have faithfully investigated the subject of cerebral physiology, who have marked the progress of public opinion, who are aware that a large body of educated men have adopted the principles of Phrenology; that an equally large body of men, it may be unconsciously, *think* phrenologically, judge of conduct and character through the medium of Phrenology, and employ its

phraseology ; and, further, that the treatment and training of the young, the diseased, and the criminal, have been, in various places and countries, and in various modes, moulded and modified in accordance with these principles, cannot but regard the appointment as an indication of the general feeling upon this disputed question ; and the Directors, not merely as patrons of science, but as benefactors, in the true sense of the word, in adopting means to diffuse a knowledge of truths which affect all men, in all states and stages of civilization, in all stations of life, and in all conditions, bodily and mental. This much, as to the act which you are about to signalize ; then as to the importance and value of phrenological views I cannot now express myself otherwise, or better, than I did when addressing you ten years ago upon a different occasion.

I have been acquainted with the principles of Phrenology for upwards of twenty years ; that, from proofs based upon physiology and observation, I believe these to be a true exposition of the laws and phenomena of the human mind ; that, during the whole of the period mentioned, I have acted upon these principles, applied them practically in the ordinary concerns of life, in determining and analyzing the characters of all individuals with whom I became acquainted or connected, and that I have derived the greatest benefit from the assistance thus obtained. But although the utility of the science be most apparent in the discrimination of the good from the bad, those of virtuous and intellectual capabilities from the brutal and the imbecile, it is not confined to this. In the exercise of my profession, I have been enabled, by the aid of Phrenology, to be of essential service in directing the education of the young, as a protection against nervous disease, and in removing or alleviating the various forms assumed by insanity in the mature. For many years I have devoted myself to the study of mental diseases, and to the care of the insane. During my studies at Salpêtrière, Charenton, &c., in Paris, I was able to derive great additional information from my previous knowledge of Phrenology ; and since I have been entrusted with the care of public asylums, I am inclined to attribute whatever success may have attended my efforts to ameliorate the condition of those confided to my charge, to the same cause.

I may add, that I was *converted* from a confidence in the accuracy of the philosophy of the schools to a belief in Phrenology ; that I did not accept its doctrines on the authority of my teachers, but tested their truth by repeated experiment ; that I have since taught them to large bodies of my

countrymen ; and feel fully convinced that, until they be recognised and acted upon generally, no just conclusion can be drawn as to human character, nor as to the administration of punishments for the improvement, or rewards for the encouragement of mankind.—I have the honour to be, with great respect, your obedient servant,

W. A. F. BROWNE, M.D.

LETTER IV.—*From W. B. HODGSON, Esq.*

LIVERPOOL MECHANICS' INSTITUTION,
MOUNT STREET, 2d January 1846.

MY DEAR SIR,—It is with no slight pleasure that I have heard of the introduction of Phrenology into the Andersonian University of Glasgow as a regular branch of instruction, and from what I have heard of Dr Weir, I am convinced that his appointment will be of eminent service to the science. You are not unaware of the views which I have held for many years as to the expediency of teaching Phrenology in all universities, not incidentally, but thoroughly, openly, and systematically, as a distinct and most important branch of philosophical inquiry,—distinct, and yet closely allied with many other sciences, and forming in itself the great bond of union between physiology and metaphysics, the science of the body, and the science of the mind. Of the utility of Phrenology in various pursuits, there are not now wanting many influential witnesses. Of its importance to the Educationist I may speak, if with humility, yet with confidence, based on actual experience. To the practical teacher Phrenology is of eminent service, not merely in enabling him to form rapid and correct judgments of individual characters, but from its clear and simple philosophy of mind, the light it throws on the *nature of the being to be instructed*, and consequently on the true aim and wisest methods of education. But a letter is not the place for a full statement of the bearings of Phrenology on education. Once more I congratulate you, who have so long and so zealously laboured in this cause, on the present recognition of the claims of Phrenology to be formally taught as something true, and useful because true.—I am, yours very faithfully,

W. B. HODGSON.
Principal.

The last letter is from Dr Conolly, late Resident, and now Consulting, Physician to the Middlesex County Lunatic Asylum at Hanwell, and formerly Professor of Medicine in the London University. Dr Conolly is well known, both by his

writings and by the improvements which he effected in the management of the Hanwell Asylum, and especially by the entire abolition of physical restraint, and the successful substitution of increased kindness and watchfulness among an insane population of upwards of 800. His experience has been so great, and his Clinical Lectures, now in the course of publication in the *Lancet*, have made him so extensively and advantageously known, that his authority cannot fail to have much weight.

HANWELL, January 5. 1846.

MY DEAR SIR,—Recollecting almost the commencement of your labours in the cause of Phrenology, when I had the happiness of being a student at Edinburgh, I cannot refrain from offering you my congratulations on the establishment of a Professorship of the science in the Andersonian Institution at Glasgow ; and I only regret that I cannot have the advantage and gratification of hearing the lecture which you have undertaken to deliver on the occasion.

Many and pressing avocations leave me no time just at present to express to you, in a manner at all worthy of the subject, my conviction of the great usefulness of habitual regard to the principles of Phrenology, especially in my department of practice, and of the confusion and imperfection of the views which seem to me to be taken, both of sound and unsound mind, by those who reject the aid of observations confirmed now by vast experience, and most of which may be daily verified in asylums for the insane. I am also convinced, that attention to the form of the head, conjoined with that cautious consideration of all other physical circumstances which no prudent phrenologist disregards, will often enable the practitioner to form an accurate prognosis in cases of mental disorder, and to foretel the chances of recovery or amelioration, or hopeless and gradual deterioration. But I am aware that I am now taking a very limited view of the applications of the science ; which, however, I know you will excuse, in consideration of the somewhat exclusive occupation of my mind on these subjects.

I always remember with pleasure your illustrative remarks on the shape of the heads of some of the unfortunate inmates of a prison which I was some years ago permitted to visit with you ; and I wish much for an opportunity of conducting you through the wards of Hanwell, and, with examples before us, benefiting by your great experience.

With all good wishes, believe me to remain, my dear Sir,
always sincerely yours,

J. CONOLLY.

GEORGE COMBE, Esq.

II. *On the Influence of the Weather upon the Mental Faculties.* (From the American Journal of Insanity, No. IV.)

Every one, we suppose, has noticed that the weather has some effect upon the feelings and disposition—that wet, cold, and unpleasant days, induce moody and often irritable feelings; while a warm day, with serene sky and dry atmosphere, gives cheerfulness to every one. Physicians often notice that their patients are better when the weather is pleasant.

But upon the minds of some, unpleasant weather, with damp wind, has very serious effects, often changing the entire moral character. We apprehend it often leads to quarrels and crimes, and influences the disposition of jurors and legislators, teachers and scholars, clergymen and their hearers, &c.

Hence it is of vast importance that legislative halls, court-rooms, school-houses, and churches, be well ventilated and well warmed. Yet the fact is notorious, that these places are among the worst ventilated and worst warmed buildings in the country.

A distinguished advocate informed the writer of this, that he had often noticed the bad effect of a cold unpleasant atmosphere, upon the temper of both court and jury; and seen an immediate change, in this respect, on the improvement of the temperature and atmosphere.

The Parliament House in London is now admirably ventilated, lighted, and warmed; and it would be well if the arrangements adopted there for these purposes, were introduced into the public buildings of this country.

That the inhabitants of warm countries are more passionate and of quicker temper than those of cooler regions, is well known.

“The cold in clime are cold in blood.”

“Afric is all the sun’s, and as her earth
Her human clay is kindled.”

Dr Sealy, late resident physician at Florence, Messina, &c., states, in a recent number of the *Dublin Journal of Medical Science*, that the climate of Sicily and southern Italy often affects residents after they have been there two or three years, and induces a peculiar nervous affection. The following condensed account of the disease we take from the last July number (1844) of the *Medico-Chirurgical Review*.

“It is characterized by an excessive irritability, attended with extraordinary mental and muscular activity, and seldom attacks the new-comer, but more frequently those who have

been resident between two or three years, and just beginning to suffer from *nostalgia*. There exists in it an inexpressible consciousness of disease; the mind is disturbed by visions; the imagination is morbidly awakened; yet the judgment still possesses its control over the mind, with scarce a capability of obeying its dictates.

“Dr Sealy is satisfied that it is a disease of climate. The modifications of it are great, and its grades various, from slight excitability to serious and formidable disease, affecting mind and body. According to the Doctor, ‘it seems a hyperelimination of the nervous principle, a peculiar elastic evaporation of a spiritual consciousness and capability, aroused by electrical agency or invisible atmospheric influence.’ The imaginative and sanguineo-nervous temperaments are particularly liable to it, and suffer much during the prevalence of the Sirocco-wind, especially at Rome and Palermo, and at Naples and Sicily, when the atmosphere is charged with electricity. That all should feel excitement in that elastic atmosphere is not to be wondered at; it is when such excitement becomes excessive and permanent that it requires control. The extraordinary rarity of the atmosphere contributes much to the force with which impressions are conveyed to the senses. In Sicily, the air is so attenuated and transparent that distance seems almost annihilated, and sounds come on the ear with appalling force. Some parts of Italy are found to possess this exciting influence more than others.

“Whilst residing at Florence, several cases of this nervous affection presented themselves to Dr S., affording curious, and some of them most amusing traits. The severest case of it ever witnessed by him was in Messina, in Sicily. On his arrival at Messina, from Naples, he was waited on by a gentleman, stating that their resident clergyman was dangerously ill and requested his immediate attendance; he stated that the town was in a ferment about him, the Church of England service having been suspended for some weeks. Dr S. immediately waited on his patient; he found him in bed; countenance haggard; eyes glaring out of his head, and deeply suffused and bilious; skin dry and parched, and almost verging on the icteroid tint; tongue dry and red at edges, and covered with a brown fur in centre and back portion; pulse small and quick; his general expression denoted the deepest misery, though his mind was perfectly clear. He had been ill three weeks. He had been under the care of a Sicilian physician, and had taken very little medicine,—none of a purgative kind, though he felt he wanted it, as his bowels had not been moved for some days. The Sicilian

doctor declared his complaint to be March fever, and was treating him accordingly with quinine; the only other medicine he had taken was an infusion of taraxacum, the Sicilian panacea for all diseases. Dr S. advised blue pill in a smart dose, combined with compound colocynth pill, to excite the biliary secretion; to this were added leeches to the head, mustard sinapisms to the feet; the pills to be followed up by a bitter saline mixture, to full purging. After twelve hours there was a perceptible improvement; the patient had been well purged; his mind became more tranquil, and his nervous system much quieted. During the progress of his disease, his mental hallucinations were extraordinary, almost amounting to what the French mesmerisers denominate *clairvoyance*, and his visions were frightful; his pervading wish was to tear everything near him, to shout, to sing, and *curse*; he fancied he saw his limbs leave his body; he was convinced of the unreality of the vision, and of its being the result of a diseased imagination; yet so palpable was the delusive vision that he could scarcely correct the delusion by the utmost effort of his reason.

“The bodily disease, separated from the mental hallucination, evidently had its origin in the biliary and chylopoietic viscera; this was indicated by all the symptoms, as well as by the alvine discharges. This was the disease in its severest type. The minor modifications of the disease, met elsewhere, were not attended with such severe constitutional symptoms; and in many cases, where severe and distressing mental hallucinations existed, were unaccompanied by morbid appearances. Dr Sealy states, that he could almost always trace the disease to some engorgement of the *chylopoietic viscera*. He considered the disease as a modification of hypochondriasis, the nervous system being over-excited by atmospheric influence, while the biliary and digestive systems were deranged at the same time.

“The most successful treatment, according to the Doctor, is a modification of mercurial and vegetative purgatives, with a modified anodyne and stimulating plan of treatment.”

But the *damp winds* of South America have still worse effects upon the temper of some individuals. The following account of these winds, and their effect on the mental faculties, is taken from the *Penny Magazine* for September 1844; to which our attention was directed by Dr T. R. Beck of Albany.

“The inhabitants of the La Plata provinces are subject to other alternations of climate, not less remarkable than those resulting from the actual presence or absence of rain. Northward of Buenos Ayres is a very marshy district, while

south-westward is the giant-chain of the Andes, separated only by the dry plains of the Pampas; and according as the wind blows from one or other of these quarters, the effects are most extraordinary. Sir Woodbine Parish, who resided for a considerable time at Buenos Ayres, noticed this subject particularly, and some of his details are highly instructive.

“By the time the north wind reaches the city, it has become so overcharged with moisture, that everything is made damp; boots and books become mildewed; keys rust even in the pocket; and good fires are necessary to keep the apartments dry. Upon the bodily system, the effect produced by this prevailing humidity is a general lassitude and relaxation, opening the pores of the skin, and inducing great liability to colds, sore throats, rheumatic affections, and all the consequences of checked perspiration. As a safeguard against the consequences of this state of things, the inhabitants wear woollen clothing, even if the weather be quite hot; and although Europeans would prefer wearing cool cotton clothing in such a climate, they soon learn that the native inhabitants are right in the plan they pursue. It is in the immediate vicinity of the river Plata that the effects are the worst.

“This damp wind of La Plata seems to affect the temper more than the constitution, and in so far differs somewhat from the ‘Sirocco’ of Malta. The irritability and ill-humour which this damp wind excites in some of the inhabitants, amount to little less than a temporary derangement of their moral faculties. It is a common thing for men amongst the better class to shut themselves up in their houses during its continuance, and lay aside all business till it has passed; whilst among the lower orders it is always remarked, that cases of quarrelling and bloodshed are much more frequent during the north wind than at any other time. In short, everything is disarranged, and every body lays the fault to one source—‘Senor, es el viento norte.’

“A physician of many years’ standing, who had closely studied the effects of this dreaded ‘viento norte,’ or north wind, on the animal system, gave Sir W. Parish the following account of an instance which had come under his personal notice:—‘A man named Garcia was executed for murder. He was a person of some education, esteemed by those who knew him, and was in general rather remarkable than otherwise for the civility and amenity of his manners; his countenance was open and handsome, and his disposition frank and generous. But when the north wind set in, he appeared to lose all command of himself; and such was his extreme irritability, that, during its continuance, he could

hardly speak to any one in the street without quarrelling. In a conversation with my informant, a few hours before his execution, he admitted that it was the third murder he had been guilty of, besides having been engaged in more than twenty fights with knives, in which he had both given and received many serious wounds ; but, he observed, ' it was the north wind, and not he, that did it.' When he rose from his bed in the morning, he said, he was at once aware of its accursed influence over him ; a dull headach first, and then a feeling of impatience at everything about him, would cause him to take umbrage even at the members of his own family, on the most trivial occurrence. If he went abroad, his headach generally became worse ; a heavy weight seemed to hang over his temples ; he sought objects, as it were, through a cloud ; and was hardly conscious where he went. He was fond of play ; and if, in such a mood, a gambling-house was in his way, he seldom resisted the temptation ; once there, any turn of ill-luck would so irritate him, that the chances were he would insult some of the bystanders. Those who knew him, perhaps, would bear with his ill-humours ; but if unhappily he chanced to meet with a stranger disposed to resent his abuse, they seldom parted without bloodshed. Such was the account the wretched man gave of himself, and it was corroborated afterwards by his relations and friends ; who added, that no sooner had the cause of his excitement passed away, than he would deplore his weakness, and never rested till he had sought out and made his peace with those whom he had hurt or offended.'

" Many of the female inhabitants of the city, during the continuance of the ' viento norte,' may be seen walking through the streets with large split-beans stuck upon their temples ; these are said to act as a slight blister, and to counteract the relaxation caused by the state of the atmosphere. It is found that, during this period, old wounds often burst out afresh ; new ones are very difficult to heal ; an apparently trivial sprain becomes, at this period, very serious ; and lockjaw, from the most trifling accident, is very frequent. In domestic matters, too, everything is out of sorts at such a time ; the meat turns putrid, the milk curdles, and the bread becomes bad before it can be eaten.

" But no sooner does the ' pampero' succeed this ' viento norte,' than everything changes almost instantly. The pampero, or south-west wind, blowing from the dry and snowy summits of the Andes, across the Pampas to Buenos Ayres, sweeps away the dreaded north wind and all its effects, and substitutes a dry, healthy air in its place."*

* Some remarks on the influence of the weather on the mind will be found in our 15th volume, p. 34.—ED. P. J.

III. *On the Liability to Trial and Punishment of the Deaf and Dumb.*

Considerable interest was excited in the Justiciary Court, Glasgow, on Thursday, January 8, 1846, by the trial of a deaf and dumb youth on a charge of housebreaking and theft. The utmost difficulty was experienced in ascertaining whether William Shields (the panel's name) understood the nature and consequences of a plea of guilty or not guilty—his interpreter stating that the only form in which, in these circumstances, he could put the question, was to ask, by means of signs, whether the panel had stolen the property. Shields and his accomplices were found guilty, and sentenced to transportation for seven years. Had Shields been educated, the question of guilt or innocence, and many others not less important to the ends of justice, might have been put to him in writing or by means of the finger alphabet. Strange that the law which holds such persons amenable to punishment, should not at the same time make it imperative upon the overseers of the poor to provide them with education.

Mr Duncan Anderson, Superintendent of the Deaf and Dumb Institution, who acted as interpreter to Shields at the trial, had been previously examined as to his capacity, and the following we understand to have been the substance of his statement:—"I have been connected with the Deaf and Dumb Institution for about nineteen years, and I saw at once the prisoner had never been connected with that institution, and therefore presumed he could not have belonged to Glasgow. I took means to ascertain his capacity, and found that he had got a little education, but that he had no power of communicating with me in written language, except to the extent of naming a few persons and places; and I was enabled to discover, from his signs by means of the finger alphabet, that he was born in Ireland, and had been for a short time in some school there for the deaf and dumb. I know there are such institutions in Ireland—one in Dublin, one in Belfast, and one in Cork, and I inferred from the prisoner's signs that it was the one in Belfast he had been in, but I could not say so with any degree of confidence; I learned from him also that his mother was in Edinburgh. With permission of an officer who was present, I signified to the prisoner that he was charged with breaking into a house, and I told him this in general terms, because I found he was not capable of understanding the charge more particularly—

and in answer, the prisoner signified to me that he had been present at the housebreaking, and that two lads had been engaged in it, but that he was looking on, and took no part in it himself. He did not give me to understand how the housebreaking was effected, or how the property was disposed of, and indeed I put no questions to him on these points. I attended at the office of the Procurator-Fiscal, and was present there when Shields was brought before the Sheriff for examination, and at the request of the Sheriff I again endeavoured to ascertain the extent of the prisoner's ability for communicating his ideas by language and other signs; and I was also present when certain questions were written down and presented to the prisoner, and when he attempted to read them, and wrote answers in his own way. The first question that was put to him was, 'How many persons are in this room?' And on reading it, the prisoner seemed incapable of understanding it, and accordingly wrote no answer to it. It was plain to me that the prisoner himself had not the power of communicating his ideas in writing, and his education was so imperfect that he could not be made to comprehend many questions that might have been asked of him. In particular, I found it impossible to communicate to him in reference to the charge against him, that he need not say anything regarding it except he chose, or that he was at liberty to give any account of the matter that he liked. I read over a declaration said to have been emitted by the prisoner through the interpretation of an officer, and found there were statements in it quite at variance with what the prisoner signified to me, such as where he was born; and it was perfectly obvious to me the prisoner had not the power of communicating many of the statements that were therein detailed, and the probability is, that the officer, in attempting to communicate the questions which were required to be asked, had done so under the impression that the prisoner was comprehending them, and had received some sign from the prisoner which the officer may have supposed significant of assent. I observed that the officer conversed with the prisoner partly by means of the manual alphabet, and partly by arbitrary signs, and the officer appeared to me to have been in the habit of conversing with him, and to have a ready power of communication with him by natural signs, apart from written language; but still I am perfectly satisfied that the officer could not communicate to him the idea that he was not bound to criminate himself, or say anything in reference to the charge against him. I think it right, after what I have said, to state that the prisoner appears to be

possessed of considerable powers of mind, and that he seems to understand distinctly that he is liable to punishment ; and he signified that he would go over the seas for seven years, which he indicated by holding up seven of his fingers, and with his hand imitating the movements of a ship at sea.”—On the statement of Mr Anderson, the Sheriff declined to proceed with Shields’ examination, and the declaration emitted under the interpretation of the officer was not used on the trial.

On the subject of rendering the deaf and dumb responsible to the laws on a criminal charge, an interesting case, which was also connected with Glasgow, is reported in *Hume on Crimes*, vol. i., p. 45. The same difficulty was felt in this case as in that of Shields, in ascertaining whether the panel comprehended the nature of the plea. The case is stated in Hume as follows :—

“ Whether a person born deaf and dumb is an object of trial and punishment, came to be tried for the first time with us, in the case of Jean Campbell *alias* Bruce, who was indicted at Glasgow, in April 1817, for the murder of her own child, of three years old, by throwing it from the Old Bridge there into the Clyde, where it was drowned. The question being new, the Lords on the Circuit certified the case for the consideration of the High Court. A minute was entered for the prosecutor on record, bearing that he had no doubt of the panel being now, and having been from her birth, deaf and dumb, and that she had received no education ; but that he would prove, by the evidence of persons who had visited her in jail, that she knows right from wrong, and is aware that punishment is the consequence of guilt, and that she is able to conduct herself properly in all the ordinary affairs of life. The depositions were accordingly taken by a physician, and by the master of the Establishment for the instruction of the Deaf and Dumb at Edinburgh, who had been thoroughly educated in the art of instructing deaf mutes ; and on advising these, with informations on the case, the Court (17th July 1817) being satisfied with respect to her power of communicating her thoughts, and her intelligence of right and wrong, found that she might be put on her trial, and remitted the case accordingly to the Judges on the next circuit at Glasgow. It appeared from the testimonies taken, that she could write the initials of her name, that she had some notion of the nature of marriage, that she knew clearly the criminality of theft, that she understood that she was in custody on account of the death of her child, and that she was punishable if she killed it wilfully ; and she repelled with marks of

indignation the imputation of having done so. She had also, by signs and gestures, very intelligibly told her story of the child having accidentally slipped, and being unfastened, from her shoulders while she put her hand to her own breast to search for the money, and was resting the child on the parapet of the bridge. This dumb show she indeed repeated, and went through with equal significancy in the face of the Court.

"Her trial was accordingly insisted on at Glasgow, on the 24th of September 1817. She then pleaded not guilty; and this she did, by communicating in the like dumb show with a skilful interpreter (Mr Kinniburgh), the above-mentioned teacher of the deaf and dumb. The evidence was in her favour, and she had a verdict of Not guilty."

The previous discussion took place on the 17th July 1817, and the evidence given on that occasion by Mr Kinniburgh of the Edinburgh Deaf and Dumb Institution, is reported by the newspapers of the day. The woman communicated to him, by means of signs, that when the accident happened she was intoxicated—"the child was upon her back, covered with her petticoat and a duffle cloak, and, as he understood her, she had held them together upon her breast with her hand, while she rested the child upon the parapet of the bridge, over which the child fell, while she was in the act of putting her hand in her bosom, where she had money, and which she was afraid was lost; and by so putting her hand in her bosom he understood she had lost hold of the child, at which time the child was asleep, and had then fallen over the bridge. So far as he could understand the prisoner, she appeared to be a woman of a powerful mind, and nothing seemed to have been wanting, humanly speaking, to have saved her from the pitch of depravity she had attained, but some hand to have opened to her the treasure of knowledge in proper time; that he conceives that the prisoner must be possessed of the power of conscience in a certain degree, and that she seems a woman of strong natural affection towards her children, as he was informed by different persons at Glasgow, and which she manifested by the indignant denial of the charge of having wilfully killed her child, and her immediate assertion that it lost its life by accident." "Being interrogated by the Court, whether he is of opinion that the prisoner could be made to understand the question, *whether she is guilty or not guilty of the crime of which she is accused?* answers, that from the way he would put it, by asking her by signs whether she threw her child over the bridge or not, he thinks she could plead not guilty by signs, as she always communicated to him, and this is the only way in which he

can so put the question to her ; but he has no idea, abstractly speaking, that she knows what a trial is, though she knows she is brought into Court about her child ; she has no idea of religion, although he has seen her point as if to a Supreme Being above ; and communicates merely by natural signs, and not upon any system."

The difficulty attending the case was felt to be so great, that the opinion of the late eminent metaphysician, Dr Thomas Brown, Professor of Moral Philosophy in the University of Edinburgh, was taken upon it by the Depute-Advocate. It was given as follows :—

" In the present case there seem to be *many* questions.

" In the *first* place, is the panel capable of knowing the moral difference of actions, as right or wrong ? On this point I have no doubt whatever, at least with regard to a crime like that which is the subject of the present prosecution. If there be any *original* moral power of discrimination like that which has been properly called the *moral sense*, it is quite clear that deafness does not preclude that which is as much a part of the constitution as the sense of sound itself ; and if we suppose the moral feelings to be the *result* of various observations and sympathies, and tender remembrances, there is surely no reason for asserting, that an adult strong-minded deaf person is incapable of *forming the associations* which are supposed to give birth to the moral regard. The *sense of sound* is surely not more important *in itself* than the *sense of sight* ; and though, *as the medium of language*, it cannot fail to convey much instruction as to the *consequences* of actions, it still *presupposes* a tendency to feel approbation of actions that are beneficial to others, and disapprobation of actions of which the only object is injury ; without which previous tendency to feel the emotion, the nice analysis of the consequences of the actions would be of no value. I am far from thinking that the panel has such refined feelings of this sort as those possess who have the advantage of letters. *Her* feelings must be rarely called forth, because they are called forth only by events that really take place or have taken place before her very eyes ; while literature is continually surrounding us with real or imaginary *doers* and *sufferers*, whom we have never seen. But that *murder* is worthy of disapprobation, or in other words is *wrong*, she knows probably as well as the greater number of those human brutes who are condemned for the perpetration of it. Indeed, I have little doubt that *her* feelings of moral abhorrence of such a crime are *more* vivid than those of many young ruffians, the children of older ruffians, who have been

fostered in vice, and who have had the sense of language only to hear curses and blasphemies, and the mockery of everything pure and kind. You do not allow this bad education to be pled in bar of a criminal prosecution, and as little, on *this* ground, should deafness be admitted.

"All this reasoning is *a priori* as it were—but in Mr Kinniburgh's evidence, you have, I think, sufficient proof of an indignant repelling of the charge of murder, which might of itself be considered as implying her *capacity of moral feeling*.

"In the next place, is she capable of knowing that, when she did wrong, she exposed herself to punishment?

"That a deaf person is *capable* of knowing this, I think, cannot be doubted, if his observations have been wide, and if he be capable of knowing right from wrong. *He*, like other people, may see some one do what is wrong, and may afterwards see the same person caught in the act, seized by force, beaten by the individual whose property or person he was injuring, or carried away to prison in spite of his struggles:—what has *preceded*—what has *followed*,—a deaf person is equally capable of combining in his mind as other people; but he knows *fewer* antecedents and consequents, because all which he knows must have been observed by himself. He does not know, therefore, with so much precision that *crimes* are followed by punishment, because he can know this only of the particular crimes which he has had personal opportunities of observing to be so followed; and if he never *saw* any punishment follow, he probably never would conceive it to be a physical consequence, more than he would have conceived *a priori* that a charged electric battery would give a shock: an adult, however, can scarcely fail to have made such observations; and, accordingly, it appears in evidence that the panel, in this case, has a notion that her detention in prison arises from the supposition of her having murdered her child.

"In the next place, it is necessary that, in order to render the panel a fit subject of trial, she should be supposed capable of knowing the *law* that has been violated.

"By a *fiction* in this country, every body is *supposed* to know the existing laws to which he has virtually consented. This fiction, which is evidently *untrue* in innumerable cases where nobody conceives the criminal to have known the particular penalties to which he was exposing himself, is *physically impossible* in the present case, and this physical impossibility may perhaps be a technical bar. But of *that* I am not *lawyer* enough to judge. As a *moralist* I should

be inclined to say that it is no bar. It is sufficient if the panel have known that she was doing that which was *morally wrong*, and if the punishment awarded be in proportion to the offence."

IV. *On the Importance of Sleep as a Preventive of Insanity.* (From the American Journal of Insanity, No. IV.)

In our opinion, the most frequent and immediate cause of insanity, and one the most important to guard against, is the *want of sleep*.

So rarely do we see a recent case of insanity that is not preceded by want of sleep, that we regard it as almost the sure precursor of mental derangement.

Notwithstanding stronger hereditary predisposition, ill-health, loss of kindred or property, insanity rarely results unless the exciting causes are such as to occasion loss of sleep. A mother loses her only child, the merchant his fortune; the politician, the scholar, the enthusiast, may have their minds powerfully excited and disturbed; yet if they sleep well they will not become insane.

We find no advice so useful to those who are predisposed to insanity, or to those who have recovered from an attack, as to carefully avoid everything likely to cause loss of sleep, to pass their evenings tranquilly at home, and to retire early to rest.

Long continued wakefulness disorders the whole system. The appetite becomes impaired, the secretions diminished or changed, the mind dejected, and soon waking dreams occur, and strange phantoms appear, which at first may be transient, but ultimately take possession of the mind, and madness or death ensues.

We wish we could impress upon all the vast importance of securing sound and abundant sleep; if so, we should feel that we had done an immense good to our fellow-beings, not merely in preventing insanity, but other diseases also.

We are confident that the origin of much of the nervousness and impaired health of individuals who are not decidedly sick, is owing to a want of a sufficient and quiet rest. To procure this, should be the study of every one. We fear that the great praise of early rising has had *this* bad effect—to make some believe that sleep was but of little consequence. Though it may be well to arise with the sun, or when it is light—not before however, yet this is of minor consequence in comparison with retiring early to bed.

Labouring people should retire as early as *nine* in the evening, and all others by *ten* or *eleven*. Those who are liable to have disturbed sleep, should take especial care that their evenings pass tranquilly. Many are injured by attending theatres, parties, balls, or other meetings in the evening, by which they are so much agitated that their sleep is broken and unquiet.

The practice of spending the evening in some of the objectionable methods just mentioned, is now far more common among all classes than formerly, and is, we apprehend, one cause of the increase of nervous diseases. * * *

To procure sleep, it is important, in the *first* place, that the mind should not be disturbed for several hours before retiring to rest.

2*d*, Retire early, and when neither very warm nor cold; sleep on a hair mattress, or on a bed not very soft. The bedroom should be large and well ventilated, and the bed should not be placed near the wall, or near a window, as such an arrangement often exposes the person to currents of cold air.

3*d*, There should be nothing tight about the neck; and the Chinese rule of brushing the teeth before retiring, is a good one. Tea or coffee taken late in the evening is apt to disturb sleep. Strive to banish thought as much as possible, or take up but the most dull subject. Study during the evening is improper.

Some few persons, we know, are able to perform much mental labour, and to study late at night, and yet sleep well. Some require but little sleep. But such individuals are very rare. General Pichegru informed Sir Gilbert Blane, that during a whole year's campaign, he did not sleep more than one hour in twenty-four. Sleep seemed to be at the command of Napoleon, as he could sleep and wake apparently at his will.

The present minister of France, M. Guizot, is a good sleeper. A late writer observes, "His facility for going to sleep, after extreme excitement and mental exertion, is prodigious; and it is fortunate for him he is so constituted, otherwise his health would materially suffer. A minister in France ought not to be a nervous man; it is fatal to him if he is. After the most boisterous and tumultuous sittings at the Chamber, after being *baited* by the opposition, in the most savage manner—there is no milder expression for their excessive violence—he arrives at home, throws himself upon a couch, and sinks immediately into a profound sleep, from which he is undisturbed till midnight, when proofs of the *Moniteur* are brought to him for inspection."

II. CASES AND FACTS.

I. *On the Organs of Destructiveness and Combativeness in the Carnivora.* By Mr CHARLES PRENTICE, Cheltenham.

I have heard an objection adduced by no mean authority against Comparative Phrenology, which it maybe worth while to consider:—It is this; that the skulls of neither the lion nor tiger display the phrenological organ of Destructiveness in a pre-eminent degree, compared with the skulls of many other carnivora. When we look at the heads of the large felinæ, we are struck by the breadth of the head behind the ears, and by the prominence of the zygomatic arch, which imparts a more striking air of ferocity to the physiognomy of an animal than mere width of the skull; but on stripping the thick integument from the head, and cutting through the enormously convex zygoma, we find a thick mass of muscle filling the cavity between the malar and temporal bones and internal face of the zygoma, to which the breadth of the head is in a great measure owing. The *skull* of neither the tiger nor lion displays such remarkable breadth in the region of Destructiveness, as do the skulls of many other carnivora; and, paradoxical as the statement may appear, I think this is in precise harmony with their actual disposition, and that they do not exhibit anything like the same real ferocity as some of the smaller digitigrada, in which Combativeness and Destructiveness, especially the latter, are more strongly indicated, both in the skull and character.

These organs are especially given to overcome resistance, and to destroy, by their deadly energy, any opposition which the possessor, whether biped or quadruped, may experience; but it is obvious that very few animals, (perhaps only one, which the lion and tiger never attack,) are capable of offering much, far less effectual, resistance to animals so powerfully endowed with offensive weapons, and the concomitant muscular strength to use them, as these two tyrants of the forest. The unlimited power of destroying which such an endowment confers, is well calculated to make the animal rather prodigal in the use of such means. The same has been seen in men who gave no promise of the ferocious cruelty they subsequently displayed, till in the possession of despotic power. Tiberius, Commodus, and Maximin, are cases in point. Again, the Spaniards and Dutch were guilty of monstrous barbarity to the autochthones of their South American colonies, merely because they possessed irresponsible power;

though, had they remained subject to the restraints of civilization, such detestable characteristics would have been manifested in a very inferior degree.

We see in nature means exactly proportioned to ends, the former not exceeding the latter, but being merely sufficient; therefore, a *full* possession only of the impulse to attack and destroy being all that was requisite for the existence of carnivora so powerfully endowed, we find such a development only of the phrenological organ in the skulls of the larger cats. Had it been otherwise, they would have been more dreadful than they are; and, instead of being the agents of repression of the fecundity of the Pachydermata and Ruminantia, they would have been the exterminators of those orders. It should also be remembered that these fearful qualities, so modified in man by moral and intellectual counteractions, have no such antagonists in the carnivora.

Much has been said of the ferocity of the tiger and lion, and much is now being said by popular lecturers of the enormous destructive energy of the microscopic inhabitants of infusions; but difference of size makes it fearful to us in the first instance, and almost ridiculous in the latter, just as a Micromegas would be disposed to consider the fiercest conflicts of man and animals in our globe altogether contemptible.

It may be safely averred, that neither the tiger nor the lion ever displays extraordinary courage; they both prefer man for prey, when experience has shewn them how physically weak and incapable of resistance he is; while the timid antelope, clumsy ox, and terror-stricken horse, are ill calculated to resist their means of offence, or call forth any necessity for courage on the part of the powerful assailants. When driven to bay they do indeed shew much ferocity; but can this be called courage? It is the mere effect of despair, which equally impels the stag to turn upon his pursuers, and to perish with his enemies. Although Destructiveness is decidedly the largest organ in the skulls of the larger cats, and will consequently decide the cast of character, I contend it is not so very largely developed as to communicate an insatiate propensity to destroy, without reference to food or safety. The tiger is perhaps the most ferocious of the large cats, but it is also the least sagacious, and natural sagacity or educability is a great modifier of these more dangerous propensities; but I could adduce many anecdotes to prove that the lion rarely displays gratuitous cruelty, and that what has been said of the tiger is much exaggerated. In the *Zoological Journal*, vol. i., pp. 542-54 (Pl. xxi), there is a full descrip-

tion by Dr Horsfield of the *Felis Macroscelis*, the disposition of which is described as being remarkably playful, and devoid of ferocity, though it is endowed with remarkably muscular limbs; "and in point of size," says the Doctor, "our animal is superior to the panther, from which the leopard has not as yet been clearly discriminated; *but, by the strength and size of its extremities, it appears more nearly allied to the tiger than with the panther of the Old World, or the jaguar of America.*" And yet, as I said before, its habits, both in the wild and domestic state, are described as comparatively harmless; it is not feared by the inhabitants of Sumatra, badly armed as they are, as it preys only on large birds, and the small deer which constitute so curious a feature of the zoology of the East Indian Archipelago.

It is in the lower and smaller tribes of carnivora that we must look for the greatest ferocity; in these we find a corresponding development of the cerebral organs, and it is their office to check the fecundity of far more fertile tribes of animals than either Pachydermata or Ruminantia. Compare the skull of the tiger with that of the polecat, marten, weasel, or otter, and the square full proportions of the skull behind the origin of the zygoma is much more striking in the latter: and if we consider the natural history of these smaller animals, we shall find them displaying far more ferocity than the lion, tiger, or jaguar. The cats require their Destructiveness to be aroused by a living prey; not so the wolf, hyæna, and dhole, which will worry an apparently dead quarry. Again, the dogs and musselidæ are generally remarkable for the tenacity with which they pursue their prey—which appears to me to be owing to the energy of Destructiveness in these tribes; whereas the cats, it is well known, desist after the first or second unsuccessful attempt: it is true, they are not so capable of prolonged motion as the other tribes; but there must be cerebral endowment to correspond. The fierceness and courage of the weasel and ferret are very remarkable; a rat, weighing four or five times as much as either, falls a certain prey, yet it will inflict severe wounds on its assailant, and for a time the superiority will appear on its side—but by degrees the indomitable ferocity of the weasel or ferret prevails over the weaker impulses of its prey, which resigns itself the victim of a stronger will, overcome, and, as it were, fascinated. The weasel is well known to attack and destroy the hare and rabbit, but the disproportion of size is greater than between the elephant and lion, which latter never voluntarily attacks the former, though it may be compelled to do so in self-defence.

The weasel has been known to shew a threatening front to man himself, otherwise than in defence of its young, which will give temporary courage to the most timid animals.

The same is predicable of birds of prey : the larger of these, especially the vultures, condors, &c. do not possess the same degree of courage and ferocity as their smaller congeners ; the harpy eagle may possibly be an exception, but, being a rare bird, its ferocity may be exaggerated. The want of courage in the kite corresponds with its comparative narrowness of skull, and contrasts strikingly with the broad, flat head of the smallest of our indigenous falcons, the merlin ; the skull of the golden eagle is proportionally less wide than those of the sparrow-hawk, merlin, and the American *Falco sparverius*.

Again, there is an obvious difference in the manifestations of Destructiveness and Combativeness in animals. It is common enough with the smaller of the digitigrade carnivora to destroy apparently for the sake of destruction ; but the hawks, in which Combativeness is much more developed than Destructiveness or Secretiveness, never, I believe, kill more than a single victim at each meal, and that merely for the gratification of hunger.

All the cats, it is true, shew Secretiveness ; but it is more indispensably necessary to them than to any other tribe of animals, their general great size rendering them otherwise easily discoverable by their intended victims, and their incapacity for prolonged velocity of movement leaves no alternative between securing their prey by a spring, or dying by starvation. The lion and tiger, having once secured a sufficient meal, devour it quietly, and sleep till hunger demands a fresh supply ; but the wolf, fox, otter, weasel, mephitis, viverra, ichneumon, &c. so far as their habits are known, all display an appetite for bloodshed, independently of any necessity for the gratification of hunger ; and in their skulls, as no one can deny who has inspected them, that part of the brain assigned by phrenologists as the seat of Destructiveness and Secretiveness is more developed than in any other animals whatever.

It is rather remarkable that these same organs are more conspicuously evident in the smaller than in the larger cats (compare, for example the skull of the wild cat (*Felis catus*) with that of the tiger), as if an increase of cunning were necessary to supply the decrease of muscular strength ; just as, in men, artfulness is rather an evidence of weakness than of power.

It is, I repeat, on account of the large size of the members of the genus *Felis* that their ferocity has been magnified ; but, personal considerations out of the question, I think any unprejudiced naturalist will admit, that these animals are greatly excelled in their more dreaded qualities by creatures whose much smaller size renders them incapable of inflicting serious personal injury on a human enemy.

In conclusion, I will select three animals, in one of which Combativeness is much superior to Destructiveness ; in the second, Destructiveness is superior to Combativeness ; and in the third, they coexist pretty equally—and thus contrast their characters.

1. In some varieties of the spaniel, as the Suffolk water rug, I have seen combative courage present in the very highest degree, accompanied by remarkable width of the head between and rather behind the ears. This animal possesses great sagacity, has been accustomed to obey man, and consequently is easily governed by its master, soon contracts friendship for those who treat it kindly, and is neither sullen nor cruel, but of an open, social disposition ; but in combats with other dogs, especially when unexpectedly and unjustly provoked, it displays the most desperate courage.

2. In the wolf, Destructiveness predominates over Combativeness, and the character is unamiable and treacherous accordingly ; it displays no sociality, and will devour the wounded or sick of its own species. When it has gained access to a number of defenceless victims, it will destroy more than are requisite to satisfy hunger, but will rapidly retire when any thing calculated to excite suspicion occurs. If caught in a trap, it will allow itself to be taken out and hamstrung ; for it is cowed by its position, and does not possess a predominant Combativeness : but when its life is threatened by dogs, its Destructiveness imparts energy and ferocity to its character, and it defends itself with the most desperate determination.

3. The bull-dog and blood-hound possess Combativeness and Destructiveness in nearly equally large proportions ; neither displays a high degree of educability, unless the use which the latter can be induced to make of its nasal acuteness be considered such. Their dispositions are sullen and unsocial. They will attack animals much larger than themselves with reckless ferocity, and, not content with overcoming, will invariably destroy, if able. It is not easy to frighten them by a mere shew of resistance ; and they take a pleasure

in conflict, which can only be accounted for by the presence of a powerful instinct.*

1 OXFORD VILLAS, CHELTENHAM,
November 12, 1845.

II. *On Hatters' Measurements, as a source of Evidence of the Average Size of Heads.* By JAMES STRATON, Secretary of the Aberdeen Phrenological Society.†

Our next source of evidence [of the average size of heads] is the measurements in use by those engaged in the hat business. This, at the first glance, may appear to some to be of little value for our present purpose, inasmuch as we only obtain the measurement of the head in one line. Hat measure, or even a series of two, three, or more measures taken in a similar way, is, unquestionably, altogether worthless, when applied to measure the absolute size of *individual* heads. But, when used so extensively as to ensure an average shape of head for each size in the series, the case is entirely altered. Now, hat measure being so extensively applied as to secure, beyond all doubt, an average shape to each size, it becomes legitimate for our purpose, provided we know the average dimensions of head corresponding to each size of hat. This I have endeavoured to ascertain by an extensive series of comparisons, and submit the following table as an approximation to the truth.

Hat.	C. inches, Head.	Hat.	C. inches, Head.
8 . .	200 to 220	6½ . .	120 to 135
. . .	190 „ 210	6¼ . .	110 „ 120
7½ . .	175 „ 195	6# . .	100 „ 110
7¼ . .	160 „ 180	6½ . .	90 „ 100
7½ . .	150 „ 165	6¾ to 6 .	80 „ 95
7¾ . .	140 „ 155	6 „ 5 .	50 „ 80
7 . .	130 „ 145		

It would not be difficult to give a much more definite value to each size than I have ventured to state. It would be somewhat laborious; but it may be made so extensively useful in determining both local and general peculiarities of size,

* This able paper is intended by Mr Prentice merely as an *argumentum ad hominem*; for, as has been repeatedly urged in this Journal (x., 27; xiv., 264, 389), no exact conclusions can be drawn from the comparison of heads of animals of different species.—ED.

† Extracted from Mr Straton's *Contributions to the Mathematics of Phrenology*, reviewed in our last Number.—ED.

that, to facilitate future investigations, I would respectfully suggest that phrenologists should combine their observations, in order to determine the value of each size as soon and as nearly as possible.

It ought to be noticed that there is a slight difference, to the extent of half a size or rather more, in the standards of different manufacturers. I have based my table on the standard in most general use among the English firms.

Of the statements given me by a number of most respectable parties, whose experience in the hat business extends from ten to fifty years, I present the following brief summary :

The average size of the Scotch adult male heads is between 7 and $7\frac{1}{2}$ (130 to 155), rather nearer the latter than the former, say 147 C. inches. The average range of sizes is from $6\frac{1}{2}$ to $7\frac{1}{2}$ (120 to 165). $6\frac{1}{2}$ (110 to 120) is rather rare, and sizes below that very rare. That $7\frac{1}{2}$ and $7\frac{3}{4}$ (160 to 180) are not unusual,— $7\frac{1}{2}$ is rare, and above that very rare. The adult female head averages about 125 inches, and the range of sizes is from 10 to 20 inches below the male head.

It is a general opinion that the size of the head varies to the extent of one size up or down in different localities. The Aberdonians, for example, get credit for being rather above the average of the Scotch. The fishing communities along the coast, and the native Highlanders, are considered rather below the average. The examination of general features is what I here confine myself to, leaving local peculiarities till much more extensive evidence be accumulated. I shall only remark, in passing, that the evidence I possess is not conclusive regarding the superior size of the Aberdonian heads : as to the fishing communities which I have had an opportunity of seeing, the prevailing opinion is borne out by some villages, and not so by others.

In an excellent paper by a London hatter, published in the *Edinburgh Phrenological Journal*, vol. iv, we are furnished with an extensive chain of evidence on the size of hats required in various parts of England. I have heard the statements contained in that paper confirmed in many particulars (not in all) by gentlemen extensively connected with the business ; and confidently offer a summary of the general details. The average size of the English adult male head is 7 (130 to 145), and the average range from $6\frac{3}{4}$ to $7\frac{1}{2}$ (?) (80 to 185). The female head ranges from $6\frac{3}{4}$ to $7\frac{1}{2}$ (80 to 155). In the lower ranks of life the majority are below 7. In Spitalfields, Coventry, Essex, Hertford, Suffolk, and Norfolk, $6\frac{3}{4}$, $6\frac{1}{2}$, and $6\frac{1}{4}$ (80 to 110) are prevailing sizes of male heads. Devonshire and Herefordshire average above London. Lancashire,

Yorkshire, Cumberland, and Northumberland, have more large heads, in proportion, than any other part of the country.

The evidence, based on hatters' measure, may be summed up thus :—

	Average.	Average range.
Scotch adult Male.....	147 cubic inches	120 to 165
„ Female.....	130	100 „ 145
English adult Male.....	137	80 „ 170 (?)
„ Female.....	120	80 „ 155

The evidence already quoted in this department is derived from sources so completely independent of each other, and, though varied and extensive, is nevertheless so harmonious the different parts with each other, and with phrenological observation in general (exemplified in the Tables, pages 9 and 10), regarding the different races of mankind, that it appears to me to furnish an approximation to, *first*, the *average size* of head ; and, *second*, the *average range* of sizes of the different races, which is not likely to be materially altered until phrenological observations have been extensively accumulated among each race on its native soil.

Additional Remarks by Mr Straton.

In the *Contributions to the Mathematics of Phrenology*, p. 18, I have stated, on the evidence of hatters' measure, that the Scotch adult male head averages 147 cubic inches. This appeared so much above all the other races and nations of whom we have statistics, that I hesitated long about admitting it. Nevertheless, as the evidence would support no other conclusion, I felt compelled to abide by it for a time. I have now to add, that since the *Contributions* were published, I have been favoured with the opinions of several very intelligent phrenologists engaged in the hat business ; and they are unanimous that my statements are under, rather than over, the truth. It will perhaps be as well, however, to leave the numbers unaltered in the mean time, till more abundant positive evidence be accumulated on the point. As it is of the greatest importance to secure accuracy, as nearly as possible, in the evidence which may be procured, I beg to submit, for the notice of inquirers, one or two sources of fallacy which are likely to vitiate this source of evidence to some extent, if not duly guarded against.

First, It is well known that the larger sizes of hats are more generally required by the higher or more wealthy classes of society than by the lower. It is well known that each individual of the higher classes purchases, on an average of a

number of years, a greater number of hats than each individual of the lower classes. The poor man takes great care of his new hat for a considerable time; he wears it only on holidays. And, farther, the lower classes wear a great number of caps and bonnets; whilst the higher use hats on almost all occasions, except when travelling occasionally.

It is obvious from these considerations, that were we to estimate the relative number of large and small heads, in a given place, by the proportions of large and small hats sold to the inhabitants in a given length of time, we should over-estimate the number of large heads, and fix the average size of the whole somewhat too high. Those conversant with the hat business would, therefore, greatly increase the accuracy and value of the information which they can give, if they would state the relative proportions of their customers who require the different sizes of hats, instead of the relative proportion of hats of each size which they sell in a certain length of time.

Secondly, Some persons have very strong and thick, others very fine and thin, hair on their heads. This will make a difference of a size or nearly so (especially at times when it is fashionable to wear the hair long), on two heads which are, in reality, the same cubic measure. It follows, of course, that the different sizes of hats required by such heads ought to be noted and equalised.

Thirdly, Hat manufacturers, as is well known, do not use a precisely uniform scale of sizes. Phrenological observers should, therefore, measure the hat as well as the head of the wearer. It is easily done thus:—Add the greatest length to the greatest breadth (measured in the part of the hat which touches the head); divide the sum by 2; the quotient is the size of the hat. Or measure the circumference of the head on the line where the hat rests, and find the size by proportion, thus—As 22 is to 7, so is the circumference of the head to the size of the hat. The latter is the better mode, because the hair can be displaced.

On a small ivory scale used for measuring hats we find the circumference of head and corresponding size of hat stated thus:—

Head,	18½	18¾	19¼	19½	20	20½	20¾	21¼	21½	22	22½	22¾	23¼	23½	24	24¾
Hat,	5¾	6	6½	6¾	6¾	6¾	6¾	6¾	7	7½	7½	7½	7½	7½	7½	7½

A very intelligent friend, who is well acquainted with the hat business in Edinburgh, Glasgow, and Aberdeen, has favoured me with the following particulars:—"There is a very general tendency among the Scotch hatters to raise the standard of measure; whilst in England, particularly in London,

the reverse occurs ; so that, whilst the measure of my hat may be (say) $7\frac{1}{8}$, it would be called $7\frac{1}{2}$ in London, and $7\frac{1}{4}$ in Scotland ; thus accounting, in some measure, for the preponderance in size taken credit for by the Scotch over the English head.

“ The general sale of hats may be stated as follows :—

Size,.....	$6\frac{1}{4}$	$6\frac{1}{2}$	$6\frac{3}{4}$	$6\frac{7}{8}$	7	$7\frac{1}{8}$	$7\frac{1}{4}$	$7\frac{3}{8}$	$7\frac{1}{2}$	$7\frac{5}{8}$
144 Best quality,.....	2	2	10	16	20	30	30	16	12	6
144 Medium,.....	2	4	18	24	30	28	24	8	6	0
144 Common,.....	2	6	24	28	30	30	18	6	0	0
432	6	12	52	68	80	88	72	30	18	6

The smallest size of a hat which I have sold to full-grown men is $6\frac{1}{4}$, which is extremely rare. The largest size is 8 inches. Youths require from $6\frac{1}{4}$ to $7\frac{3}{8}$; females, $6\frac{1}{4}$ to $7\frac{1}{4}$. These, from the manner they wear the hat, do not require so large a size to fit the head as males do. There is not so great a range in sizes among female as male heads. In size of head, the higher classes in Edinburgh are much the same as in Aberdeen ; the other classes are a shade less. In Glasgow, a much larger proportion of small-sized fine hats are sold than in the two former localities.”

III. *The Anterior Lobe of the Brain Traversed by a Bullet, without Lesion of the Intellectual Faculties.* Translated from the French, by PLINY EARLE, M.D., Physician to the Bloomingdale Asylum for the Insane. (From the American Journal of Insanity, No. IV.)

[This case is related in a letter addressed to the President of the French Academy of Medicine, by L. Blaquier, D.M.P., Member of the Academy of Mexico, and of the Royal Academy of Madrid. It was published in the *Journal des Connaissances Medico-Chirurgicales*.]

In the year 1843, an officer of cavalry lived with his family in the district of San Pablo, Mexico. A child of this man, aged 12 years, was imprudently playing with a brass pistol, with calibre for balls of 17 to the pound, when, at the moment his brother, four and a half years of age, was before it, the pistol was discharged. The ball entered the head of the little boy at the temple, traversed the brain, and came out at the opposite temple. Had death supervened in a few days, it is probable that a fact, even under those circumstances,

would have passed unnoticed by the physician who was called. But the prolonged duration of the case, and the extremely curious circumstance of the integrity of the intellectual faculties of the wounded boy, aroused this indifference, and a large number of the physicians of the capital were called to witness the fact—which had now existed twenty days.

This day, as on the following days, we found the young patient, with eyelids black and blue, sitting upon his bed, sometimes playing with his toys, impatiently calling for more food than was allowed, sufficiently cheerful when his wounds were being dressed,—a proceeding which *crossed* him more than it caused him to suffer—and enjoying the use of all the intellectual faculties of children of his age—and it is well known that they are precocious in this climate. His memory was perfect, judgment healthy, sleep a little interrupted—probably from want of exercise,—his character similar to what it was before the accident; corporeal functions intact.

The dressings being removed, the external wounds upon the temples were exposed to view. They were both situated about one and a half inches perpendicularly above the external angles of the eyes,—reference being made to a line drawn transversely to the vertical axis of the head. A large bullet probe (*stylet boutoné*) was introduced into each wound, to the depth of at least *twenty lines*, and it was evident that, with a little greater temerity, it might have been passed from one wound to the other. Enough was seen to lead to the conclusion that the head had been well scooped (*trouée*) from side to side, and that the ball had not passed around the cranium beneath the integuments.

Six additional days elapsed without any additional change in the condition of the patient, who was visited every day, and alternately, at the time of dressing the wounds, by a number of professional brethren, both Mexicans and foreigners.

At length the scene changed; unequivocal symptoms of inflammation appeared, and the little patient died on the twenty-ninth day.

An autopsy being made, the opening in the cranium where the ball entered was, as would naturally happen, smaller and better defined than that of the opposite side where the ball passed out. The anterior portions of both hemispheres were traversed by the ball. Anteriorly to its track, the cerebral substance was from six to eight lines in thickness. Above the track, the gray matter was uninjured; the ven-

tricles also were intact. Suppuration extended throughout the track, and the meninges were inflamed.

Note.—To the foregoing account we find added, that M. Blaquiére, who communicated it to the Academy, “considers it fatal to phrenological doctrines, as the seat of several important phrenological faculties was destroyed, and yet no functional lesion whatever of the brain was observed.”

We do not concur in this opinion of M. B., though we consider the case a remarkable one. It is scarcely more fatal to phrenological doctrines than to the well established doctrine, that the brain is the organ of the mind. The portion of the gray substance of the brain injured by the ball, was evidently *very small*—and therefore the seat of several important phrenological faculties *was not* destroyed; besides, we do not learn that the same portion of each hemisphere was injured. But was each mental faculty interrogated properly? All could not have been, as some are not manifested at so early an age. The patient may have had good memory on many subjects, and possessed many faculties in their integrity, and yet others be much impaired, though this might not be observed without very careful observation.

IV.—*Cerebral Development and Character of Catherine Davidson alias Mrs Humphrey, who was executed at Aberdeen, 8th October 1830, for the Murder of her Husband.* By JAMES STRATON, Secretary of the Aberdeen Phrenological Society.

The subject of this notice belonged to a class of characters with whom almost every phrenologist is familiar, and of whom were he called on to declare his convictions openly before certain facts appeared, he would feel not a little embarrassed. For some twenty, thirty, or forty years, as the case may be, a fair exterior has been maintained, and even a respectable character in some particulars acquired; yet a glance at the development impresses a strong conviction that if a single circumstance occur calculated to bring out a certain feature in bold relief, the whole aspect may be changed, and a fair character of forty years give place in an hour to that of the polluted outcast, shunned by all.

The difficulty of dealing honestly with such a case, is considerably increased, when, as in the present instance, the subject is a female;—because the peculiarities of female de-

velopment and circumstances lessen the chances of unamiable features of mental character being exhibited in a strong light. A striking feature of the present case is, that the female character is maintained throughout, even in the darkest deed, and the dying moments.

In recording her case, my object is twofold; *first*, to add an item to the mass of evidence already accumulated; and, *secondly*, to exemplify the mode of estimating development mathematically.

A good cast of the skull, in the museum of the Aberdeen Phrenological Society, exhibits the following dimensions:—

Breadth, $\left\{ \begin{array}{l} 5 \text{ to } 5, 7 \text{ to } 7, 8 \text{ to } 8, 9 \text{ to } 9, \\ 5\cdot1 + 5\cdot7 + 5\cdot1 + 4\cdot3 = 20\cdot3 \div 4 = 5\cdot1, \text{ average.} \end{array} \right.$

Height, $\left\{ \begin{array}{l} 1 \text{ to } 3, 22 \text{ to } 13, 6 \text{ to } 16, \\ 2\cdot6 + 2\cdot2 + 4\cdot2 = 9 \div 3 = 3, \text{ average.} \end{array} \right.$

Length, 3 to 30 = 6·8.

$5\cdot1 \times 3 \times 6\cdot8 = 104\cdot04$ cubic inches, the absolute size of the skull and inclosed brain, by the mode of measurement specified in my *Contributions to the Mathematics of Phrenology*, p. 8.

The measurements of the regions separately (*Cont.*, p. 25-7) are—

Anterior, $2\cdot2 \times 3\cdot1 \times \frac{4\cdot2}{3} = 9\cdot548$, say 10 cubic inches.

Coronal, $4\cdot2 \times 4\cdot6 \times \frac{4\cdot2}{3} = 27\cdot048$, ... 27 ...

Lateral, $3\cdot3 \times 4\cdot8 \times \frac{5\cdot1}{3} = 26\cdot929$, ... 27 ...

Posterior, $4\cdot5 \times 4\cdot5 \times \frac{4\cdot4}{3} = 30\cdot375$, ... 30 ...

Add $\frac{1}{10}$ not included above, 9·2

103·399 = proof 105 (*Cont.*, p. 5.)

The above dimensions being obtained, it is the simplest possible process to infer the size of the model or equally balanced cranium, in which each of the regions would find its appropriate place (*Cont.*, p. 28), viz., Divide the anterior by 1, the lateral by 2, the coronal and posterior each by 3, add a 0 to each of the quotients, when they represent the numbers required. Thus,

Anterior, $10 \div 1 = 10 + 0 = 100$ cubic inches, size of model.

Coronal, $27 \div 3 = 9 + 0 = 90$

Lateral, $27 \div 2 = 13 + 0 = 130$

Posterior, $30 \div 3 = 10 + 0 = 100$

The average size of the organs composing each region is, by the proposed scale (*Cont.*, p. 22), indicated by the size of the model to which it corresponds, and is simply a 0 annexed to our ordinary scale. The 0 may be either inserted or not, as may be thought most simple or convenient; but the size of organ meant, is, that it is equal to that in a model of the cubic inches represented when the 0 is annexed. In our present case, we have

Anterior,	100,	size of model,	and average	} “ 10 moderate.”
		of organs, or	.	
Coronal,	90,	...	...	} “ 9 rather small, or moderate.”
		
Lateral,	130,	...	...	} “ 13 rather full, or full.”
		
Posterior,	100,	...	...	“ 10 moderate.”

Up to this point of our progress, the cerebral peculiarities are determined mathematically, and with almost fractional accuracy,—with what, in practice, amounts to the same thing in many respects as entire accuracy; because the minute deviations from absolute truth which may be involved, and which are unavoidable in the present state of our knowledge, will be the same, and, of course, the result will be the same to all observers, however widely separated their field of observation may have ever been. It follows, that uniform and definite terms of size can be adopted and used with facility; the same terms conveying the same meaning to all parties on all occasions. Moreover, the terms of size being definite, and positive, or absolute, the *relative* size or proportions are obvious on a glance at the figures.

It remains for the eye to determine what organs in each region are above, and what below, and how much (*i. e.*, how many sizes) either above or below, the equal balance, guided by the average above determined.

The eye being thus limited in its range to one region at a time, and a defined average size, it is presumed that difference of opinion to the extent of one size, in estimating the individual organs, will rarely occur, especially when, as in the present instance, there is no reason to suspect that the depth of the convolutions in any part of the head deviates from the normal proportions.

I shall here use the ordinary terms of the scale, but in the sense already explained, namely, that the expressions “ 9 rather small, or moderate,” “ 10 moderate,” “ 12 rather full,” mean, that the organs to which they are adhibited, are con-

sidered equal in size to the same organs in a model head of 90, 100, 120, &c., cubic inches.

Mrs Humphrey's development may now be stated thus:—

ANTERIOR REGION, "10 moderate."

Organs the average size of the region—Size, Weight, Number, Order, Eventuality, Time, Comparison, all "10 moderate."

Organs one size above average—Individuality, Form, Locality, and Causality, all "11 moderate, or rather full."

Organs two or more sizes above the average—None.

Organs one size below the average—Wit, Colour, Tune, "9 rather small, or moderate."

Organs two or more sizes below average—none.

CORONAL REGION, "9 rather small, or moderate."

Average—Benevolence, Conscientiousness, Wonder, Ideality, and Imitation, "9 rather small, or moderate."

One size above average—Firmness, "10 moderate."

One size below average—Veneration and Hope, "8 rather small."

LATERAL REGION, "13 rather full, or full."

Average—Constructiveness and Cautiousness, "13"

Above—Destructiveness and Secretiveness, "14."

Below—Combateness and Acquisitiveness, "12."

POSTERIOR REGION, "10 moderate."

Average—Philoprogenitiveness, Concentrativeness, and Self-esteem, "10."

Above—Love of Approbation, "11."

Below—Amativeness and Adhesiveness, "9."

Arranged in the usual numerical order, the development stands thus:—

No.	Size.	No.	Size.
1 Amativeness . . .	9	19 Ideality . . .	9
2 Philoprogenitiveness . . .	10	20 Wit . . .	9
3 Concentrativeness . . .	10	21 Imitation . . .	9
4 Adhesiveness . . .	9	22 Individuality . . .	11
5 Combateness . . .	12	23 Form . . .	11
6 Destructiveness . . .	14	24 Size . . .	10
7 Secretiveness . . .	14	25 Weight . . .	10
8 Acquisitiveness . . .	12	26 Colouring . . .	9
9 Constructiveness . . .	13	27 Locality . . .	11
10 Self-Esteem . . .	10	28 Number . . .	10
11 Love of Approbation . . .	11	29 Order . . .	10
12 Cautiousness . . .	13	30 Eventuality . . .	10
13 Benevolence . . .	9	31 Time . . .	10
14 Veneration . . .	8	32 Tune . . .	9
15 Firmness . . .	10	33 Language . . .	...
16 Conscientiousness . . .	9	34 Comparison . . .	10
17 Hope . . .	8	35 Causality . . .	11
18 Wonder . . .	9		

Thus far we have been contemplating the development, the mental power and peculiarities, as indicated by the skull ; but in order to aid comparison, and facilitate a just appreciation of the character, we shall now substitute the head, with its corresponding peculiarities, as it must have appeared in life. This change implies an addition of 26 cubic inches to the size of the skull (*Cont.*, p. 14), and a proportionate increase (*i.e.*, two and a half sizes by our scale) to the separate regions and organs. This change gives us—skull $104+26=130$ cubic inches size of head, being the exact average size of the Scotch adult female head (*Cont.*, p. 18).

The regions will stand as follows, avoiding fractions.

Anterior, 12 inches,	120 model,	Average of Organs, "12"
Coronal, 33	110 ...	"11"
Lateral, 32	160 ...	"16"
Posterior, 39	130 ...	"13"

And the organs will be—

No.	Size.	No.	Size.
1 Amativeness . .	12	19 Ideality . . .	11
2 Philoprogenitiveness	13	20 Wit . . .	11
3 Concentrativeness .	13	21 Imitation . . .	11
4 Adhesiveness . .	12	22 Individuality . .	13
5 Combaticiveness .	15	23 Form . . .	13
6 Destructiveness .	17	24 Size . . .	12
7 Secretiveness . .	17	25 Weight . . .	12
8 Acquisitiveness .	15	26 Colouring . . .	11
9 Constructiveness .	16	27 Locality . . .	13
10 Self-Esteem . .	13	28 Number . . .	12
11 Love of Approbation	14	29 Order . . .	12
12 Cautiousness . .	16	30 Eventuality . . .	12
13 Benevolence . .	11	31 Time . . .	12
14 Veneration . .	10	32 Tune . . .	11
15 Firmness . .	12	33 Language . . .	...
16 Conscientiousness	11	34 Comparison . . .	12
17 Hope . . .	10	35 Causality . . .	15
18 Wonder . . .	11		

Temperament active, constitution robust. Age at death, about 40 years.

Here we have a head of the average size, a mind of the average power of the Scotch adult female ; with all the additional energy which an active temperament, a stout healthy frame, and preponderating lateral region, are calculated to impart. The intellect is average as a whole, and the leading faculties of perception and reflection rather above average. Mrs Humphrey was one of a family whose education was entirely neglected ; it therefore is probable she could neither

read nor write, so that her intellectual capabilities were confined to her natural shrewdness and sagacity. Her moral faculties are below the others, but not small, whilst Love of Approbation, Cautiousness, and Secretiveness would give powerful aid in manifesting the virtues fashionable at the time in her class of society. It is, in short, a mind calculated to lead among the lower and rougher of the female ranks, and only unequal to the sterner tasks which some of the other sex perform.

From the evidence given on her trial, the statements of acquaintances, and other sources, I have learned that Mrs Humphrey was active and bustling, fine skinned and healthy, stout, cleanly, tidy, and fond of dress ; smiling, affable, bland, and courteous to those present ; fond of gossip, tattle, railing, and detraction to those absent ; easily ruffled when crossed, and violent when roused. She could, nevertheless, restrain ebullitions of rage, and stifle, but not extinguish, resentment : she thus passed the greater part of her life with the character of a prudent, cautious, managing woman, in the multifarious duties which she undertook and discharged.

Her husband was a butcher, and kept a tavern. Mrs H. sold the meat in a booth on the market-days, and managed the tavern when not required in the booth. In this she acquitted herself as a civil, obliging, and discreet hostess.

Her husband became an habitual drunkard. This was the frequent cause of quarrelling and high words. One night, after being unusually outrageous and abusive, he went to bed, and fell asleep, as was his custom, with his mouth wide open. Mrs Humphrey took some vitriol in a glass, went on her stocking soles, and poured it down his throat. He died on the second day after. Mrs Humphrey was tried and convicted. She fainted while sentence of death was being pronounced, but passed through the subsequent steps of her existence with apparent calmness. She made a full confession of her crime. Her honesty, as regards property, was never called in question, even by public report, so far as I have been able to ascertain. On the scaffold she appeared resigned, took leave of the clergyman and others, dropt the signal, and never raised her eyes, or cast a single glance on the assembled multitude.

III. NOTICES OF BOOKS.

- I. *Explanations: A Sequel to "Vestiges of the Natural History of Creation."* By the AUTHOR of that Work. London: J. Churchill. 1845. Post 8vo, pp. 198.

In vol. xviii., p. 69, of this Journal, we reviewed the *Vestiges of the Natural History of Creation*. The work has excited an extensive and vivid interest in the public mind; it has been criticised in almost every journal in the kingdom; and five editions have appeared within little more than a year after its publication. The leaders in science have attacked it in decided terms, and the present *Explanations* have been elicited in answer to their objections. Somewhat inconsistently, however, the men of science did not confine their attention to its alleged scientific defects, but urged against it moral and theological objections, calculated to rouse popular prejudices against the unknown author and his work. The foremost among the assailants in this discreditable course of opposition were writers in the *Edinburgh* and *North British Reviews*, who are generally said to be Professor Sedgwick and Sir David Brewster. The *Explanations* are written in the same calm, clear, and philosophic style which characterizes the *Vestiges*; and whatever may be thought of the merits of the hypothesis, no enlightened and impartial reader can withhold his admiration of the author's talents and scientific learning, while the elevated views, the gentle, and we should say, reverential spirit, which pervade the work, afford pleasing evidence of the excellence of his moral dispositions. He states, that the object of the *Vestiges* was "to shew that the whole revelation of the works of God presented to our senses and reason, is a system based in what we are compelled, for want of a better term, to call LAW; by which, however, is not meant a system independent or exclusive of Deity, but one which only proposes a *certain mode of his working*." We can perceive no reasonable objection to such an inquiry, if it be conducted on scientific principles, and in a right spirit, which it assuredly is in the work in question. Our object at present, however, is not to enter into a discussion of the scientific merits of the hypothesis of "development," but to offer some remarks on its moral and religious bearing, regarding which, in our opinion, much error and prejudice are afloat.

The following questions appear to us to be distinct in themselves, although in the hostile reviews of the *Vestiges*

we have often seen them confounded:—1. Does the physical universe, so far as known to man, afford evidence of the *existence* of an intelligent arranging Cause? 2. Does it afford evidence of the form or state in which this intelligent Cause exists? 3. Does it afford evidence of the manner in which this intelligent Cause proceeded in constituting the universe? We believe that if philosophers and the public were in possession of clear ideas on these topics, much prejudice and vituperation against scientific investigations, and their supposed tendencies to atheism and infidelity, would be averted.

The author of the criticism in the *Edinburgh Review* says: “What know we of the God of nature (we speak only of natural means), except through the faculties He has given us, rightly employed on the materials around us? In this we rise to a conception of material inorganic laws, in beautiful harmony and adjustment; and they suggest to us the conception of infinite power and wisdom. In like manner, we rise to a conception of organic laws—of means (often almost purely mechanical, as they seem to us, and their organic functions well comprehended) adapted to an end—and that end only the wellbeing of a creature endowed with sensation and volition. Thus we rise to a conception both of Divine power and Divine goodness; and we are constrained to believe not merely that all material law is subordinate to His will, but that He has also (in the way He allows us to see His works) so exhibited the attributes of His will, as to shew Himself to the mind of man as a personal and superintending God, concentrating His will on every atom of the universe.”

We agree with the reviewer, that “we know nothing of the God of nature (we speak only of natural means) except through the faculties He has given us, rightly employed on the materials around us.” Let us inquire, then, what our faculties enable us to reach on this subject.

Our leading intellectual powers which take cognizance of the external world, are Individuality, Eventuality, Comparison, and Causality. Under Individuality we may here comprehend all the minor faculties, such as Form, Size, Colouring, and so forth, which enable us to perceive the qualities of objects. Individuality, then, gives us a conception of the *existence* of matter, but throws no light whatever on its *essence*. The essence or ultimate principles of matter are as completely beyond our conception as they are beyond that of the inferior animals. Eventuality observes the evolutions of matter, but its powers extend no farther; it ob-

serves the changes which take place in substances, whether organic or inorganic, and there its functions terminate. Comparison enables us to contrast one portion of our knowledge with another, and to perceive resemblances or differences; but it throws no new light on the essence or modes of action of the objects compared. It is to Causality that we owe the power of perceiving the relation of cause and effect. When two events are presented to our observation, the one following the other,—if they are contemplated exclusively by Individuality, Eventuality, and Comparison, they appear as mere phenomena or occurrences. No impression arises in the mind, of efficiency in the one to occasion the other. The universe, contemplated by these faculties, seems only as a collection of substances evolving certain phenomena, and the series of existence and events appears to be without beginning and without end. There are individuals in whom the organs of these faculties so much predominate, that this is the view which the universe actually presents to their minds. It is to the organ of Causality that we owe the first conception of *efficiency*. When this faculty contemplates a series of events constantly following each other in similar circumstances, it gives rise to an impression of efficiency in the antecedent to produce the consequent. It leads us to regard the antecedent as a cause, and the consequent as an effect. But its function terminates in giving rise to this impression. It does not enable us to penetrate into the essence or nature of the thing, so as to detect in what its efficiency consists. The ultimate nature of that which constitutes efficiency in, or communicates efficiency to, any existing object, is as much hidden from the human understanding as is the *essence* of matter.

What, then, do these faculties enable us to discover regarding the first question above alluded to—namely, Whether the physical creation, so far as known to us, affords evidence of the existence of an intelligent arranging Cause? We have no hesitation in answering that it does. To the three faculties of Individuality, Eventuality, and Comparison, the universe might appear as nothing more than an assemblage of objects undergoing changes; but Causality adds a perception of the adaptation of means to produce ends. It gives us the idea of design, and through the perception of design in nature we arrive at conviction of the existence of a presiding designing Mind. When we contemplate the agency of inorganic matter, as in the falling of a stone to the ground, or the attraction of steel to the magnet, we receive the impression of the efficiency of some quality re-

siding in the earth or magnet to produce these effects ; but, as already mentioned, we cannot obtain even a glimpse of its nature. In this direction, therefore, our researches are speedily cut short. If we saw nothing more than the exertion of power, Causality could not lead us to the discovery whether that power inhered in the essence of matter, or was communicated to it by an intelligent mind.

When, however, Causality and Comparison, acting together, survey the adaptations of different parts of the universe to each other, the conviction of a designing Mind presiding over the arrangements becomes irresistible. The sun, for example, is 95,000,000 miles distant from the earth ; yet we find in this sublunary sphere innumerable eyes in men and animals adapted to its rays. The annual revolution of the earth around the sun, gives rise to a succession of various seasons, and we find all vegetable substances adapted to the different degrees of temperature consequent on this succession. In descending into the minuter departments of being, the adaptations are found to be innumerable, and interesting in the highest degree ; but they are so well known that it is unnecessary farther to allude to them here.

None of our faculties gives us the least reason to suppose that the sun is an intelligent being, or that it, of design, produced this adaptation ; or that the earth is such a being ; and we know positively that neither the human eyes nor the substances which constitute the vegetable kingdom are themselves intelligent agents. Here, then, is an intelligent adaptation of objects which in themselves are wholly unintelligent, to produce beneficial effects. From the contemplation of such phenomena, Causality leads us to the conclusion that an intelligent arranging Cause of the universe exists.

The second question is, Whether the universe affords evidence of the *form* or state in which this Cause exists ? It appears to us that the answer must be in the negative. Before we can judge of the *form* in which a cause exists, it must be submitted to the faculties of Form and Individuality. Mr Combe, in his *System of Phrenology*, under the head of Causality, observes : " When a watch is presented to us, the knowing faculties perceive its spring, lever, and wheels ; and Causality discerns their object or design. If the question is put, Whence did the watch proceed ? from the nature of its materials, as perceived by the knowing faculties, Causality infers that it could not make itself ; and from discovering intelligence and design in the adaptation of its parts, this faculty concludes that its cause must have pos-

essed these qualities, and therefore assigns its production to an intelligent artificer." Suppose the question were next put, In what form does this artificer exist?—if no farther information were afforded than what is derived from the structure and design of the watch, no answer could be given. While Causality enables us to reach the conviction that an intelligent artificer must have made the watch, it can infer nothing from the mechanism concerning his form, colour, size, and other physical or personal attributes. In attempting to judge from a survey of physical nature, concerning the form and mode of being of the designing Cause of the universe, we are in the same predicament as the observer would be who was required to discover the form and mode of being of the watchmaker by *inspecting the watch alone*. In other words, it is impossible, by means of our natural faculties, to obtain any knowledge concerning the form and mode of being of the Deity. By the phrase "a personal God," we presume the Edinburgh Reviewer to mean, not a God existing in a specific form (which form our faculties do not enable us to ascertain), but, in accordance with Locke's definition of a person, "a thinking, intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places." In this sense of the word, our faculties enable us to assign a personal character to the Deity; and such, we presume, is the view of the subject generally taken by philosophers.

The third question is, Does the universe afford evidence of the manner in which the Deity proceeded in constituting it? Again appealing to our faculties, and with the limitation to be afterwards specified, we must answer this also in the negative. Individuality recognises only the present existence of matter; Eventuality, only the phenomena of matter which occur under its own experience, or are recorded on credible testimony of actual observers. It cannot penetrate into the manner in which the series of changes originated. Comparison is equally incapable of solving the mystery. It is able to contrast only the things and conditions which are seen or recorded to exist, but cannot trace the origin of existence. Causality, also, is in no better condition; for although in certain circumstances it gives rise to an impression of efficiency in the antecedent to produce the consequent, it cannot penetrate into either the nature or the origin of the quality which produces efficiency. The human understanding, therefore, in vain employs its observation and reflection to discover the origin of the universe. It perceives matter existing, events occurring, and efficiency acting; but in

tracing the whole of these perceptions backwards, they present to it the appearance only of an endless succession. As already stated, the arrangements and adaptations displayed by physical objects and their phenomena, excite the conviction that, besides the material substances which constitute the universe, there exists a vastly powerful designing Mind ; but how this Mind operated in giving its original constitution to the universe, is a question on which our faculties shed not a ray of light.

The question between the author of the *Vestiges* and his opponents is, whether the universe was *created* or *developed*. In Bailey's Dictionary, we find the following definition : " CREATION is a forming something out of nothing, or of no pre-existing materials, and is proper to God only. It differs from all other sort of formation ; whereas they all suppose something to work upon, this supposes nothing at all." Dr Johnson defines the verb TO CREATE as follows : 1. " To form out of nothing ; to cause to exist ;" his example of which definition is the verse of Genesis, " In the beginning, God *created* the heaven and the earth." 2. " To produce ; to cause ; to be the occasion of," &c. And he defines CREATION to be " the act of creating or conferring existence." Bailey's definition is the one generally understood when we speak popularly of God creating the world ; but from what has been said above, it appears that we have no evidence from science concerning the manner in which the universe originated. In deciding this question, the inquirer's first object should be to ascertain what the record of nature enables him to discover ; and it appears to us that, judging from natural evidence alone, the idea of the universe being evoked by an act of the Divine Mind out of nothing, is as purely a hypothesis (in other words, an assumption as unsupported by scientific evidence) as any notions of the author of the *Vestiges* can be. Supernatural information apart, our understandings must plead entire ignorance of the manner in which the universe originated.

The author of the *Vestiges* states, that the book " is not primarily designed, as many have intimated in their criticisms, and as the title might be thought partly to imply, to establish a new theory respecting the *origin* of animated nature ; nor are the chief arguments directed to that point." The purpose is (as we mentioned on p. 159) to shew that the works of God *are a system based in law*. In order to establish this idea, the author sketches a hypothetical history of the universe, from its supposed first elements in the form of " fire-mist," or nebulous atoms, and represents it as having

been evolved from these atoms under the guidance of law. The basis of his hypothesis, he says, "lies in the material laws found to prevail throughout the universe, which explain why the masses of space are globular; why planets revolve round suns in elliptical orbits; how their rates of speed are high in proportion to their nearness to the centre of attraction; and so forth. In these laws arise the first powerful presumption that the formation and arrangements of the celestial bodies were brought about by the Divine Will, *acting in the manner of a fixed order or law*, instead of any mode which we conceive of as more arbitrary." (P. 5.)

There is, to our apprehension, some obscurity in these expressions. A law of nature is not an entity distinct from nature. The atoms of matter act invariably in certain definite manners in certain circumstances; the human mind perceives this regularity, and calls the action characterized by it action according to law. But the term "law," in this sense, expresses nothing more than the mind's perception of the regularity. The word does not designate *the efficient cause* of the action; yet many persons attach a meaning to the term, as if it implied causation. The cause of the regularity which we observe in the motions and reciprocal influences of matter, may be supposed to be either some quality inherent in the atoms, or certain powers and tendencies communicated to them at first by the Divine Mind, which adapt and impel them to all their modes of action; that is, to perform every evolution, and to enter into every combination, which He preordained that they should execute in all time and all space. This latter is the hypothesis of the author, as we understand it. According to it, matter at one time existed in the form of extremely minute and widely diffused atoms; the Divine Mind impressed upon these atoms powers, energies, or tendencies, in virtue of which they first congregated into masses, and formed suns, planets, and satellites; being so formed, they (still in virtue of the energies or tendencies first impressed upon them) evolved themselves into seas, continents, mountains, and subsequently into germs of organized matter, animals, and vegetables; they afterwards formed the combinations which we see; in short, proceeding through a long succession of changes in space and time, they formed themselves, by a series of regular pre-arranged and ordained evolutions, into the universe, animate and inanimate, such as it now exists. According to this view, the Divine Mind is assumed to have conceived and pre-arranged the whole phenomena of the universe, and to have impressed upon matter the power and tendency to evolve all that we

behold ; and to have accomplished this with such an all-pervading wisdom and efficiency, that no subsequent interference on His part, in order to rectify errors, supply deficiencies, or provide for new circumstances, has ever been necessary. The most remote and minute event, according to the author, was as completely designed by the Deity at the first, and produced by His will then exercised, as if He had made a special exertion to evoke it at the moment when the human mind first perceived it to happen.

It is obvious that this hypothesis ascribes every thing that exists, and its modes of existence and action, to the will of the Great First Cause,—the pre-arranging and pre-ordaining Mind ; and we cannot, therefore, coincide in the charge of impiety or atheism brought against the author by some of his opponents.

Another view of the mode in which the Deity constituted and sustains the universe, is, that His intelligence and power at first formed, and continue constantly and immediately to operate in the evolutions of matter—that, for example, when an acorn becomes an oak, the changes which we contemplate take place, not in virtue of energies, tendencies, and adaptations conferred on matter, and made to inhere in it from the beginning, by the Divine Mind ; but in consequence of the action (regulated, it may be,*) of that Mind on matter, commencing when its changes began, and continued until every one of its evolutions be completed. .

But this view, equally with that of the author of the *Vestiges*, is a pure hypothesis. To be able to judge whether the efficiency which gives rise to the phenomena exhibited by matter inheres in matter itself, or was, countless ages ago, by one grand fiat communicated to it,—or whether at every moment the Divine Will, by direct action, impels it,—we should require to know the essence of matter, and also the nature and mode of action of the Divine Mind—points utterly beyond the reach of our faculties. On such subjects, we have no alternative but to bow our heads in reverence, and confess our profound ignorance, apparently interminable while our present constitution of mind and body shall endure.

In regard to the *origin* of matter, then, there is really no collision between the hypothesis of the author and that of his critics. He does not attempt to shew the *origin* of the “fire-mist,” of which, according to him, the universe primarily consisted. It may have been evoked out of nothing by an

* “ The Great First Agent may lay down a rule of action for himself, and that rule may become known to man by observation of its uniformity.”—*Sir John Herschel's Address to the Br. Ass. at Cambridge, 1845.*

act of the Divine Will, without the slightest effect upon his argument.

The real subject of difference between him and his critics seems to be the following:—they not only assume that the Deity evoked the universe out of nothing, but insist that on the occasion of every new and important change in the arrangement of the elements of which it consists, He specially or miraculously interferes. Somewhat inconsistently, however, they seem to allow that this interference has not occurred on the occasion of each purely physical evolution of the material world; limiting themselves to the assertion of its occurrence when inorganic matter became organized, and non-sentient became sentient (*i. e.*, when vegetable and animal life was first introduced), and on every subsequent occasion when new species of animals and vegetables appeared.

Appealing again to the intellectual faculties of man, we maintain that these opinions also of the critics are pure assumptions. Individuality, Eventuality, Comparison, and Causality, have, by experiment and observation, obtained abundant evidence that the natural elements which compose animal and vegetable beings belong originally to the inorganic kingdom. Life appears to be the result of combinations of inorganic elements, brought, and for a time held, together by some mysterious power, which we have hitherto in vain endeavoured to explain; but no facts known to us (excepting for the present the experiments of Mr Crosse and Mr Weekes) enable us to decide in what manner these combinations originated. Man has never seen a new being created out of nothing, or even fashioned out of pre-existing inorganic elements by a direct act of the Divine Will; nor has he yet observed any unequivocal instance of the transition of inorganic into organic matter without the aid of a previously existing organized medium, such as a seed or embryo; and as we know nothing of the essence or ultimate powers (whether inherent, or derived) of matter, we have no scientific data for determining whether matter is or is not capable of organizing itself. The hypothesis of the author of the *Vestiges* therefore rests on no direct evidence, if we except the experiments of Mr Crosse and Mr Weekes, which need to be verified by many inquirers before they can be received as the basis of such a momentous theory as they are called on to support. But, as we have just observed, the hypothesis of his opponents, of matter having been evolved out of nothing, and of life or sensation having been communicated, and changes of species effected, by special and

direct acts of the Divine Mind, rests on no firmer scientific foundation ; for Science utters no voice on such topics.

Weighing, however, the two hypotheses in the scales of probability, inferred from what is known and has been observed, it appears to us that the presumptions lean in favour of that of development. All that we see of the present processes of nature, and from which we can infer *by analogy* what her prior processes may have been, belongs to the department of evolution. We observe rocks formed by depositions at the bottom of the sea ; mountains elevated by subterraneous physical forces ; the seeds of vegetables evolved into flowers, fruits, and forests ; the embryos of animals evolved into reptiles, fishes, and mammalia. In all these instances, the elements of inorganic matter merely enter into new combinations and forms. But we repeat that the efficiency which causes them to perform these evolutions is a complete mystery. We have never seen the beginning of any series of changes, and our faculties do not enable us to divine its cause.

Assuming, therefore, the origin and efficient causes of the universe to be at present impenetrable by scientific means, the question remains (and in point of fact it is the only important consideration in the discussion), Whether the Deity, in the present administration of the world, acts according to the hypothesis of the author of the *Vestiges*, or in the manner of special interference ? This question is one of practical importance, and it seems to fall within the scope of the human faculties and experience.

According to the author, qualities and energies were conferred on matter at the first, which have led to all its subsequent evolutions : these qualities and energies were not left to operate blindly as the elements of a chaos ; but certain modes of action and tendencies to combination were impressed upon every atom, rendering its whole subsequent evolutions regular and certain. The critics generally admit the existence of qualities or energies in matter, and acknowledge the regularity of action and combination in the great phenomena of the physical world, so far as these have been fully subjected to scientific investigation. It is only in the unexplored or obscure departments of science, that the mode of direct interference is seriously supposed to prevail.

The Edinburgh Reviewer says, that “ the Deity has (in the way He allows us to see His works) so exhibited the attributes of His will, as to shew Himself to the mind of man as a personal and *superintending* God, concentrating

His will on every atom of the universe." According to the hypothesis of the author of the *Vestiges* also, the Divine Mind is a superintending Power over all the events of the universe, as much as He is so according to the views of the opponents. In the one case, He is regarded as having made effectual provision for the preservation and enjoyment (within the limits intended by Him) of the beings evolved by the operation of matter under the impulses which He communicated to it; and this so effectually, that no special interference on His part was subsequently necessary. The phenomena of nature which man contemplates, appear to support this view. The human body may be selected as a good example, on account of our familiar knowledge of its qualities and modes of action. It seems to be constituted with the view of living in health and enjoyment for three score and ten years or more, while it is exposed to influences which may destroy it at any moment. An individual, for instance, may suffer serious injury in consequence of a fall, or from the momentum of moving bodies. When these injurious causes operate, there is no example submitted to the eye of science, of a direct interposition of the Divine power to avert the consequences of the natural agency of matter; but the individual is protected, to a certain extent, by a series of pre-arrangements, obviously originating in the Divine intention. First, he is provided by nature with an instinct of self-preservation, and faculties of caution, observation, and reflection, calculated to enable him to give effect to the Divine intention, by avoiding injurious objects and situations. Not only so; but if, by being projected from a coach or railway-car, he should break a leg,—the blood-vessels of the broken leg commence a new species of action and deposit bony matter along the fracture, and in the course of time reunite the broken edges so firmly, that the health and vigour of the limb are completely restored. If an artery be ruptured and need to be tied, a new power in the neighbouring arteries immediately evolves itself: they dilate and convey blood to the parts which have been deprived of their nourishment by the obliteration of the injured vessel; and this they accomplish so effectually, that speedily the results of the injury are no longer perceived. All animated nature is full of similar contrivances; and although they inhere, yet they lie latent in the organisms until circumstances call for their operation. The number of conservative powers lying latent and unheeded in the human body while its normal condition continues, but coming into

play the moment the necessity for them occurs, is surprisingly great—so extensive, indeed, that volumes might be written in elucidation of them. These latent powers, bespeaking intelligent pre-adaptation of the body to circumstances foreseen and anticipated before they occur, convey an irresistible impression of the agency of Divine Intelligence; but, to our understanding, they are examples of pre-ordained and pre-arranged powers of adaptation and evolution conferred on matter, and are not instances of direct interference.

The constitution of the human mind, also, endowed with spontaneous activity, and with faculties of observation and reflection, appears to bespeak a theatre of existence in which the objects and beings related to it shall act under regular laws. Under such a system, man, by his intelligence, may reap enjoyment from every object fitted to gratify his faculties, and avoid evil by shunning objects calculated to injure him; not absolutely, because he is a mortal and fallible creature, but to such an extent as the Divine Mind sees proper to permit. Were the world administered under a system of arbitrary interference, the human faculties would be confounded and useless. We agree, therefore, with the author of the *Vestiges* in the following remarks:—"The entire conduct of a large portion of society, and more or less that of nearly all the rest, is regulated, or rather cast loose from regulation, by the want of definite ideas regarding that fixed plan of the Divine working, on the study and observance of which it is evident that our secular happiness nearly altogether depends. Even acute men of the world are daily seen acting to their own manifest injury, in consequence of their utter ignorance of any system of law pressing around them. With the great bulk of society, life is merely a following of a few inferior instincts, with a perfect blindness to consequences. By individuals and by communities alike, physical and moral evils are patiently endured, which a true knowledge of the system of Providence would cause to be instantly redressed. Daily health and comfort, life itself, are sacrificed through the want of this knowledge. It is not in the heyday of cheerful, active, and prosperous existence, or when we look only to the things which constitute the greatness of nations, that we become sensible of this truth. We must seek for convictions on the subject, beside the death-beds of amiable children, destroyed through ignorance of the rules of health, and hung over by parents who feel that life is nothing to them when these dear beings are no

more; in the despairing comfortlessness of the selfish, who have acted through long years on the supposition that the social affections could be starved hurtlessly; in the pestilences ravaging the haunts of poverty, and revenging, in a spreading contagion, the neglect by the rich of the haplessness of their penury and disease stricken neighbours; in the canker of discontent and crime, which eats into the vitals of a nation in consequence of an unlimited indulgence of Acquisitiveness by those possessing the most ready natural resources and standing in the most fortunate positions; in the national degradation and misery which follow wars entered upon in the wantonness of pride, greed, and vanity. Doubtless, were the idea vitally present in the minds of all men, that from laws of unswerving regularity every act, thought, and emotion of theirs helps to determine their own future, both by its direct effects on their fate, and its reflection from the future of their fellow-creatures, and this without any possibility of reprieve or extenuation, we should see society presenting a different aspect from what it does, the sum of human misery vastly diminished, and that of the general happiness as much increased." (Pp. 182-4.)—"Is our own position affected injuriously by this view, or can our relation to the universe and its Author be presumed to be so? Assuredly not. Our character is now seen to be a definite part of a system which is definite. The Deity himself becomes a defined, instead of a capricious being. Power to make and to uphold remains his as before, but is invested with a character of tranquillity altogether new—the highest attribute we can conceive in connexion with power. Viewing him as the author of this vast scheme by the mere force of his will, and yet as the indispensably present sustainer of all; seeing that the whole is constructed upon a plan of benevolence and justice; we expand to loftier, more generous, and holy emotions, as we feel that we are essential parts of a system so great and good." (Pp. 185-6.)

It is not our intention to enter into the details of the scientific phenomena which form the subject of dispute between the author and his critics; but we conclude our notice by presenting a letter with which we have been favoured by Mr Hewett C. Watson, a former editor of this Journal, and whose attainments in the highest department of botany, are deservedly acknowledged to stand in the first rank.

"THAMES DITTON, *January 29. 1846.*

"My dear Sir,—I wrote a short letter yesterday, in reply to yours, which arrived here during my absence from home;

and I will now endeavour to meet your inquiry for those botanical *facts*, which apparently support the views of progressive development, advocated by the author of the *Vestiges*. Make any use you choose of this letter. The nature of the facts may be stated in a brief form, after the fashion of an 'ipse dixit;' but it would need a volume to give you full explanations in detail, with special instances in proof. If the Vestigian theory has any truth in it, botany should yield illustrations and proofs equally as any other part of nature. The author has passed by the familiar and the true, while he has cited some dubious cases which will scarcely bear scrutiny. The alleged conversion of the oat into the rye, is incredible under existing knowledge. The white clover is so universally scattered over Britain, and its growth so rapid, that there can be no marvel in its sudden appearance over ground newly turned up and limed—that is, rendered particularly adapted for the increase of a plant, whose roots or seeds were likely to have been in the ground previously. The pretended five distinct floras of Britain are probably nothing better than a misinterpretation of certain facts which were ascertained and published by myself ten years ago. In the seed-beds of the garden, cabbages are often seen which are almost exact counterparts of the plants of the sea-coast; though these are stated to be so different by the author of the *Vestiges*. It is not in such dubious instances, but in substantiated facts, that the author should have sought his botanical illustrations of progressive development. These facts may be grouped under the following categories:—

“1st, The mode of growth of any vascular plant, commencing from a seed and terminating in seeds (a multiplication of itself), is a continued evolution of parts and organs, through the whole being of the plant; affording, perhaps, the most complete example of progressive development to be found in nature. This is true, though less obvious, in the more simply organised cellular plants. It may be still traced in the lower orders of animals, as well as in the higher vertebrates previous to birth.

“2d, The gradations of physical character are so fine and close among plants, that they often render nugatory the attempts of botanists to distinguish order from order, genus from genus, species from species. Intermediate or transition forms come between, which might, with equal propriety, be referred to either of two orders, either of two genera, either of two species—as the case may be.

“3d, Plants brought from two distant countries are often

sufficiently dissimilar to justify systematic botanists in describing them as two distinct species ; yet on placing other plants, from intermediate lands, between them, the gradual transition from one supposed species to the other becomes too apparent to allow of their being kept distinct. Occasionally, the same is observed of plants which have grown near together, though under different circumstances of soil or situation.

“ 4th, The seeds of one reputed species can produce forms so far intermediate between the parent and some other (allied) species, that experienced botanists will assign these intermediates to the wrong stock, if not informed of their real origin.

“ 5th, The seeds of one intermediate form have been known to produce both the reputed species, between which the parent plant appeared to be intermediate.

“ 6th, In some few instances, an individual plant of one reputed species has been observed to assume the distinctive characters of another reputed species, after change of soil or situation.

“ But, on their side, botanists discard all these facts which appear like a transmutation of species. In their definition of the term ‘ *species*,’ they assume that one cannot pass into or produce any other. Reasoning on this arbitrary definition, whenever a case of transition appears to be established, they forthwith declare the plants to be one single species only, holding the fact of such transition to be the proof of their unity as species. It is obvious, therefore, that botanists must continue opponents of the theory of progressive development, as extended to species, unless they consent to change their definition of the word, by leaving out the assumption that transition is impossible. Certain, however, it is, that several pairs of species (so reputed) which have been united into one for the reasons just mentioned, have differences quite as wide as are seen between other species universally considered to be truly distinct.

“ It is needless to trouble you with a string of Latin names, as examples of reputed species which slide into each other through intermediate forms. Those who want such examples may find some of them in the *Phytologist* for 1845 (vol. ii., pp. 161, 217, 225.) But the illustration of progressive development, afforded by the growth of a plant, may be traced and explained in everyday language. The seed of a plant includes an embryo, equally as the egg of a bird during incubation. When that embryo swells and bursts the shell of the seed, the young plant protrudes in a form widely unlike that

which it will afterwards very gradually assume ; while the newly-hatched bird has all the organs, and even the general form, of its adult parent. The young plant must add to its dimensions, not only by the growth of organs already visibly existent, but also by the development of superadded organs. Take a common sunflower as an example of this. In winter it is a seed or embryo, which vegetates in spring, and then appears a small seedling plant with two or more leaves. In summer it has expanded into a stout stem, on which numerous leaves have been developed. By autumn it becomes a stately herb, of six feet high ; its stem now terminating in a large head of flowers (a single large flower, in the eyes of non-botanical observers), and divided into several lateral branches, each one terminating also in its own head of flowers. Hundreds of seeds are produced in these heads of flowers, each of them adapted to repeat the same course of progressive development the ensuing season. The sunflower dies wholly after producing its seeds ; but many other plants are familiarly known to endure from year to year, by the survival of their roots, or roots and stems ; these surviving parts being able to re-develop any lost organs, as leaves and flowers, season after season.

“ This is trite and familiar enough ; but it is not the less clearly an example of progressive development. It is more striking than the progressive growth of animals, because fresh parts or organs are successively added through the whole existence of the individual, whether we take an annual herb, which lives only a season, or a tree which endures for centuries of years. The ultimate state or production is a return to the first state—that of seed, many times multiplied ; these two extremes being totally dissimilar from the intermediate stages of development. Experience alone could enable mankind to infer that the seed would develop into the leaf-clad stem ; nor could anything else authorise an inference, that the development of leaves would stop and give place to flowers. We know well the fact, simply because we watch the whole process where so short a space of time is required for its completion.

“ In thus describing the process, just as it is seen by the eyes of a non-botanical observer, there is left untold a very important part of its bearing upon the theory of progressive development. It is now an established doctrine in botany, that the flowers and fruits of plants, as well as all their constituent organs (bracts, sepals, petals, stamens, pistils), and even the final production, the seed or egg itself, are not strictly organs of a new kind, successively added to those

kinds which previously existed ; but that they are more properly repetitions of those previous organs, modified or metamorphosed into something apparently quite different, by influences which change the course of their development at an early stage. The reality of this metamorphose is admitted by all botanists ; though explanations may differ, and the efficient causes of the change remain to be discovered. Under different conditions or influences, the same rudimentary organ appears capable of becoming a leaf, or a bract, or a petal, or a stamen, or a seed-pod. Thus, all the successive changes of the plant, in the production of leaves and flowers, of fruits and seeds, when closely examined and analyzed, only prove to be more thoroughly examples of progressive development. It may be difficult for a general observer to conceive that an apple or an orange is simply a cluster of leaves, to the course of whose development some peculiar direction had been given while they were young or rudimentary. But it will be less difficult to see how easily the pod of a pea might be formed, by folding a single leaf in such manner as to bring its edges into even contact, while young and capable of forming adhesions ; thus producing a hollow leaf, united all round—a pod to receive and nourish the vesicles which are to become seeds, or the embryos of future plants. My dear Sir, very truly yours,

“ HEWETT C. WATSON.”

II.—*The Phrenological and Psychological Annual for the Year 1846.* Edited by DAVID G. GOYDER. Glasgow : J. and G. Goyder. 8vo, pp. 80.

This publication belongs to the series which formerly bore the title of “ *The Phrenological Almanac*,” a title now judiciously dropped. It contains seven articles, with some notices of books, phrenological intelligence, and a list of phrenological societies and lecturers. Article I., entitled “ What is Phrenology ? by Mr Robert Brown,” aims at correcting the misconception of those who, knowing nothing of Phrenology except from the doings of itinerant manipulators, suppose that it is merely the art of predicating mental qualities from the shape of the head. As nobody who has ever read an elementary work on the subject can fall into such a mistake, we fear that Mr Brown’s paper has little chance of reaching the class for whose instruction it is intended. “ The examining of

heads," says Mr Brown, " although not the object of Phrenology, is nevertheless useful, in so far as it is the only means by which the doctrines of Phrenology can be verified, rectified, or extended. But a man may believe in Phrenology from the strong testimony adduced in its support, and take advantage of its doctrines, although he may have never examined a single head, in the same way as he would do in regard to the doctrines of astronomy or geology. Phrenology, teaching that the size of an organ, *cæteris paribus*, corresponds with the vigour with which its function is manifested, makes it follow as a necessary consequence that Phrenology *may* be applied to the predication of character. Still this must always be considered as a very subsidiary, and its most unimportant, application. In fact, we can see little use in examining heads, except for the purposes above stated. When it is done for no other purpose than to pamper the self-conceit or minister to the vanity of foolish coxcombs, Phrenology is rendered contemptible indeed. Let it be the endeavour of all who wish well to Phrenology, to disseminate sound views regarding its true nature and uses, and the public will soon get disabused of their present erroneous notions relative to these points, and be led to take advantage of the very important doctrines which Phrenology unfolds." This is sound advice, although the importance of " examining heads," is here, we think, considerably under-estimated.

Article II. is entitled, " Remarks on the Development of Allan Mair, tried before the Circuit-Court at Stirling, on September 13. 1843, for the murder of his wife, and executed October 4. 1843. By a late Member of the Alloa Phrenological Society." This article is illustrated by an excellently drawn and engraved sketch of the criminal's head. Mair was for many years engaged in England as a drover, and afterwards was employed to conduct 160 merino sheep, belonging to the Earl of Selkirk, to his settlement upon the Red River, in North America. " It was the practice of sheep-farmers, before the discovery of Phrenology, to choose persons for shepherds who were very prominent and broad between the eyes. They were supposed, and it appears correctly, to be better able than others to distinguish the different sheep. Individuality and Form are the organs included in that space, and in Mair Individuality is very large, whilst Form is also large. The motives which actuated him in going to America appear to have been principally Acquisitiveness and Locality. But much of the restlessness which characterised Mair may be traced to his Combativeness, especially if we allow the definition of part of its functions, as given by

Mr William Scott. He says, ' Its essence seems to be a sort of restlessness—an impatience of ease—an abhorrence of a state of inactivity.' ” The editor adds, in a note :—“ Some think this restlessness and propensity to wander from place to place, arise from large Destructiveness in those with moderate intellectual powers. Mr Sidney Smith called it a tendency to ‘ vagabondism.’ ” We differ from both Mr Scott and Mr Smith on this subject, and look upon Mair’s restlessness as the effect of the “ extraordinary size of his head, combined,” as we learn, “ with the great activity of mind indicated by his temperament ” (p. 12). Both Combactiveness and Destructiveness, it is true, may add very much to a man’s restlessness ; but so may many other faculties, such as Love of Approbation, Acquisitiveness, and Wonder : hence, “ abhorrence of a state of inactivity ” is by no means the “ essence ” or distinctive character of either Combactiveness or any other faculty. We cannot here enter into the details of Mair’s character and cerebral development, but shall merely remark (what does not seem to have occurred to the writer of the article under review), that the revolting conduct of the criminal on the scaffold was calculated to raise a suspicion that he was not altogether sane.

Article III., “ On the Character of the late Emperor Napoleon,” is extracted from the *American Phrenological Almanac*. It contains some statements which are obviously inaccurate. Is it a fact that Bonaparte “ knew, at one time, nearly every man in his vast army by name and face ” ? Again, what is meant by saying that “ he had both the *phrenological organ* and the faculty of *Human Nature*, or discernment of character, in a most remarkable degree ; ” and that “ Agreeableness was equally developed in both head and character ” ? We are completely puzzled about the organ of “ Human Nature ; ” and as to “ Agreeableness,” can only conjecture that this word is employed instead of “ Love of Approbation.” The author ascribes to the faculty of Comparison, Napoleon’s uncommon power of inferring the intentions of his enemies. “ This faculty,” says he, “ puts this and that together, and draws inferences from slight data.” Is there aught here but pure assumption ? On the authority of some anecdotes related to the American writer by Colonel Lehmanouski, “ who entered the military school soon after Bonaparte, and was with him in all his wars, and fought over one hundred battles under him,” it is maintained that Conscientiousness was not deficient in the Emperor’s character ; “ that, however, his other faculties often blinded it, is not denied.” His head “ was remarkably large, and measured nearly 24 inches where the hat fits to it. On

this point, Col. L. says, that, by mistake, he once put on the General's hat, and that it was entirely too large for him; and the Colonel's head measures $23\frac{1}{2}$ inches. Bonaparte's, therefore, must have reached nearly or quite 24."

Article IV., on "Marriage considered Phrenologically," by the Editor, is a sensible paper, but has nothing so novel in it as to demand particular notice. Much of Article V., in which the writer, Mr A. G. Tyson, professes to set forth "An *a priori* Argument for the Truth of Phrenology," is crude, fanciful, and unsatisfactory. In Article VI., entitled, "Address delivered before the College of Professional Teachers at Cincinnati, by the late Alexander Kinmont, A.M.," the individuality of each person's character is enforced, and teachers are energetically counselled to endeavour to improve and direct the diverse mental qualities of their pupils, instead of vainly striving to make all conform to the model of their own or any other man's character. He impresses upon them, also, an opinion which we think true and important:—"The real genius and powers of a youth cannot be fully known till he has reached his manly years. There are many different *veins* in the mind, so to speak; and that which is near the surface and first opened, may be a very rich one, but you know not how it is to be as you descend. Your hopes there may be all frustrated. On that account a teacher should be careful how he conveys an impression to a father that his son is a boy of genius. Parental love is of itself sufficiently blind—you must be careful not to hoodwink it. The grand period of terminating boyhood, and beginning manhood, must be waited for, before we can steadily predict what the character is certainly to be."

Article VII. is an extract from Mrs Child, on "Veneration;" after which follows a review of two works on Capital Punishment, the first paragraph of which article contains the too sweeping assertion, that "it has always been the anxious desire of all phrenologists to bring about a radical change in the criminal jurisprudence of this country." Now, some phrenologists (such as the late Mr William Scott, who was deeply imbued with toryism) have not only not entertained the "anxious desire" in question, but expressly maintained the utility of capital punishment. So do not we: facts and arguments alike convince us that public executions are, on the one hand, directly conducive to the production of crime, and, on the other, less conducive to its *repression* than an improved system of penitentiary discipline.

Among the articles of "Intelligence" is the following extract from the *Mayo Constitution* of 11th October 1845, rela-

tive to a visit of Mr Alexander Wilson, a practical phrenologist of Dublin, to the barrack of the former town :—

“Some of the officers of the 30th Regiment having expressed a desire to have Phrenology tested by an examination of the heads of a number of the more remarkable of the soldiers, Mr Alexander Wilson readily acceded to their proposal, and on Saturday last, in Paymaster M'Donnell's room, he demonstrated the truth of phrenological science, by correctly and most minutely stating all the varied dispositions and talents of the persons brought before him. The most interesting part of the examination was Mr Wilson's very graphic description of the character of one soldier. After one minute's observation he remarked—‘This is the head of no ordinary person ; he possesses a mind of a very high order. If justice be done him, if his high talents be appreciated as they ought to be, he cannot long remain in the humble rank of a private soldier. He manifests great *force* of character, displays a great deal of enthusiasm and ardour, has got a rich and glowing fancy, is sensitively alive to all the beauties and sublimities of nature. His local memory is very great. His great organ of Locality, combined with his very large Wonder, &c., would produce an early desire to travel and see the world. His love of visiting places is quite a passion with him, and either that or a fit of obstinacy, resulting from some domestic quarrel, was probably the cause of his enlisting. His organ of Firmness is very large, and will produce obstinacy if any attempt be made to drive him. He should be encouraged. Respect should be paid to his superior natural endowments. He is continually under the influence of strong impulses. He writes, speaks, and acts under the influence of strong feelings, liable to be carried away by his over-powerful imagination. Excellent mechanical and artistic capabilities—able to acquire superior excellence in landscape drawing. Fair mathematical talent, but too much imagination for so dry a study. In short, there are few studies in which he is not capable of succeeding well.’ The name of the soldier is Oscar Lushington, who, it is said, is nephew of the celebrated Dr Lushington of Oxford. He is a poet, and draws well. Captain M'Donnell mentioned that the reason of Lushington enlisting was his romantic passion for travelling. Colonel Slade, and all the other officers present, complimented Mr Wilson for the astonishing correctness of his delineation.”

The list of “Phrenological Lecturers” given in the *Annual*, contains only the names of Mr D. G. Goyder ; Mr Alexander Wilson, 10 Westmoreland Street, Dublin ; Mr Spencer T. Hall, 85 Pall Mall, London ; and “Dr Dewhurst, F.R.A.S., 11 Argyll Street, Oxford Street, London.” The editor must be ignorant of the character of this Dr Dewhurst, of whose phrenological and literary qualifications we long ago had an opportunity of expressing a low opinion. (See vol. vii., p. 313.) Against the begging applications of a Dr Dewhurst, whom we take to be the same individual, (and who styles himself also Professor Dewhurst, Dr Dew, and Mr Hurst,) the London Mendicity Society, after due investigation, cautioned the public by an advertisement published last September in the *Times*.

A portrait of Mr Combe is prefixed to the *Annual*. The expression is not his habitual one, and, at first sight, we

thought the likeness a failure. It has, however, improved on farther acquaintance, though still we are sorry that it cannot be pronounced unexceptionable. By some who have had only a few opportunities of seeing Mr Combe, the resemblance is thought to be striking.

III.—*Abstract of "Researches on Magnetism, and on certain Allied Subjects," including a supposed new Imponderable.* By BARON VON REICHENBACH. Translated and Abridged from the German, by WILLIAM GREGORY, M.D., F.R.S.E., M.R.I.A., Professor of Chemistry. London: Taylor and Walton. 1846. 8vo, pp. 112.

This singularly interesting brochure came into our hands too late for such an analysis of it as we could have wished to present. We cannot, however, delay gratifying—we would almost say astonishing—our readers by an account of it that may, at least, lead them to the work itself. Baron von Reichenbach of Vienna is well-known to the chemical world as the discoverer of creosote, paraffine, eupion, and other new and interesting compounds found by him in tar. He has gained a high scientific character, not less, for minute accuracy, perseverance, and trustworthiness, in his investigations and experiments—qualities that tend to inspire confidence in his report of the magnetic wonders he has discovered. Dr Gregory says, that, as he read, he recognised "the same ardent zeal, the same accuracy in the details of his experiments, the same caution in devising all possible checks and control in these experiments, and the same logical turn of mind in drawing his conclusions, which had from the beginning characterized all the researches of Reichenbach." On returning last October from the continent, Dr Gregory found that the magnetic discoveries of Reichenbach were almost totally unknown in Britain, and resolved to translate and abridge the original work for the benefit of the English reader. The discoveries throw much light on several very obscure departments of science. "The first of these is the so-called Animal Magnetism. The author has demonstrated that magnets act on the human body, especially in certain conditions; and thus restores to the statements of the early magnetisers on this point the credit of which they had been unjustly deprived. The author's experiments are the more valuable, because, as far as the present memoir extends, he never experimented with

persons in what is called the mesmeric state. But he goes farther; for he demonstrates the existence, in *magnets*, of two forces; one which attracts iron and affects the needle, and one which acts on the nervous system, and which he has found, unmixed, in *crystals*. This new force he is disposed to view as the true agent in animal magnetism. At all events, it is so in the magnet, when it acts on the system." We shall quote from the translator's concise and well written preface:—

"This new power is transferable from one body to another, and it is conductible through matter. A body may be, for a time, charged with it, and this is the true explanation of the fact, now demonstrated by the author, that a glass of water, as stated by Mesmer and his followers, may be magnetised by contact with a magnet, although that term is improper.

"But perhaps the most striking characters of this new power are, that it assumes, like electricity and magnetism, a polar arrangement in bodies, and that bodies charged with it are luminous, especially at the poles. The light, it is true, is only visible to certain sensitive individuals; but not only are such persons of tolerably frequent occurrence, but the author has gone far towards demonstrating, that, although invisible to ordinary eyes, actual light, nevertheless, does emanate from the poles of powerful magnets. It is very interesting to remark that Baron von Reichenbach's discovery of the luminous appearance connected with the magnet has been so soon confirmed by the researches of Faraday.

"The author's conclusion that the new power, existing as it does in crystals, as well as in magnets, plays an important part in crystallisation, has also received powerful confirmation from the recent researches of Mr Hunt on the influence of magnets on crystallisation.

"The author finds the new power in many unsuspected quarters, in the sun's rays, the moon's rays, heat, electricity, friction, and, above all, chemical action; and the numerous and beautiful applications which at once suggest themselves give a tenfold interest to this part of his researches. The human frame, especially the hand, whether in virtue of the incessant chemical changes going on in the body, or independently, is a rich source of the new power; and when we reflect on the author's facts, demonstrating the existence, in almost all forms of matter, and especially in the human hand, of an influence, no matter of what nature, capable of acting on the sensitive nervous system, we see at once the true explanation of the results of Haygarth and others, who supposed that they proved metallic tractors to be quite inert, because the same effects (attributed by them to imagination) were obtained with tractors of wood and other substances, painted so as to resemble the metallic ones. We perceive that, in both cases, the hand may have been the chief agent, and that at all events both metal and wood, as well as many other bodies, are capable of acting on the system in the same way, that is, in sensitive persons. The error of Perkins, who recommended metallic tractors, as well as of his followers, seems to have been this, that, on theoretical grounds, they supposed the influence observed to exist in metals, or rather in iron alone. His opponents, in combating this notion, have supplied ample evidence that the influence exists in other bodies. Viewed in this sense, these experiments serve to illustrate the author's, and are at the same time illustrated by them; and they are

beyond suspicion, both from the respectability of Dr Haygarth and his friends, and the very different object they had in view.

"Space only permits a reference to the very interesting and beautiful explanation furnished by the author's discoveries, of at least one, and that a very frequent, kind of ghost-stories; which is thus reduced to a simple and natural result of a chemical process. The same remark applies to the author's satisfactory explanation of the magnetic baquet.

"Although these researches undoubtedly tend to establish on a foundation of fact some of the most apparently incredible statements of Mesmer and his followers, yet it is to be carefully borne in mind that they have been made, without any exception, on persons not in the mesmeric state. This circumstance indeed gives to the experiments, and to the conclusions deduced from them, in reference to Mesmerism, a greatly increased value.

"It is easy to object to these researches, that they have been made with persons in a morbid state, and are therefore unworthy of confidence. This is a very convenient method of getting rid of facts, far more so than that of disproving them by researches as laborious and conscientious as those of the author. But it is not a scientific method, and is, therefore, unsatisfactory.

"Besides, a careful perusal of the following pages will convince the reader that many of the phenomena occur in healthy persons; and that the only essential difference between these persons and the most sensitive is the superior acuteness of the senses in the latter. A regular gradation exists from those who are utterly devoid of sensitiveness to the most highly sensitive, and while some phenomena are only perceived by the latter, others are observed by a large majority of mankind. The objection, therefore, is unfounded in fact.

"But further, even were the evidence confined to the highly sensitive, or morbidly sensitive, the reader will perceive that the method of investigation effectually establishes the reality of the phenomena described by them. A considerable number of sensitive persons are examined separately as to a particular class of phenomena. They are ignorant of the object in view, and of the special experiment made at the moment, the essential part of which is often, indeed generally, conducted out of their sight; and they are merely asked to describe their sensations.

"Now when, under these circumstances, and with every precaution which science can suggest, it is found that each observer is at all times consistent with himself, and, in all essential points, with the others also, no communication whatever having occurred between them; when it is further found that these observations, in points where they can be checked by those of healthy subjects, or by known facts (as, for example, when sensitive patients classify bodies, without seeing them, by the sensations produced, in an order coinciding with their electro-chemical arrangement, a principle unknown to the patient), are found to be exact—when this is the case, it appears to me impossible to maintain the objection above alluded to, or to doubt the genuineness of the phenomena.

"Into the question, whether the new influence detected by the author in magnets, in crystals, in light, heat, electricity, and chemical action, be due to the existence of a new imponderable, it would be premature to enter here. The author, adopting this view, gives it a name; and certainly the laws of its diffusion and distribution, as well as its very analogous characters, would induce us to place it beside magnetism and electricity, as a force distinct, yet of the same kind. It is very interesting to observe that Professor Draper of New York, from considerations connected with photogenic influences, admits a fourth imponderable as

existing in the sun's rays. The current of discovery seems to set in that direction; and this is one more coincidence, strongly confirmatory of the author's accuracy and sagacity. He has certainly advanced farther than all others towards the establishment of his new imponderable; and it would not be easy to exaggerate the importance, especially to chemistry and to medicine, of such a discovery, if finally confirmed.

"The most recent researches of Faraday, of which a very imperfect account has just appeared, evidently establish the existence of a new class of facts, related to magnetism; and without attempting to shew how far these researches may coincide with, or differ from, those of Reichenbach, this at least is evident, namely, that, in connection with magnetism, much remains to be discovered.

"It is also worthy of notice, that, in a pamphlet lately published in Calcutta by Dr Esdaile, that author comes to the following conclusions, among others, all supported by very numerous facts:—1st, That there exists, in the human frame, an influence capable of being transferred from one body to another, and of affecting a sensitive person at considerable distances. To this power he attributes all mesmeric phenomena. And, 2d, That water can be charged with this power; and that water so charged is at once distinguished from ordinary water by the sensitive, on whom it acts very powerfully. The attentive reader will easily perceive how the experiments of Dr Esdaile, made at so great a distance, about the same time, and in an entirely different manner, confirm and illustrate those of Reichenbach, by which they are, in turn, confirmed and illustrated.

"It now only remains for the translator to repeat his entire confidence in the accuracy of every statement of fact made by Baron von Reichenbach, and his admiration of the perseverance and sagacity which have already led to such valuable discoveries; and that he rejoices to know, he is now engaged in pursuing some of the countless investigations opened up by these discoveries, and already with distinguished success. He entertains no doubt, that in this country the example of Baron von Reichenbach, in making these interesting but obscure phenomena the subject of regular scientific study, will soon be widely followed, and his results confirmed. In the few instances in which the translator has himself been enabled to repeat some of Baron von Reichenbach's experiments, he has found them, as might be expected, entirely accurate; and he can already bear his testimony to the fact that crystals exert an influence on the human system, in a large majority of persons; while in some, the sensitive, their action is exceedingly powerful.

"Without, therefore, adopting, as established truth, all the conclusions of the author, the translator considers it of great importance to direct attention to his very numerous, well made, and carefully reported experiments, which, at all events, demonstrate the existence of a power or influence hitherto overlooked, yet playing a very important part in many natural operations, and throwing light on many obscure although well established facts."—(*Preface*, pp. vi.-x.)

As these discoveries were made by observing the sensations and perceptions of the sensitive, Dr Gregory briefly introduces the reader to these very peculiar individuals in the following terms:—

"Magnets of 10 lb. supporting power, when drawn along the body, downwards, without contact, produce certain sensations in a certain proportion of human beings. Occasionally in 20, 3 or 4 sensitive indi-

viduals are found ; and in one case, out of 22 females, examined by the author, 18 were found sensitive.

"The sensation is rather unpleasant than agreeable, and is like an *aura*, in some cases warm, in others cool : or it may be a pricking, or a sensation of the creeping of insects on the skin : sometimes headach comes rapidly on. These effects occur when the patient does not see the magnet nor know what is doing : they occur both in males and females, although more frequently in females ; they are sometimes seen in strong healthy people, but oftener in those whose health, though good, is not so vigorous, and in what are called nervous persons. Children are frequently found to be sensitive. Persons affected with spasmodic diseases, those who suffer from epilepsy, catalepsy, chorea, paralysis, and hysteria, are particularly sensitive. Lunatics and somnambulists are uniformly sensitive.

"The magnet is consequently an agent capable of affecting the living body ; but although some physicians have attempted to employ the magnet as a curative agent, no fixed or decided results have been attained. The subject, having a close connection with physiology on the one hand, and physics on the other, has been neglected both by physiologists and natural philosophers ; while among medical men it has not always fallen into the best hands. The object of the author is to solve some of the disputed questions, and to bring a number of the phenomena under fixed physical laws."—(P. 1.)

The first and most important discovery made by means of the sensitive, and by them alone, is, *that, in a dark room, light appears at the poles and sides of powerful magnets.* The appearance is illustrated by engravings. After stating that *diseased* sensitive patients are powerfully affected by the approach of a magnet, even to the length of fainting, catalepsy, and spasms of dangerous violence ; and that their senses are rendered extremely acute, hearing so much so that they hear and understand what is spoken two or three rooms off ; he details the case of M^{lle}. Nowotny, aged 25, subject for eight years to headachs, and latterly to catalepsy, fits, and spasms. This lady possessed a very high degree of acuteness of the senses ; she could not endure the daylight, and in a dark night perceived her room as well lighted as it appeared to others in the twilight, so that she could distinguish colours. She was very sensitive, in various ways, to the influence of the magnet ; and, although not a somnambulist, was quite equal to somnambulists in the acuteness and excitability of the senses. Led by the idea that the *aurora borealis* is a phenomenon connected with terrestrial magnetism, or electro-magnetism, Baron Reichenbach thought it possible that M^{lle}. N. might see light about the magnet ; and, on making experiments with one capable of carrying 80 lbs., this, it appeared, was actually the case. The next patient, M^{lle}. Sturmman, aged 19, was still more sensitive ; the 80 lb. magnet, at six feet distance from her, threw her into spasms and unconsciousness. When she recovered,

she confirmed M^{lle}. Nowotny, as to seeing light streaming from the magnet. Several other patients were tried with the like results, more or less striking. The best subject the author met with was M^{lle}. Barbara Reichel, aged 29, a very vigorous woman, though subject, in consequence of having fallen from a window at 7 years of age, to attacks of somnambulism, and even lunacy. She had very long intervals of health. At the time of the experiments she had passed through severe spasmodic affections, and retained the sensitiveness of her vision, which was singularly exalted in acuteness during her attacks. Though strong and healthy, she saw the magnetic light as vividly as any of the sick persons tried. She was very intelligent, and could bear the approach of the magnet far better than sensitive persons generally do. By means of this subject, the author has obtained his most valuable results in reference to the theory of Electro-magnetism. She saw the magnetic light, though less strongly, in the twilight. After mentioning some experiments made on other individuals, and summing up the luminous appearances described by all, the author remarks, that, "although unacquainted with each other, and with each other's observations, their accounts agree in all essential points, and were, in each case, uniformly consistent, not only with themselves, but with the known laws of electricity and magnetism. The author, having no reason to doubt the perfect honesty of these persons, and feeling at all events confident of his own caution, accuracy, and *bona fides*, has no hesitation in admitting the reality of the phenomena, although invisible to ordinary men; and he considers the fact of the existence of such luminous appearances at the poles of powerful magnets as fully established as the researches of one man can establish a fact. He confidently anticipates confirmation from other observers, since sensitive persons, although not numerous, or readily found in small towns, are quite easily obtained in large cities."

What we have space or time to say further of this work, must be limited to a mere table of its contents; for our readers must have recourse to the book itself. To prove that it was real light seen by these witnesses, a most ingenious idea occurred to the author. He subjected the daguerreotype plate to the influence in the most perfectly secured darkness; and, after 64 hours' exposure, the plate was found affected by the magnet's light; while another plate in similar circumstances, but without a magnet, was unaffected. This proved, that, unless other imponderables, such as magnetism, act on the prepared plates as light does, the

emanation from the magnet is of the nature of light. Another test is worth noticing ;—when the magnetic light was directed through a lens to the wall, M^{lle}. Reichel saw it, though none else present could. The holder secretly directed the lens so as to shift the light on the wall, and the lady noticed its change, and always pointed to where the operator meant, by the position of the lens, that it should be. The identity of the magnetic light and the aurora borealis, though not demonstrated, is extremely probable.

The second section introduces us to the singular discovery that crystals are magnetic in a new and particular manner. While the hand of the cataleptic follows the magnet, (with a force, M^{lle}. Reichel said, she could not resist feeling as if a thousand threads drew her,) and water may be magnetized, so that the sensitive will discover it, there are bodies which act on the sensitive without being magnetised, and these are crystallized bodies. They have no proper magnetic force, capable of attracting iron, but they contain a new force, analogous to magnetism, and are luminous to the sensitive. It is clearly ascertained, and is a fact of very great value, that terrestrial magnetism acts on the sensitive ;—nervous patients lie more at ease when on the magnetic meridian than when across it. The peculiar force of magnets and crystals exists in the human hand, which is luminous to the sensitive ; and this force the author thinks is probably the agent in animal magnetism. Farther experiments have shewn that the new power exists in the sun's rays, the moon's rays, heat, friction, and even artificial light. Chemical action is a source of the new power ; it gives rise to luminous phenomena. Digestion is a source of the new power. Light is seen over graves by the sensitive, arising from the chemical decomposition going on below. Some frightful appearances in churchyards have thus been brought within the domain of physical science. The following "singular ghost-story" is related and explained : A young man, extremely sensitive, passing a particular spot, was always powerfully affected with terror, and other sensations similar to those occasioned by magnetism ; and averred that he saw a female figure, like a light cloud, standing before him in the dark. As he added that he experienced similar sensations when passing near graves, the place was dug up, and, at a great depth, the remains of a human body were found ; and yet these were only the bones imbedded in lime. This confirms the opinion current among sanitarians, that emanations from graveyards take place, however deep the sepulture has been. M^{lle}. Reichel was taken to a churchyard in the dark, and saw light over

all the graves. She stood in it, and found it reached in some cases to her neck. Our readers may have seen the wonderful account of the Seeress of Prevorst : Baron Reichenbach has, in this particular of luminous appearances, and others, taken much of its celestial origin out of that famous exhibition.

We wish we could extract largely from the sixth section, where the author shews that this new magnetic power is found *in the whole material world* ; and classifies a very great variety of substances, shewing their different effects on the sensitive, such as the sensations of heat and cold, pricking, benumbing, &c., &c. *All* bodies are more or less luminous to the sensitive, and the light is variously coloured, according to the substance. Sealing-wax and amber, the *electron* which gave electricity its name, should be tried—we do not observe that they yet have been. Besides the rays of the sun and moon, the planets and fixed stars affect the sensitive. This was tried on several sensitive persons, to make certain that it was not mere fancy in any one. Many experiments were tried with metals, sulphur, &c., with the most extraordinary results. There is no part of the work more curious and instructive than this section. The author is following out the investigations, from which may result the most important discoveries as to the manifestations of an all-pervading agent, its connection with the animal economy and even life itself, and its value in medical science.

The last section has for subject the *dualism* of the new force, which gives rise to opposite currents, analogous to those of magnetism. Positive bodies cause warmth, and negative, cold. Hence the sun and fixed stars, causing cold to the sensitive, are negative ; while the moon and planets, causing warmth, may be said to give the positive currents. The experiments tried on M^{lles}. Maix and Reichel, with plants and animals, are intensely interesting. To the sensitive the mouth and lips seem to possess a concentration of the new force, and are found as powerful as a magnet, a large crystal, the sun's rays, or the human hand. The Baron ventures the conjecture that the magic effect of a kiss may depend on this influence ; and that the flames depicted on a lover's lips by poets truly burn there, and the very sensitive can see them !

“ The new force appears to be subject to the general laws of imponderables, but has its specialties and peculiar laws, the study of which must henceforth be a problem of physics. It is exceedingly desirable to discover an inorganic test or re-agent for it, a means of recognising and measuring it,

which shall relieve us from the dependence, often more than disagreeable, on sick persons, hospitals, and unscientific people of all kinds. The author is engaged in this research, and has good hopes of success.”—(P. 25.)

Dr Gregory has performed his part well, and given to the English reader a scientific treat of the rarest and most interesting kind. The remarks occasionally introduced by himself are distinguished by that candid yet searching spirit with which the readers of his contributions to this Journal have long been familiar. No doubt there will be many who, on the strong foundation of their own ignorance and self-esteem, will reject the whole as a dream; for, as Sir Walter Scott somewhere says, there is a vulgar incredulity quite as prevalent as a vulgar credulity. It may operate on the feelings of those inclined to sneer, to learn that the author, in a letter to the translator, printed in the Appendix, states that the celebrated Berzelius treats the discoveries with so much respect that a report upon them, by himself, will probably be laid before the Swedish Academy of Sciences. We think Dr Gregory's own estimate of the discoveries no small testimony in their favour.

The author's sensitive subjects are now 23 in number, including, he says, men and matrons; and he intimates that another memoir on the subject will soon be published. Surely the sensitive may be found anywhere; and we hope Dr Gregory and others in this country will find them out. In a note on p. 43, Dr G. mentions that he has already been enabled to confirm some of Baron Reichenbach's statements in regard to the action, on a sensitive person, of magnets, of crystals, and of the hand. He adds—“Nearly two years ago, moreover, I often saw a lad, who, in the mesmeric state, saw flames issuing from the points of my fingers, which I first noticed from seeing him playing with them. In that case, as I had never heard of the phenomenon, suggestion was out of the question.”

We were led to turn to a letter from Mr Simpson (*ante*, vol. xvii. p. 260), describing what he saw of Hypnotism in the hands of Mr Braid of Manchester. Mr Braid held that no influence passed from one person to another; and truly Mr Simpson saw his patients *throw themselves* into the mesmeric sleep, with all its phenomena, by merely gazing fixedly at a point in the ceiling. Yet we have all of us seen marked effects produced by the pointings and passes of the hands; and, that a magnetic, or analogous, influence passes from them, Baron Reichenbach, we think, demonstrates both by the

sensations of the sensitive and their vision of light streaming from the finger-ends. We may come to be able to reconcile these seemingly contradictory facts; for, if they are both true, they must be reconcilable. The Baron and Mr Braid ought to make themselves acquainted with each other's experiments, and, from their joint researches, some very important additional *light* may be thrown upon this truly curious, and deeply important, subject.

IV.—*The Zoist: A Journal of Cerebral Physiology and Mesmerism.* Vols. II. and III. April 1844—January 1846. London: H. Baillière. 8vo.

It is a considerable time since we made the *Zoist* the subject of a special article, though extracts from it have occasionally been given in our pages. Twelve Numbers have now appeared, making up three volumes. About three-fourths of the space in vols. II. and III. is filled with papers on Mesmerism; the remaining fourth being devoted to Cerebral Physiology. The non-medical articles which we think the most valuable are those on "Reason and Instinct," in No. VI.;—on "the Punishment of Death," and the "Phrenological Development of the Rev. Dr Strauss," in No. VII.;—on "the Cerebral Development and Character of the Murderers Hocker and Connor," and "Benjamin Ellison," by Dr Elliotson, in Nos. X. and XI.;—"On the Organ of Conscientiousness," by Mr R. R. Noel, and "Instances of the Power of the mere Will over others" (in the mesmeric state), by Mr H. Thompson, in No. XI.;—On the Doctrine of Philosophical Necessity, by Dr Elliotson; a communication on the Measurement of Heads, by Mr Straton; and a Phreno-mesmeric case (p. 453), by Dr Elliotson, in No. XII. In Mr Noel's clever paper on the organ of Conscientiousness, the existence of any such organ is maintained to be at once unnecessary and undemonstrated. He admits the reality of the sentiment and disposition which are generally regarded as its functions; but thinks, with Gall, that other organs are sufficiently capable of giving them birth. His arguments are ingenious, but to us unsatisfactory; and we observe that in No. XII., p. 465, Dr Elliotson's previous doubts on the subject have been put an end to by a phreno-mesmeric case, which satisfied him that the faculty in question is correctly located by Dr Spurzheim in the spaces between the organs of Firmness and Cautiousness. "I must differ from Gall," says he, "both by

reasoning and observation of head, who regards benevolence as only a higher degree of justice ; and therefore hypothetically assigns to both the same organ. At the same time I must differ from Dr Spurzheim in regarding conscientiousness and justice as the same. For conscientiousness may relate to matters in which justice is not concerned. The *social* organs of Love of Offspring, Friendship, Benevolence, Veneration, when they have been disregarded in those who have them large, feel reproaches of conscience, no less than these are felt when justice has been disregarded by those who have its organs large. Conscientiousness relates no more to justice than to friendship, veneration, &c. The proper term, I conceive, is justice, honesty, fairness ; and surely this must depend upon a particular sense or faculty." (P. 466.) These are sound remarks.—We may add that Mr Noel is sceptical of the existence of organs of Concentrativeness, Hope, and Imitation (No. XI., p. 285.) With respect to the organ of Hope, Dr Elliotson says that *he* has not seen any proof of it by observation of development ; nor ever seen hope excited in mesmerised persons by touching over the part said to be its organ ; nor read of the occurrence, when it was certain that due care had been taken to avoid suggestion, by selecting a person totally ignorant of cerebral physiology, and by rigidly preventing conversation which could enlighten him. (No. XII., p. 455.) He has always noticed hope to be in proportion to the strength of a desire, to the general ardour of temperament, and to the disposition to look at all things present as well as past in a favourable point of view ; and he rightly says (what, however, has no bearing on the question whether there is a special faculty), that hope is affected by the relative proportions and positive strength of individual organs of desire on the one hand, and the organs of reflection and of circumspection on the other, as well as by the person's knowledge or ignorance. "It is remarkable," he adds, "that Dr Spurzheim does not inform us how he discovered this organ, or give us a single example of it ;" to which we may subjoin the observation, that striking instances of its great or small development are not to be found *anywhere* on record. We agree with Dr Elliotson in attributing hope to brutes as well as man.—In the same article (p. 460), he objects to the names *Covetiveness* and *Acquisitiveness* as appellations of the function of the organ No. 8. "It surely gives a desire to retain as well as to acquire, and Gall's name for it—sense or love of property,—is evidently the more correct. What other faculty can make people miserly ? If some thieves do give away what they have stolen, this is from

the action of some stronger feeling; or, if they are careless about retaining what they have stolen, this is but a modification of the action of the organ, its impulse being expended at once. Even Dr Spurzheim, after insisting upon calling it the organ of Acquisitiveness, inconsistently finishes in these words:—‘This faculty prompts to say *mine*.’ This must be the fundamental nature of it, the disposition to acquire being a stronger excitement of it than to retain.”* Farther on (p. 463), he objects to the term *Mirthfulness*, substituted by Dr S. for Gall’s *Wit*. “Mirthfulness,” he says, “is hardly a proper term, because there may be mirth in endless circumstances. Men may be merry when they succeed or are gratified in any way; the savage, when he at length has caught his foe, laughs aloud and capers with joy; children dance and shout with joy; the kitten is merry; the cricket has its ‘cheerful mirth;’ and the highest wit, although it excites a smile and gives a peculiar relish, may be far from exciting mirth. The faculty of the organ appears to me the sense of drollery and ludicrousness: and there is wit when this is united with intellect. According to the intellect of the individual will be the intellectuality of his wit; and the wit of an unintellectual person must be unintellectual.” (P. 463.) Here also we concur.

With respect to Phreno-Mesmerism Dr Elliotson says, that the oftener he reflects upon it, the more splendid appears to him the discovery, that the distinct cerebral organs can be excited by locally applied mesmeric means (p. 470.) He states, that within his nine years’ ample experience, Mesmerism has never left insanity as its consequence (p. 528.) His experiments have afforded no support to the opinion of Mr Atkinson (see *ante*, xvi., 393), that certain portions of the cerebellum are for common sensation, sense of temperature, muscular strength, muscular action, &c., &c. (p. 467.) He has never been able to produce any effect on a mesmerised person by mere will (No. XI., p. 319); and frequently when he touched a different organ from that which he intended, the effect he desired and expected has not come, but another which he did not desire (No. XII., p. 467.) He fancies, however, that he has not a strong will; allows that others *may* be able to produce effects by mere volition; and publishes some instances of it related by Mr H. S. Thompson (p. 319.)

As might be expected, Materialism continues to be vigor-

* “I must remark that the point at which the Love of Property was excited by the finger was that marked by Gall, and not that new extent given to the organ by Dr Spurzheim.”

ously maintained in the *Zoist* (No. IX., p. 7 ; No. X., p. 151 ; No. XII., p. 421) ; and in the last Number Dr Elliotson repeats, in a very effective manner, the arguments which prove the independence of *immortality* on *immaterialism* (No. XII., p. 422.) Into this subject we need not now enter, having already, on several occasions, advocated the same opinion. The conductors of the *Zoist* persist in their assertion that Gall was a materialist (No. IX., pp. 13, 22 ; No. X., p. 151) ; and his "degenerate disciples" in Edinburgh are rebuked, in an amusing strain of bombast, for "their continued inculcation of a spiritualism which is productive of the worst possible effects, and the chief cause of the slow progress of humanity." "Ye men of Modern Athens!" exclaims the indignant *Zoist*, "Why do ye not arise and shake off the incubus which has so long oppressed you? Why do ye not declare that the philosophy which ye embrace shall have a practical influence?" (No. X., p. 151.) This is a fine flight of words ; but the *Zoist* would hit the men of Modern Athens much harder, if, instead of indulging in empty declamation, he would, even at this late day, enrich the world with an exposition of those "practical" consequences and regenerating principles which he promised in his first Number to reveal. So far as he has yet chosen to speak out, we have failed to get from him a knowledge of any "practical influence" that the phrenological public was not familiar with before he began to utter his voice.* On one point, it may be worth while to set him right concerning the men of Modern Athens :—they inculcate neither Materialism nor Immaterialism ; they think that a man may be a phrenologist, and turn Phrenology to the utmost practical account, equally whether he espouse the one doctrine or the other. Notwithstanding the discoveries of Dr Gall, the old contest between the materialists and spiritualists is likely to continue unabated ; for the force of the arguments in favour of Immaterialism has suffered no diminution whatever, and they are still as likely as before to prevail with many. In these circumstances, and the question being of no practical importance, we willingly leave both spiritualists and materialists in the peaceful enjoyment of their opinions. There may be men of Modern Athens who differ from us : we can speak only for ourselves.

In No. XII. of the *Zoist* is the following clear, concise, and comprehensive statement, by Dr Elliotson, of the doc-

* We need not recur to the foolish charge of moral cowardice brought against us in the 8th Number of the *Zoist*. It was sufficiently disposed of in our 18th volume, p. 226, and the *Zoist* has since been silent on the subject.

trine of philosophical necessity. Apart from Materialism, (which, as already stated, we neither affirm nor deny, and which is not at all essential to the argument), it expresses, with perfect exactness, our own views on the subject:—

“Every thought, feeling, and will, is merely cerebral action. When we will, this cerebral action results of *necessity* from something which is sufficient to excite it. Every thing in nature has a cause; and every thing or effect results of *necessity* from the cause, in the circumstances. *We cannot will without a cause*, and this cause produces the result, and makes us to will, of *necessity*. When we control an inclination of our brain, some stronger motive excited in the brain of *necessity*, by some causes, makes us of *necessity* to will to control it—to resist it, and the stronger wish succeeds. Our inclinations depend in health both upon the excitability and strength of the respective portions of the *brain*, native and from external training, and upon the influence which they experience at the time from external causes of excitement; and in disease upon all the causes of disease that can act upon the brain. A bad man and a good man are equally products of necessity. The good man we ought to love, not for merit of his own, but as a beautiful inevitable production of the formative powers, or of these and external circumstances together,—as a gem of fine water: the bad man we should detest, not for demerit of his own, but as a sorry inevitable product of the formative powers, or of these and external circumstances together,—as an inferior article; and, so far from blaming him, we should so pity him as to wish to surround him with favourable circumstances which of *necessity* may produce the best possible results from his organization. The object of rational punishment is to supply more motives to good than those which have hitherto proved or are likely to prove insufficient: and, before we apply what is called punishment, we ought to be certain that it is indispensable, and that better external circumstances within our power would not effect the desired improvement, and effect it much better.

“This doctrine of *philosophical necessity*, as it is termed, is neither more nor less than a fact. It is not a dogma. All is cause and effect throughout nature; and the brain and its phenomena, being a portion of nature, must likewise all be cause and effect.”—(Pp. 418–421.)

Even here, however, it is as possible for phrenologists, as for other men, to differ in opinion. The question is not, whether mind is cerebral action; or whether spirit acts correspondingly with cerebral organisation; but whether volitions are, like other events, necessary effects of preceding causes. And, in relation to this question, it is indifferent whether volitions be regarded as acts of the brain or acts of a spiritual essence; since every thing that exists, be it matter or spirit, is equally a portion of nature. The question, we take it, is purely metaphysical; Phrenology brings no addition of weight or number to the arguments urged in favour of necessity by Hobbes, Collins, Voltaire, Kames, and the orthodox spiritualist Edwards; and he who withstands those arguments is very unlikely to be converted by any physiological considerations.

V. *Report of an Educational Tour in Germany, and parts of Great Britain and Ireland.* By HORACE MANN, Esq., Secretary of the Board of Education, Mass., U. S. With Preface and Notes, by W. B. HODGSON, Principal of the Mechanics' Institution, Liverpool. London: Simpkin, Marshall, & Co. 12mo, pp. 272. 1846.

Mr Hodgson has done good service to the cause of education in reprinting this admirable and useful work—a work of which it would be difficult to say whether it is most characterized by soundness of principle, excellence of composition, hopefulness of aspiration, or elevation and liberality of tone. Mr Mann is a gentleman in whom philanthropic zeal is combined with a rare amount of talent, knowledge, honesty, and good sense; and, to crown all, he has the advantage of being thoroughly imbued with the principles of Phrenology. We shall take an early opportunity of laying an analysis of the volume before our readers: at present we must be content with extracting the following remarks from the excellent preface of Mr Hodgson* :—

“ Teachers in general are not yet sufficiently aware of the importance of gathering the fruits of others' experience; they trust too exclusively to their own resources; their own successes and their own failures are their only means of improvement. The isolation of teachers is so complete, that the benefits of union, and of mutual aid, are almost unknown, and scarcely conceived. And yet, how but by a comparison of experience, by the interchange of opinion, by the actual observation of each other's plans, can the majority of teachers become really qualified for their high duties? In education, as in every other pursuit, solitary, unaided, unguided effort can do but little. Regarding the teacher as a mere *instructor* (*educator* is a higher term), and assuming his own character to be all that could be desired, his thorough training consists of three branches :—1. A knowledge of the subjects to be taught; 2. A knowledge of the nature of the being to be instructed; and 3. A knowledge of the best methods of instruction. Till of late years, the first of these branches has been virtually assumed to be the sole thing needful. It has been commonly taken for granted that what a man has learned, that he must be fit to teach. It is not even yet universally seen that the first of these three requisites, without the second and third,—that extensive knowledge, without practical acquaintance with human nature, and without practical mastery of the most judicious modes of instruction,—is incomplete and powerless. Of the second, however essential, this is not the place to speak; but of the third, the value is by this report made strongly apparent. Is it unreasonable to suppose that such a tour as that accomplished and recorded by Mr Mann, may hereafter

* We observe from the newspapers, that Mr Hodgson has just received the degree of Doctor of Laws from the University of Glasgow. This merited honour, bestowed on a prominent advocate of Phrenology, is not without significance.

be regarded as an indispensable preliminary to the occupation of any important educational office? Nay, if in Germany the apprentice to an ordinary handicraft is required to complete not merely his *Lehrjahre*, or years of learning, but his *Wanderjahre*, or years of travel also; why may not the teacher, whose efficiency depends so greatly on accumulated experience and varied resource, be, at some future time, required to adopt this best method of enlarging his knowledge, skill, and usefulness? Meantime, to those who cannot travel, and, unfortunately, to too many teachers in this country foreign travel is a forbidden luxury, such reports as the following must furnish many useful hints, and much grateful encouragement."

IV. INTELLIGENCE.

Lectures on Phrenology.—In this Number we publish an Address by Dr Andrew Combe, read by his brother Mr George Combe at the opening of Dr Weir's course of forty lectures in Anderson's University, Glasgow, on the 7th of January last. There was a crowded audience of nearly 400 persons, many who desired admittance being obliged to go away for want of room. The proceedings were opened with a speech from the President of the Institution, who explained the object of the lectureship, advised the students to avail themselves of the opportunity which it afforded of becoming acquainted with Phrenology, and introduced Mr Combe to the audience. The delivery of the Address occupied above an hour and a-half, and at its close the thanks of the managers were cordially expressed to Dr and Mr Combe, with a request that it should be printed and circulated forthwith. Mr Combe, in acknowledging the compliment, spoke of the gratification with which he witnessed the change of public sentiment towards Phrenology since he first lectured in Glasgow in 1824. Several hundred copies of the Address have been circulated gratis, chiefly among the students of the University. On 9th January we heard Dr Weir deliver his first lecture, and were much pleased with the clear, appropriate, and intelligent manner in which the subject was handled. In the next ten lectures he gave a scientific description of the brain and nervous system, as taught by Gall and Spurzheim; demonstrating the minute anatomy of the organ, and tracing the connexion of the nervous centres with the hemispherical convolutions and the various phrenological organs. The subject was illustrated by recent and prepared brains, wax models, and drawings. The second part of the course consisted of an account of the different organs and faculties; and the lecturer is now going on with the practical application of the science to insanity, criminal jurisprudence, and education. The students are chiefly medical. They have been extremely regular and attentive, and apparently much interested in the subjects brought forward. At the close of each lecture some of them have generally remained behind for a short time, examining the casts and busts, and making inquiries of the lecturer on various points connected with Phrenology—sometimes starting objections, and thus acquiring practical information of value. This *conversational* mode of studying is fitted to make good phrenologists, and should be adopted as much as possible by all lecturers.

As Dr Weir's future courses will be begun at the opening of the medical session in November, with the other classes, it is to be hoped that the number of his students will yearly increase. We may add that Mr

Henderson's trustees, by whom this lectureship has been endowed, have offered a prize of five guineas for the best essay, by any student attending Dr Weir's first or second course, on the following subjects:—"1. Is any Physiology of the Brain, exclusive of Phrenology, generally recognised by medical authorities as satisfactorily establishing the functions of the different parts of that organ, and as practically useful in the treatment of mental diseases, the education of the young, and criminal jurisprudence? In answering this question, the competitor will be expected to specify the views of several of the leading physiologists of Europe on the functions of the different parts of the brain, and the practical application which they propose to make of their views. 2. In case the answer to the above question shall be in the negative, the competitor will be required to point out the causes of the failure, and to give his reasons for believing that they are capable or incapable of removal, so as to promise ultimate success. 3. To compare the phrenological method of investigating the functions of the different parts of the brain with the methods pursued by non-phrenological physiologists, and point out their respective merits. 4. To discuss the question, Whether the phrenological Physiology of the Brain is practically applicable to the treatment of mental diseases, to education, and to criminal jurisprudence? and, if the answer be in the affirmative, to state what is the cause of its superiority to other views of Cerebral Physiology." It is proposed that a committee of the students, named by themselves, shall read all the essays that may be given in, and select the best three; that these shall be read and discussed at a public meeting of the class; and that the prize shall be awarded to that essay which shall have the majority of votes by the students in its favour.

At the Mechanics' Institution, *London*, on the evenings of 11th, 18th, and 25th February, three lectures were delivered by Mr E. J. Hytche on the principles and evidence of Phrenology, and its application to insanity, criminal legislation, and education. These lectures were well and increasingly attended.—At *Belfast*, from 21st January to 24th February, Mr C. Donovan delivered, in the lecture-room of the Natural History and Philosophical Society, a course of ten lectures on Phrenology, to audiences which increased nightly till the room was quite filled. Mr D. formed several classes for instruction in his system of manipulating, and some of these were joined by both clerical and medical gentlemen.—At *Chester* (says the *Chester Courant* of 4th March) "the first of a series of lectures at the Mechanics' Institution, kindly given in compliance with a request from the Committee of that Institution, by several gentlemen connected with the city, was delivered by Mr Snape, on Thursday evening last, to a crowded audience, in the lecture-room. The subject was 'Man, considered phrenologically,' and the interesting and popular manner in which it was treated, elicited the most decided marks of approval from the audience. The lecture was illustrated by a variety of casts, drawings, &c. Mr Snape will deliver his second lecture to-morrow week; when we understand a patient will be passed into the mesmeric sleep by a practical mesmerist, which will give the lecturer a better opportunity of describing the natural language of the organs than could be done by mere verbal explanations."—Mr Rumball has been lecturing at *St Helier*, as appears from the following announcement in the *Jersey British Press* of 3d March:—"Mr Rumball's second discourse on Phrenology, on Friday evening last, was, as we had hoped and anticipated, far more numerously attended than its predecessor, and the pleasure which those present derived from the lecturer's masterly handling of his subject was evidently extreme." The course

consisted of six lectures.—We learn from the *Sheffield* newspapers, that in January and February, Mr E. T. Craig delivered a course of lectures on Phrenology before the members of the Phrenological Society of that town and their friends, in the Assembly Room, which is stated to have been well filled. He exhibited phreno-mesmeric phenomena, and manipulated the heads of persons who came forward from among the audiences.—In January, three lectures on Mesmerism were delivered at *Nottingham* by Mr S. T. Hall, and five on Mesmerism and Phreno-mesmerism at *Kendal* by Mr Adair. Mr Hall lectured at *Liverpool* in March.

Aberdeen.—The Phrenological Society here is just closing its tenth session of uninterrupted activity. Since the date of last report, the following papers have been read and discussed:—Contributions to the Mathematics of Phrenology, three papers, by the Secretary.—On the Means of Educating particular Faculties, by Mr Linton.—On the Study and Propagation of Phrenology, by Mr Jaffray.—On Suicide, by Mr Jaffray.—On the effects of different kinds of Food on the Human System, by Mr Linton.—On the effects of different kinds of Drink on the Human System, by Mr Maitland.—And cases, facts, and short articles, by various Members.

At the annual general meeting, the following were elected office-bearers and members of committee for the current year:—William Gregory, Esq., M.D., F.R.S.E., *Honorary President*; Alexander Linton, Esq., Surgeon, R.N., and William Jaffray, *Presidents*; James Straton, *Secretary*; John Shearer, *Treasurer*; Alexander Keith jun., *Librarian*; Messrs Wm. Thomson, Geo. M. Leslie, R. A. Gray, Al. Weston, and Wm. Brown, *Members of Committee*.

An *Aberdeen* correspondent writes:—A person of flaming pretensions, rapid speech, and trim exterior, presented himself amongst us some three or four months ago. He gave his card, "Mr J. Boyd, Phrenologist;" to which his bills added, "from Edinburgh, Honorary Member of the Phrenological Society of Majorca." [Mr B. is unknown in Edinburgh.] He presented, as testimonials, a pocketful of paragraphs cut from the newspapers. He met a courteous reception, even from those who felt some doubts and misgivings. He announced "a course of four lectures;" and offered "accurate descriptions of dispositions and capabilities:—Verbal, 1s.; written, 2s. 6d.; ditto, with minute details, 5s." We lent him such specimens as he requested to illustrate his lectures, and gave him a fair hearing. The heterogeneous melange of rant, rhyme, and rhapsody, philosophic pretension, fudge and fun, which he designated "a lecture," disgusted not a few, and tickled the curiosity of some of our young friends so much that they determined to fathom his depth if possible. Accordingly, "Mr Smith"—that gentleman so notorious for his ubiquity—presented his head, tabled the cash, and requested "a written description." Mr B. set to work, and tells us that "this gentleman's formation of brain is of middling dimensions, his temperament is mixed, he has not the strongest passions, and many of his feelings are somewhat cold, especially in reference to the fair sex; he is usually quiet, inoffensive, and unanimated; very sober and temperate, honest, regular, and steady; sometimes wavering and unfixed in his tastes; fond of variety and change of occupation; his imagination is more matter of fact and prosaic than fervid; he *might rhyme*, but it would be difficult for him to *poetize*; he is tolerably well also in language; not brilliant in wit, nor will he be renowned in after ages as a prodigy of musi-

cal talent; a well-conducted, and more useful than showy head." Four days after this "minute and accurate description" was obtained, "Mr Smith" presented himself anew, paid the fee, and preferred his request a second time; upon which Mr Boyd proceeds:—"This gentleman's formation of brain is full-sized, and exhibits some peculiarities; exalted and active in mind, though occasionally inert and obtuse; he is benevolent, and susceptible of both social and amatory impressions; the domestic affections being well developed, give an interest in the opposite sex and in children; disposed to be constant, but romantic and imaginative in love; his feelings are keen and exalted; his firmness appears to be improving, but he has more physical courage than fortitude; his Ideality and Wonder are powerful, giving exaltation of tastes, refinement, a love of poetry and perfection; example has a considerable influence; were he to study composition, whether in prose or verse, he would succeed very well, as he has the flow of ideas afforded by high reflectives, which are expressed by Individuality and Language with ease. In commercial and legal pursuits he would succeed, and make a good artificer." This is pretty plain. However, as some room remained to doubt which of the two characters, if either, was that of "Mr Smith," it was determined to try Mr Boyd with a *marked case*, one regarding which there was little scope for difference of opinion as to the development, and none whatever as to the character manifested. Accordingly, a well-executed cast of a skull, accompanied with the usual fee and request, was sent to Mr B., on which he writes:—"If it be at all a correct representation of the skull, the latter must have been of large dimensions. It is impossible to make any conclusion from a cast as to what the temperament may have been, though the posterior region is more like the female than the male; yet, from the size and general appearance, I should rather be disposed to consider it of the latter sex. The intellect is trifling when compared with the mass of the feelings, yet Causality is pretty fair. If he once broke through restraint, he would have gone from bad to worse, and become a swindler, forger, or picklock, but not likely a highwayman; violence would not be agreeable to him." The cast in question was that of the skull of Mrs Humphrey, who was hanged for the murder of her husband (See p. 153 of this Number.) Mr Boyd was then requested to mark the outlines of the organs on a skull, which was put into his hand; he did so, and the skull so marked is preserved in the Society's museum. It affords ample evidence of Mr Boyd's "dispositions and capabilities," and will long speak for itself. We are now satisfied as to what *Mr Boyd's Phrenology* is worth. We do not complain of his selling his sense or his nonsense at the highest price, but we do complain of his giving himself "a local habitation and a name" to which he has so slender a title. Mr Boyd seems to be a master in the art of billing and puffing; he has intimated his "leaving town," his "final intimation," and the "last opportunity," two weeks ago, but is still here. His tact in describing "dispositions and capabilities," consists in pouring out a ceaseless stream of words whilst manipulating the head of his subject; "trying-on" some half-dozen of different statements, and holding to that which he finds it easiest to persuade the individual to receive.—*Aberdeen, 11th March 1846.*

Phrenology in the United States Prisons.—A friend at New York, in a letter dated 27th February 1846, writes to Mr George Combe as follows:—"The officers of the prisons in this State are gradually embracing your views of criminal treatment. Mr Ransom Cook, who has sole charge of the New Clinton Prison in the northern part of this State,

rules the convicts by moral means entirely, and they all obey and love him. Mrs Farnham, matron of the Female Prison at Mount Pleasant (the lady whom I mentioned as having Mr Sampson's book on Criminal Jurisprudence in hand as editress), is a phrenologist, and teaches Phrenology to the unfortunate beings under her charge. She often takes 'The Constitution of Man' in hand, and lectures from it to the female prisoners in the chapel of their prison. My young friend, Mr ———, a lawyer of this city, and one of the inspectors of the Mount Pleasant Prison, has imbibed the new views of prison discipline, and tells me that he will take pleasure in sending you a late report of the inspectors of that prison, by which you will see that Mrs Farnham has clear and just views of criminal treatment. Indeed, she is a remarkably clever woman, with a large symmetrical head, and nervous-bilious temperament. On looking about this State, I find that our two Lunatic Asylums, and two out of our three State Prisons, are now conducted, or are about to be, by the light of the new philosophy, and chiefly as it has been expounded by yourself." Another friend, writing from Boston on the 29th October 1845, says:—"We visited, the other day, the prison of Sing Sing, in which a very great reform has been introduced within three years, and all through the influence of a woman (Mrs Farnham), who volunteered to take charge of the female department, which had been a pandæmonium, made worse by the devils being she-ones. She substituted the law of love for the whips, and chains, and shower-baths, formerly in use; and from her own department gradually extended her influence over the whole prison, so that without ostensibly having any power, she virtually became the controlling spirit of the entire establishment, which, as you know, contains about 500 convicts. Well! the moment I saw her, the whole mystery was explained: she is a woman of a very fine *physique*—chest well developed—sanguine-nervous temperament—very large brain, very full in the intellectual and coronal regions—and every external mark of a fine organization; pure porcelain, in short, among the rough pottery about her. She had laid down a book on our approach, out of which she had been *lecturing* to her prisoners as they sat at work. I took it up, and found it was your brother's admirable 'Physiology.' She had made even the poor benighted negro women feel an intense interest in the subject, and understand the nature of their own organization. She had been through 'The Constitution of Man' with her upper class. I must try to procure and send to you a letter from a poor ignorant negro woman, giving an account of the devil. She had once supposed him to be a real horned and tailed entity, who had drawn her into all kinds of sin, and who, rather than herself, was in truth responsible for her sins: she now saw, by the light of Phrenology, the evil one in his true garb, or rather saw as may evil ones as she had ungovernable propensities; and she described them most graphically. In a word, it is to a knowledge of Phrenology that Mrs Farnham, as she herself avows, is indebted for the success which she has had in bringing about the great prison-reform which she has effected." These communications are valuable additions to the evidence appended to the first article in our present number, of the practical utility of Phrenology.

Mesmerism.—We are requested (says an Irish paper) to give publicity to the following document, issued from the Bank, and signed by Mr Dudgeon, the manager:—

"Bank, Henry Street, Dublin, Jan. 7. 1846.

"In answer to the numerous inquiries which have been made respecting the lodgement of a hundred pound note in the bank of Messrs Ball & Co., to be paid to any person who shall, by the operation of Mesmer-

ism, describe the particulars of the note, I beg leave to say, that such a lodgement has been made in this bank; and on the envelope in which it is contained, is the following endorsement:—

“This envelope contains a bank-note for one hundred pounds, which will immediately become the property of the person who, without opening the envelope, shall describe, in the presence of Philip Doyne, Esq. and Sir Philip Crampton, Bart., every particular of the said note—namely, the bank from which it was issued, the date, the number, and the signatures attached to it; and who shall read a sentence, consisting of a few English words, plainly written, and which is contained in the same envelope with the half-note.” (Signed) JAMES DUDGEON.”

Books received.—The British and Foreign Medical Review, No. XLI., Jan. 1846.—The Zoist, No. XII., Jan. 1846.—The Science of Phrenology. By J. C. Lyons. London: Aylott & Jones. 1846. 8vo, pp. 82.—Case of Suspension of the Mental Faculties, of the Powers of Speech, and Special Senses, with the exception of Sight and Touch. By Robert Dunn, M.R.C.S. Reprinted from the Lancet. Pp. 16.—Observations and Essays on the Statistics of Insanity; including an Inquiry into the Causes influencing the Results of Treatment in Establishments for the Insane: To which are added the Statistics of the Retreat, near York. By J. Thurnam, Resident Medical Superintendent of the Retreat, near York, &c. &c. London: Simpkin, Marshall, & Co. 1845. 8vo.—The American Journal of Insanity, No. VI., Oct. 1845.—Priests, Women, and Families. By J. Michelet. London: C. Edmonds. Royal 8vo, pp. 71.—Report of an Educational Tour in Germany, and parts of Great Britain and Ireland. By Horace Mann, Esq., Secretary of the Board of Education, Mass., U. S. With Preface and Notes, by W. B. Hodgson, Principal of the Mechanics' Institution, Liverpool. London: Simpkin, Marshall, & Co. 12mo, pp. 272.—Extracts from Charles Sumner's Oration on the True Grandeur of Nations. With a Preface by Richard Rathbone. Liverpool: D. Marples. 1846. 8vo, pp. 31.

Newspapers received.—Elgin Courier, Jan. 9, Feb. 20, 1846.—Kendal Mercury, Jan. 24.—Nottingham Review, Jan. 30.—Chester Courant, March, 4.—Jersey British Press, March 3.—Jersey Times, March 10.—Liverpool Mercury, March 13.—The New Moon, Nos. 11 to 16.—The Morningside Mirror, Nos. 5 and 6.

To Correspondents.—Communications have been received from Mr Prideaux—Mr Hytche—J. M. (two letters)—Mr Cull—M. Most or all of these will be inserted in next Number. We are obliged to reserve also notices of the German Phrenological Journal, Mr Thurnam's Statistics of Insanity, Mr Lyons' book on Phrenology, and The Popular Record of Science; which last is an ably conducted cheap weekly journal published in London, and devoted to such subjects as Phrenology, Mesmerism, Homeopathy, and the improvement of Criminal Jurisprudence.

Communications for the Editor (prepaid) may be addressed to Mr ROBERT COX, 25 Rutland Street, Edinburgh. Books or parcels, too heavy for the post, may be left (free of expense) with the London publishers, Messrs Simpkin, Marshall, & Co., Stationers' Hall Court.—Articles intended for the next following Number must always be with the Editor *six weeks before the day of publication*. Communications for the section of “*INTELLIGENCE*,” and also Advertisements, should be in hand at least a fortnight before the same day. Charges for Advertising:—Eight lines, 6s.; twelve lines, 7s. 6d.; every additional line, 6d.; half a page, 14s.; a whole page, 25s. Advertisements may be sent to the publishers in Edinburgh or London.

EDINBURGH, 1st April, 1846.

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NEW SERIES.—No. XXXV.

I. MISCELLANEOUS PAPERS.

I.—*Address delivered to the General Meeting of Natural Philosophers assembled at Bremen on 21st September 1844, on the Connexion of Phrenology with Science in general, and with Natural Science in particular.* By GUSTAV VON STRUVE, advocate in Manheim, and editor of the German Phrenological Journal. (Freely translated and abridged.)*

If I venture to lift my voice in this assembly, it must be understood that I remain true to the profession which I have chosen; for I speak here as the advocate of a German discovery, expelled from its native land, and which it is your duty to recal from the banishment in which it has lingered for forty years. * * * I speak to men of science, to whom truth and experimental investigation are dear. The name of my client is PHRENOLOGY, the offspring of the expatriated Gall. I mention his name with pride and joy, for he was a distinguished German, who has extended the fame of his country wherever his name is pronounced.

To succeed, gentlemen, in convincing you of the high importance of the science which I here represent, it will be necessary for me to extend my observations. I must unfold the principles on which Phrenology is based, the elements of which it consists, and the numerous relations which connect it with the other sciences, and with the natural sciences in particular. I must cast a glance over the development of mental science from the times of the old Greek philosophers to the present day, in order to be able to point out the place which Phrenology is entitled to hold. When the question concerns the admission of

* Many of the ideas unfolded in this excellent Address, although well adapted to the state of knowledge of the assembly to whom it was delivered, are so familiarly known to our readers, that we have thought it unnecessary to translate the whole.

a new member into the confederation of sciences, it is not sufficient that we examine the philosophy of the present day only; we must look backwards to the first foundation of mental research.

In the times of the Greeks and Romans, science possessed a character different in many essential points from that of the science of the present day. Among the ancients, science bore a much closer relation to practical life than it does in modern times. It was not divided into so many separate departments. Every individual who cultivated science made himself master, to a greater or less extent, of its whole domain. An ancient philosopher occupied himself with the healing art, legislation, and theology; philosophy and natural science stood in the closest connection with each other. In the course of centuries, the knowledge of facts and phenomena, and at length the departments of physical science, became more and more extensive. Philosophical inquirers occupied themselves more and more with the details of objects, while, among the ancients, scholars were commonly satisfied with mere general views. It became impossible for the man of science to make himself acquainted with the details of every branch of natural knowledge. He contented himself, therefore, with the exploration of a single branch, and, in consequence, not unfrequently remained a stranger to all others. In this manner the different sciences became abruptly separated from each other. There was no longer any one all-embracing homogeneous science, but an array of sciences, one of which frequently stood in direct opposition to the rest.

Unquestionably the cultivation of individual branches of science advances the progress of science in general; but it appears to me that the time is come—nay, that the necessity has arisen—for uniting the scattered limbs of the body of science into a living whole. Phrenology will lend an important aid in accomplishing this object; for, while it is the doctrine which treats directly of the mind of man in its most intimate connexion with bodily organs, it enables us to point out the relations which all other sciences bear to the faculties of man, and to his bodily and mental wants.

Phrenology is the doctrine of the mind in inseparable connexion with its bodily organs. It is founded on the following fundamental propositions. 1. The brain is the central organ of mental activity. * * * 2. The brain is a congeries of organs. * * * 3. The degree of energy with which every mental faculty manifests itself, corresponds, *cæteris paribus*, with the size of its organ. * * * The quality of the brain, moreover, is of the highest importance; but you are not to

conclude from this, that its *quantity* is not likewise essential. While we ascribe due influence to the quality, we must vindicate also the importance of quantity in the brain. 4. The outer table of the skull corresponds in general to the inner table, and this to the exterior surface of the brain. The objections brought against this proposition rest entirely upon erroneous conceptions of it. Phrenologists have ascertained and described, with the greatest exactness, the instances in which there is a departure from this rule. * * * These four fundamental principles have led to the discovery of the functions of the different parts of which the brain is composed. * * * One part of the brain is not less completely distinct in regard to its functions from the other parts, than one organ in the thorax is functionally separate from the others.

The phrenologist, therefore, is distinguished from the non-phrenological physiologist only in this particular,—that he does not rest satisfied with investigating the functions of the brain in the mass, but endeavours to enter into the details of the functions which are connected with particular parts of that organ. The physiologist who opposes Phrenology in this department of inquiry, can do so only because he forms opinions of his own without evidence. * * * On the other hand, every physiologist who values truth and scientific principle, must take the trouble to examine the evidence, and must, as a preliminary condition, answer these questions—Are the facts on which phrenologists rest their doctrine concerning the functions of particular parts of the brain true? and, Are the conclusions which they draw from their facts sound? These two questions have never been scientifically answered by any physiologist who has appeared as the opponent of Phrenology. Every physiologist who has taken the trouble to put these questions to the test of experience,—for example, Dr Andrew Combe, Vimont, Broussais, and others,—has become a phrenologist. As, before the time of Gall, the doctrine of the functions of the brain lay in the deepest obscurity, the same was the case in regard to the knowledge of the corporeal organs of the mind. While the physiologists gave themselves almost no concern about the mental elements in man, the psychologists equally neglected the bodily element. The physiologists cultivated one, and the psychologists the other branch of the same science, without being aware that they ought to stretch out their hands to each other; for the inseparable connexion of the mind and body necessarily forms the fundamental basis of all our researches when we examine the phenomena of living man, whether we occupy ourselves with the body animated by mind, or with the mind bound up in corporeal organs.

The abrupt separation of the different branches of science, to which I alluded in the commencement of this discourse, appears nowhere more conspicuous than in the case of those branches of which man is the object. This is the fact in regard not only to physiology and psychology, but to all the other sciences which stand in immediate connexion with these; moral philosophy, dogmatics, law, history, and the philosophy of art, all draw their living elements out of the nature of man. In the former, the mental, and in the latter, the bodily portions of human nature occupy the foreground; but, in living man, the body and mind are never abruptly separated. Every, even the smallest, portion of the living body exercises an influence upon the mind,—as the mind, on the other hand, reciprocally influences the body. A painful wound on the little finger will render us incapable of following the steps of a difficult proposition, or will derange the connexion of our thoughts. Whenever, therefore, we propose to form sound judgments of the nature of man, we must direct attention at the same time to his bodily and to his mental conditions, and their reciprocal relations. The same symptoms or manifestations may, in their ultimate source, be referred either to bodily or to mental causes. Powerful shivering and sighing, chattering of the teeth, and shuddering, may be the consequence of severe cold applied to the body, or of a strong emotion of fear excited in the mind. A long and woful countenance, and generally depressed appearance, have not seldom their origin in disorder of the digestive functions; but they are also found to arise from severe calamities weighing down the mind. The same haggard, wan, parched look, is often found in persons who live in districts infested by malaria, and in sufferers under the influence of a deep mental sorrow.

The body and mind, therefore, are so intimately connected—the symptoms of bodily disease, in many instances, so closely resemble those of diseases of the mind—that only a sharp eye and discriminating judgment can penetrate into the ultimate cause of the appearances. Nevertheless, according to the present distribution of the sciences, some of the phenomena attending the same bodily condition are assigned to one, and some to another branch of science, as if the subjects of investigation consisted of different entities. Certain diseased conditions of the brain, for example, produce illegal actions, and the jurist sits in judgment on these, without thinking at all of the state of the brain; while the very same cerebral conditions are treated by the physician as corporeal diseases, without his thinking of the mind in the least: But, in so far as it is impossible, in many instances, abruptly to separate, in actual

life, the causes of actions from diseases, so is it equally impossible to establish an abrupt line of demarcation between the studies necessary to the physician and those necessary to the jurist. * * * The inquirers who cultivate the study of human nature, each unconnectedly in a separate department, meet with insuperable difficulties in connecting their own with the kindred branches, when they are unacquainted with the common object of all their researches—human nature in its totality. Philosophers have not considered that as, in the case of the body, whenever a part is separated from the whole, the part dies, so, in cultivating different branches of the science of human nature without regard to the totality, each branch must necessarily prove steril of all practical fruits. * * *

The organs of the brain constitute the peculiar point of union between the bodily and mental functions. On the one hand, they form the central point of the whole nervous system, and, on the other, constitute the corporeal organs of the elementary powers of the mind. Dr Gall, by revealing the functions of the different parts of the brain, brought to light at the same time the different primitive faculties of the mind; while, from a knowledge of the modes of activity of each organ acting singly, and of the different organs acting in combination, we deduce the doctrine of the laws of the human mind.

As the brain forms the point of union between mind and body, so Phrenology forms the point of union between psychology and physiology; as the brain is the central point of the collective nervous system, and consequently of the whole corporeal organism, so is it also the central point of the science of the human body; and as it constitutes likewise the organ of the human mind, so is Phrenology (or the knowledge of its functions) the central point of all those branches of science which have to do with man as a living being. Unity can be introduced into the special branches of science which relate to the human body and mind, only when they are united as rays of the single science of human nature in a central point; and this central point is presented by Phrenology. As soon as this truth shall be recognised by the cultivators of the various sciences whose common object is man, these sciences will be brought into closer alliance with each other, and into more harmonious mutual relationship, than they now exhibit. Phrenology, therefore, promises to achieve for the sciences which relate to man that unity of principle without which they never can attain to an expansive utility in practical life.

Whoever, therefore, imagines that the only object of Phrenology is to infer the talents of individuals from the outward appearance of the head, greatly misunderstands the present

condition of the science. Certainly it does this, and the object is one of high importance; but craniology forms only the outwork of Phrenology, the porch through which we enter into the temple. Craniology stands in the same relation to Phrenology that the skull does to the mind.

Phrenology is a science, the truth of which cannot be ascertained by studying books by the light of the lamp—which cannot be mastered by consulting hundreds of folios. It requires not only memory—not only information of various kinds—but a discriminating eye, an analytic understanding, a practical acquaintance with life, and free communication with all classes of society. It presupposes in the student a preparation by education in various branches of knowledge, and the power of penetrating, in the spirit at once of natural science and of philosophy, into the phenomena of life. On this account it is odious to all mere closet-students. * * * The ground on which Phrenology rests, is experience. * * * A physician was its founder; our countrymen Gall and Spurzheim will ever be named in this branch of science with estimation above all others: but in the course of years other physicians, and also philosophers, teachers, theologians, jurists, and artists, of the German nation, but more particularly of foreign countries, became attached to the doctrine; and it is only to the combined contributions of the powers of all these different classes of men that the high practical importance of Phrenology can be ascribed.

[Mr Von Struve proceeds to shew that one of the great errors of the old philosophy is the mistaking of modes of activity common to various faculties for primitive powers,—such as sensation, reflection, conception, memory, desire, and so forth. Our readers are well acquainted with the phrenological doctrine, that these are mere modes of activity of many primitive faculties with which the old philosophy is unacquainted. He proceeds :—]

In regard to the special cerebral organs, the following questions have been satisfactorily answered in the affirmative, and may, therefore, again and again be subjected to a new probation by every inquirer. 1. Are the facts upon which they are asserted true? 2. Does it follow from these facts that a primitive mental power corresponding to each organ exists? And, 3. Has the seat of the corporeal organ of the primitive faculty been correctly marked by phrenologists?

It is only such a probation as this that can pretend to give to mental philosophy a scientific character; only on the firm ground of facts and a corporeal constitution, can the existence and functions of a primitive mental power be securely based.

The old school philosophy can boast of a foundation for its special faculties neither in observed facts nor in corporeal organs; hence, every one of its adherents assumes arbitrarily such mental powers as appear proper in his own eyes:—one resolves the whole mental phenomena into two faculties [emotion and intellect], others into twenty-five; one admits a faculty which is rejected by another, and *vice versa*. The consequence has been, that, while all the other sciences have escaped out of the domain of baseless speculation into that of well-grounded facts, the mental philosophy of the old school continues to the present day in the airy region of pure abstraction, and has not won for itself a single inch of solid ground or stable principle.

[Mr Von Struve goes on to shew, that, before the discovery of Gall, not only the functions of the brain, but those of the nervous system in general, were, to all practical purposes, unknown. He continues:—]

Every moral act and effort upon this earth takes place by means of men, is directed towards men, and is undertaken for men. He who does not know man, will, even with the best intentions, be able to accomplish little for humanity,—will acquire no influence over his fellow-creatures, and will be unable to attain the end which he pursues. Knowledge of human nature is, therefore, the essential condition of all extensive usefulness. [Men of great natural sagacity acquire this knowledge almost without an effort, by observation of mankind; but when reduced into the form of a science, it may be communicated to ordinary minds, who, unaided, never could successfully master it.]

The science of human nature is, therefore, the most important of all the sciences; it prepares, in some measure, the path by which the others may approach the human mind. Ignorant of human nature, the theologian, the jurist, the physician, the philosopher, may unfold his knowledge to the world with the greatest learning; but it will only be when this knowledge comes home to the human understanding in the language of nature and of truth, that it will begin to bear fruits. How many well-meant endeavours are unfortunately shipwrecked through the incapacity of individuals learned in a particular department of science, to understand and to treat human nature! It is not enough that the theologian and moral philosopher should deliver good precepts; when they want the skill to adapt themselves to the wants and mental condition of those to be instructed, their words find no entrance into the mental ear. * * * Phrenology teaches us that a harmonious development of our powers is possible only when each organ fills the place which has been assigned to it by nature—when the ani-

mal propensities obey, and the moral feelings (in league with the intellect) govern. Only that family, that church, and that state, which takes into account the ordination of nature, will be capable of developing its powers according to nature. On the contrary, a system of education, a religion, or a government, which, instead of building upon the moral and intellectual powers of man, takes the animal propensities for its foundation, and chiefly develops them, rests on precarious ground ; for, without the sentiments of Veneration, Conscientiousness, and Benevolence, the intellect becomes like a two-edged sword, which cuts those whom it is intended to defend.

[Mr Von Struve shews the utility of Phrenology to the educator, the clergyman, and the physician, and proceeds :—]

He who does not know the functions of each particular organ in its state of health, will not be able to distinguish the disease of one organ from that of another. He who does not know that a man may possess sound organs of the intellect with diseased organs of one or more of the sentiments—just as he may have a diseased stomach with sound intestines, or a sound heart with diseased lungs—will never discriminate and judge accurately in cases of diseased mind. Not only to the physician, but to the judge and juries, is this knowledge of the highest importance. Hundreds of men have fallen victims to the gallows because the judges and medical jurists have been unable to discriminate between disease of one or more individual mental organs and disease of the whole, and, in particular, because they admitted only those persons to be insane whose intellectual faculties were disordered.

[The influence of animal magnetism on the manifestations of the mind is next mentioned by Mr Von Struve, but under the qualification that he has no personal experience on the subject. After noticing the progress of Phrenology in England and North America, he concludes as follows :—]

Here again, in her fatherland, Phrenology raises her head ; and to-day, for the first time, desires, from the cultivators of German science, not honour, acceptance, and renown, but a careful and conscientious scrutiny of her pretensions : and, on the ground of her capability to sustain the strictest investigation, she claims, in due season, her re-admission into her native territory, and a place among her kindred, the other natural sciences.

II. *On the Measurement of Heads.* By Mr JAMES STRATON, Aberdeen.*

Gratified to find the conviction very unanimous, that our present mode of estimating size in phrenological observation is so imperfect as to warrant any change, however little, provided it be for the better; and supported by some of the most eminent phrenologists, in the opinion that we are prepared to advance some steps in this department, I gladly avail myself of permission to submit a few statements, which are chiefly intended to elucidate more fully some of the points treated of in my *Contributions to the Mathematics of Phrenology*, and to which my wish to economize your space will induce me to make frequent reference for additional information.

The anxious desire which exists to effect improvement in our mode of observation is indeed little to be wondered at, seeing that the instant we can substitute *fact* for *opinion* (well founded though it be), accurate measurement for empirical estimate, recognized standard value for variable, indefinite, individual judgment, we rank Phrenology among the "exact sciences," in the strictest sense of the term; we invest our science with precise and uniform ideas of size; we extend our field of accurate comparison over every accessible portion of the human race; we secure the co-operation of many powerful minds who can admire no evidence short of mathematical demonstration, in cases where that may reasonably be required; and we enable the intelligent, honest, scientific phrenologist, to take his proper place, apart from the ignorant, impudent, money-hunting quack, who can then, and then only, be tried by a standard which will secure his conviction, and before that tribunal from which there can be no appeal.

Absolute size of the head. This is necessarily the basis of all the subsequent steps in estimating development; hence it is of the utmost importance to be accurately determined; nevertheless, in prosecuting my investigations in the mathematics of Phrenology, nothing surprised me more than the fallacious nature of our ordinary modes of measurement for effecting this purpose. It soon appeared to me that it is far better to leave the eye alone to judge of the absolute size of individual heads, because in so doing the chances of error are considerably lessened; or, at any rate, the eye is not misled by trusting to a false guide. The few examples taken at random, and quoted in the following table, will make this

* A large portion of this article has already been published in the *Zoist*, No. xii., p. 441. The seventh and four succeeding paragraphs are now added.

point plain to such as may not have previously happened to notice it. The first column contains the sums of six measurements taken by a tape-line, as follows : 1. Greatest circumference of the head ; 2. From the occipital spine over the top to the transverse suture ; 3. From the occipital spine over Cautiousness and Causality to the transverse suture ; 4. From ear to ear over Self-esteem ; 5. From ear to ear over Veneration ; 6. From ear to ear over Comparison. The above series is perhaps as good for our present purpose as any other that could be taken by the same means. We shall judge of their accuracy presently.

The second column contains the sums of six measurements by callipers, as follows : 1. From Secretiveness to Secretiveness ; 2. From Constructiveness to Constructiveness ; 3. From Concentrativeness to Eventuality ; 4. From ear to Concentrativeness ; 5. From ear to Firmness ; 6. From ear to Eventuality. This series is all taken from and to central points, and is, consequently, equal to any that can be taken and used in the same way.

The third column shews the absolute size in cubic inches, as determined by displacing water.

No. 1.	97	38	174	No. 8.	93	35	136
2.	98	37	165	9.	93	36	150
3.	98	38	180	10.	91	34	148
4.	95	38	180	11.	87	35	138
5.	91	35	155	12.	92	34	145
6.	85	32	117	13.	88	34	130
7.	89	34	135	14.	86	33	130

By comparing the above columns, without referring to the specimens measured, or aiding the memory and judgment by looking at the names, the fallacious nature of such measurements taken to ascertain absolute size will be obvious ; they are not simply useless, they are positively pernicious, because they mislead when trusted in.* It can hardly be otherwise than that innumerable errors should be fallen into by those trusting to such measurements ; for the fact cannot be got over, that an accurate estimate of the absolute size of the head is the basis of all subsequent steps in the taking of development.

It was after exhausting errors in attempting to obtain accuracy, *first*, by modifications of the ordinary methods, and *second*, by spherical measure, that I turned to the system followed in measuring certain classes of irregular cubes. In

* The specimens measured are the casts of the following heads and skulls, in the order of the table,—Gall, Rev. Mr M., Cordonnier, Linn, Eustache, C. Fisher, M'Innes, Greenacre, Hare, Burke, Martin, Burns, Swift, Wurmser.

studying the various shapes which the human head assumes, I was led to the conclusion that, in the vast majority of cases, the form is so much more cubical than spherical, that it may be described as *an irregular cube with the angles rounded off*. This statement is, I believe, at variance with ordinary received opinions; but I must, nevertheless, submit it as a fact, and one of great importance in our present investigations.

On this system of measurement I first tried the method of equidistant ordinates, but found that so tedious, and every means I could think of so complicated, as to be all but impracticable in measuring the head as a whole, and useless in measuring the separate regions, in which to be guided by anatomical points and lines, has been regarded by me as a first essential. My attention was then directed to accomplish the ends in view by the smallest possible number of measurements, and with the simplest possible instrument. When I found that the *average length* was obtained by one measurement, I had hopes that the average breadth might be obtained by less than four, and the *height* by less than three, measurements. With this view I made a great number of trials, but without success. I have found many cases where the breadth was obtained by three, frequently even by the average of two measurements; but other cases occur, in which three measurements are not sufficient to obtain the cubic results within the limits which I have assigned to admissible error, namely, five inches, or half a size, on the whole head. By the formula adopted, I have rarely seen this limit touched, and never passed, in any case which I could subject to proof. Moreover, it will be observed, on glancing over the "Contributions," pp. 9 and 10, that the measured size is, when not the same, always *below*, never above, the proof dimensions; so that, in practice, by making a slight addition for any prominent single organs that are distant from the points of measurement, the absolute size is obtained within two inches on every shape of head short of monstrosity. This degree of accuracy is obtainable by eight calliper measurements; and six of these are again available in estimating the regions.

By the order of nature, it so happens that a large proportion of the heads in the same locality present a great similarity of form. It is legitimate to avail ourselves of this arrangement, for the purpose of abridging labour. A table of the average proportions for every size, may be prepared for every type of head. That being done, a single measurement (3 to 30, the average length) will lead to the line of the table

in which the breadth, height, and cubic measure, of the corresponding type, will be found at sight.

The following is a specimen of a table which exhibits the size and corresponding proportions of the form of head most common in this country.

Its use may be exemplified thus:—Suppose the average length (3 to 30) of the head to be measured is found to be 7·4. Following this number on the same line will be found 5·5, the breadth; 3·4, the height; and 138 cubic inches, the absolute size of the head. If the head to be measured appears to be broader or narrower, higher or lower, than ordinary, it is then necessary that all the measurements be taken, and the dimensions found, either by multiplying the terms, or taking the average of the corresponding cubic measures.

EXAMPLE.	Length, 7·4	Cubic measure, 138
	Breadth, 5·6	„ 149
	Height, 3·3	„ 126

3413

138 nearly.

By multiplication 137 nearly.

Such tables have other uses than that just stated:—first, they indicate to beginners the general laws of proportions; and, second, they serve to check calculations, in cases where proof cannot conveniently be obtained. But I beg, once for all, to say, that ease should never be thought of at the expense of accuracy. The vast and important problems connected with our science which wait to be solved, will call for a degree of accuracy, such as mere cursory observers will never approach.

Average			Cubic Measure.	Average			Cubic Measure.
Length.	Breadth.	Height.		Length.	Breadth.	Height.	
5·6	4·1	2 6	60	7·3	5·4	3·4	134
5·7	4·1	2·6	61	7·4	5·5	3·4	138
5·8	4·2	2·7	66	7·5	5·5	3·5	145
5·9	4·3	2·7	68	7·6	5·6	3·5	149
6·	4·4	2·8	74	7·7	5·7	3·6	158
6·1	4·5	2·8	77	7·8	5·8	3·6	163
6·3	4·6	2·9	84	7·9	5·8	3·6	165
6·4	4·7	3·	90	8·	5·9	3·7	175
6·5	4·8	3·1	97	8·1	5·9	3·7	177
6·7	4·9	3·1	102	8·2	6·	3·8	187
6·8	5·	3·2	109	8·3	6·1	3·8	192
6·9	5·1	3·2	113	8·4	6·2	3·9	203
7·	5·2	3·3	120	8·5	6·3	4·	214
7·1	5·3	3·3	124				

It may here be added, that, after measuring a few dozens of specimens by the method referred to, individuals possessing full average powers of observation will rarely find it necessary in ordinary cases, and where great accuracy is not required, to have recourse to actual measurement (though after some practice the whole can be easily done in from three to five minutes); the human head is an object which the eye can easily grasp—if I may so speak—and will at a glance, in ordinary cases, form a very accurate estimate of the absolute size of. This statement may be doubted by parties not accustomed to estimate cubic measure; be it so. But all my experience warrants the affirmation, that if the head to be measured does not differ much from the ordinary shape which the observer has practised measuring, he will find that, as a general rule, it is not difficult to say at sight what is the cubic measure within five inches of the truth. Such being the case, then, it is obviously better, even on the score of mere saving of labour, to practise measuring absolute size in preference to any other mode; which, though it may appear at first sight more simple, yet will not, after any extent of practice, enable the observer to estimate size with the same degree of accuracy.

The best rule for practice is to measure every head carefully, until the eye acquires precision, and the observer confidence; after which measure ordinary heads occasionally, to make sure that the eye retains its accuracy, and uniformly measure every head in any way remarkable for shape or size, when doubts are felt, or great accuracy required.

The proportional quantity of brain, which corresponds to different sizes of head, is somewhat variable, and requires to be noticed. Rules for estimating the brain, bone, and other coverings separately, are given in the *Contributions*, page 14. A few examples will here suffice to make the whole obvious.

Size of Head,	70 cub. in.	Brain,	40.	Coverings,	30 cub. in.
„	93	„	60.	„	33
„	122	„	80.	„	42
„	146	„	100.	„	46
„	160	„	110.	„	50
„	172	„	120.	„	52
„	190	„	135.	„	55
„	210	„	150.	„	60

Above it will be seen that the size of the brain increases more rapidly than the coverings in proportion to the whole head. The first line multiplied by two would give size of head 140 cubic inches, brain 80, and coverings 60 cubic inches; and multiplied by three, it would give head 210,

brain 120, and coverings 90 inches; whilst the above table, deduced from actual measurement and calculations, shews that a head of 146 inches incloses 100 inches of brain, and has only 46 inches of coverings; and that a head of 210 inches incloses 150 cubic inches of brain, and has only 60 cubic inches of coverings.

It follows, as a matter of course, that if we assume 10 cubic inches to present a gradation in size (and it is the most convenient size perhaps that can be taken), a head of 140 cubic inches is not only equal to twice 70 in native power, but two sizes more, *i. e.*, equal to 160, as compared with smaller heads; and that a head of 210 inches is equal to three times that of 70, and three sizes more. In practice it will be very near the truth to take 45 cubic inches as the size of the coverings of medium heads; and it is only in very large and very small cases of adult heads, that it is necessary to substitute a different proportion in estimating development or mental power. I have throughout assumed, and necessarily so, that the coverings are constant as regards thickness. I believe that, as a general rule, they are sufficiently uniform for our purpose; but I have long suspected, that individuals in whom the lymphatic temperament preponderates greatly have thicker bone and integuments than those in whom the nervous preponderates.

The *average, mean*, or medium size of head which prevails among different tribes and nations, is a point of great consequence to be known; but it is difficult, or at any rate laborious, to secure accuracy, as we shall see presently; but let us first distinctly understand what is the precise nature of the average or mean, which it is important to know. There are, strictly speaking, two average or mean sizes connected with our inquiry. First,—the mean between the two extremes of size. Is this the important point to be determined? We shall discover whether it is so or not by reflecting on the points to be elucidated in this department. Let us see—

As size is, *cæteris paribus*, a measure of power, we conclude that among nations, as among individuals, force of character is determined by the average size of head; and that the larger-headed nations manifest their superior power, by subjecting and ruling their smaller-headed brethren—as the British in Asia, for example. Now, shall we discover the key to the superior power of the British character, by finding the mean point between the extreme sizes of head? Assuredly not; for we possess tolerably conclusive evidence, that as large heads may be found in Hindostan as in Britain, and as

small heads in the latter as in any part of Asia: such being the case, it follows that the mean between the two extremes of size is the same in both countries; it therefore affords no key to national character.

But there is, as we have said, a second average or mean connected with our inquiry, which we will find more important to know, and which we may illustrate thus.—Suppose that 1000 heads of any tribe or nation are measured accurately, the sums added together, and the result divided by 1000, the quotient obtained would represent a head different, it might be, from any of the 1000; but if so, it is one which would represent the true size of the national head more accurately than any one of the 1000. Or suppose, again, that 10,000 or 100,000 heads were measured in the same way, the quotient then obtained might be slightly different from the former, considerably different from any one of the heads measured; but in so far as it differed from all the others measured, so much more nearly would it be a true representative of the national head to which it belongs. Let us, then, for the sake of simplicity, call the head thus represented the *average* head, and the medium between the two extremes the *mean* head.

From the evidence which I have seen, I am led to suspect that the extremes of size (and of course the means also) are the same, or nearly so, in all countries. Be this as it may, the evidence is conclusive that the *average* size of head differs to a very great extent in the different races, nations, and tribes, of which the human race is composed. Such being the case, it follows, that when we have discovered the average size of head of any tribe or nation, we are so far prepared to estimate its national power of mind and force of character. The following extract from the *Contributions to the Mathematics of Phrenology*, p. 21, will illustrate our position:—

Average size of Caucasian head,	. . .	137	cubic inches.
„ Mongolian,	. . . . .	127	„
„ Malayan,	. . . . .	126	„
„ Ethiopian,	. . . . .	123	„
„ American Aborigines,	. . . . .	122	„
„ Asiatic,	. . . . .	119	„

The sizes are given as an approximation to the truth. From the small numbers of specimens of most of the races which have been measured, we are quite unable to be sure of accuracy; this, indeed, cannot be looked for until extensive series of measurements have been produced from each race on its native soil.

III. *A Phrenological Glance at a Ragged School.* By Mr
E. J. HYTCHE.

It is an interesting province of Phrenology to deduce the characteristics of the type of head which predominates amongst the adult criminal class ; but it is doubly instructive to study it amongst boys who either are felons, or, from being trained to thieving as a profession, must become notorious felons in time. For, in the one case, we examine heads which have so much deteriorated that any material improvement cannot be anticipated ; while, in the other, we manipulate a class in which the original elements of character are not extinct, and which may therefore be regarded as capable of alteration, either for good or evil. A fair opportunity for such study is presented in those valuable institutions called " Ragged Schools," which have been established during the last three years, and of which about twenty already exist in the most degraded and dangerous districts of the British metropolis.

A " Ragged School" may be briefly characterized as a *school for thieves* ; for, with a very few exceptions, the children admitted into such seminaries are either the sons of felons and abandoned women, or young thieves. Taking the " Ragged School" in Field Lane, Smithfield,* as an illustration,—for no other school includes so utterly debased a class amongst its pupils,—it is gratifying to be able to premise that the attempt, not to crush and annihilate, but to guide the rampant animalism into proper channels, has not been in vain ; but that not a few have been rescued from a life of sin and shame, and placed in positions to become blessings rather than curses to society. It needs but a glance at the physique of these boys to perceive that mental daring predominates over bodily strength ; for as they are subject to alternate fits of repletion and starvation, and as, in addition, the air which they continually respire is surcharged with the foulest vapours and pregnant with death, dealing fevers instead of conferring the healthy bloom of youth, they appear emaciated, care-worn, and consumptive.

The heads of the majority of the boys are large, much larger indeed than the heads of most well-educated youths ; many, in fact, of the age of fifteen, possessing heads as large as those of active men of thirty : and no phrenologist could hesitate in inferring that, if their life is to be a life of crime,

* See in Chambers's Journal, 7th June 1845, an article entitled, " Visit to a Ragged School."

it will be characterised by no common amount of vice, but become notorious in the annals of crime. Out of fifty boys, varying in age from five to sixteen, I have not traced the lymphatic temperament in one, and the signs of the nervous are presented by very few. The sanguineous predominates—every boy possessing a large measure of that temperament—and about one-fifth also possess a slight share of the bilious. In accordance with the usual accompaniment of the sanguine temperament, they manifest great physical vivacity, even the most studious keeping their limbs in incessant motion, as if bodily quietude were positively painful. I expected to find, as in the adult criminal class, that the posterior lobe would considerably preponderate over the anterior; but I found that the head was nearly equally divided, taking the portion of brain in front, and that at the back; of the ear, as the points of observation. The great absolute and relative size of the frontal lobe is striking; in most heads there is that prominence and bulging out of the forehead, which generally accompanies active or precocious intellect; and in many there is great breadth and height. Most of the perceptive organs are well developed; those of Individuality, Form, and Tune, being the largest, and Order being the smallest. The reflective group is not deficient, Causality being rather large, Comparison large, and Wit very large. As might be expected from such an intellectual organization, they display unusual acuteness, and a readiness of inquiry and apprehension which is striking; and their mental acumen is rendered more piquant by a rich fund of drollery, and the interspersions of witty observations, which are often as true as they are original. The greatest difficulty is found in overcoming their innate love of fun; but when their interest is once excited they need no farther guidance, but never rest until they have got at the *marrow* of a subject.

Taking the average, the organ of Veneration is very feeble, and they exhibit a sad want of reverence for sacred subjects, and a defective perception of that common everyday respect which is due to all, and which elevates courtesy into something far higher than mere compliment. The organ of Secretiveness is very large, and its influence on the intellect is characteristic. Nothing delights them more than to submit questions which they know cannot be answered, or to mystify the teacher by tales of marvellous events; and by a natural Socratic mode of questioning, they often succeed in trepanning their instructor into some absurd admission, the drift of which he does not perceive until the sly smile mantles their countenances. The organs of Combateness

and Acquisitiveness are very large; and the native tendencies to pilfering and pugilism are difficult to check. There are also the cerebral signs of great Firmness, accompanied by an obstinacy which it is difficult to repress. The coronal surface is rather flattened, but rounded at the regions of Hope and Benevolence. It is impossible to glance at a development such as that which has been portrayed, without perceiving the elements of a character, the ultimate direction of which must mainly depend upon the kind of culture which it receives. If, uncared for, they are left in Field Lane,—where the gin-palace is the sole object which presents any signs of prosperity, and where to be expert in crime is to achieve the highest excellence,—there can be no doubt that they will receive that kind of moral training which shall ensure Norfolk Island as their inheritance. Education, especially that of a moral and religious character, can alone preclude this fearful result, and instil those higher ideas of the purposes of man's creation, which shall cause them to shun vice as the murderer of the soul.

It is to be regretted that the "Ragged Schools," the female department excepted, are only open on Sundays, and thus the teachers have but three or four hours whereby to compete with the vice-education of a week. It is also to be lamented that the assistance of Phrenology has not been sought in classifying the boys; and that the old-fashioned system of placing boys according to age, and not according to character, prevails to a sad extent. Still, much good has been already effected; to the intellect has been imparted a taste for healthy food; the moral and religious feelings have been sedulously trained; Benevolence has been taught how to counteract and quiet the aggressive impulses; and love to God, and its best evidence, love to man, have been manifested in boys to whom the very ideas once presented food for laughter. No other comment need be made than the soliloquy which occurred when I first visited the "Ragged School,"—How much wiser is it to educate than to imprison, and how much better a teacher is moral education than the gallows!

ISLINGTON, 3d March 1846.

IV.—*On the Heads and Mental Qualities of Sir Walter Scott and other eminent Individuals, particularly Novelists and Men of Science.* By Mr CHARLES PRENTICE, Cheltenham.

It was long ago said, by the acutest of all physiognomists,

Shakspeare, "There is no art to find the mind's construction in the face;" and in truth, the dreams of the amiable Lavater are ill calculated to guide us in discriminating the characters of those with whom we are daily brought into contact. Phrenology alone supplies a nearly unerring guide to the important features of character, which any impartial person may verify by daily experience; but it is perhaps more interesting to remark the psychical characteristics of those whose writings, or whose actions, have indicated the presence of unusual ability.

When Sir W. Scott's brain was examined after death, it was stated loosely to be "not large." This gave occasion to the opponents of Phrenology to vent the hasty objection, that this was in direct contradiction to the essential position, that size, other things being equal, is a measure of power; a proposition, by the way, as unassailable as that "the greater contains the less," and which is recognised in the latest work on Physiology published in Britain (Todd and Bowman's *Physiol.*, vol. i., p. 367). This special objection has been answered by observing, that the coronal height of Sir Walter's head was not taken into consideration;* but it appears to me, that an equally good refutation may be deduced from even a cursory examination of his writings. These are remarkable for the predominance of no one mental quality, but an equable and delightful melange of several. His life shews that the organs of the propensities did not predominate; and his works evince that the intellectual and moral elements of his character were in beautiful harmony. The organs which give the most showy appearance to the frontal aspect of the head, are Causality and Wit in excess, both of which Sir Walter manifested in a considerable but not very high degree. Had he possessed a very predominant Causality, he would either never have attempted romance-writing, or his fictions would have been metaphysical and prolix, would have dwelt too much upon principles, and would, consequently, have wanted that terse delineation of character and incident, so fascinating in his writings. That he did not possess an excessive development of Wit or

* [We disbelieve the statement that Sir Walter Scott's brain was "not large;" and repeat here what was mentioned five years ago in vol. xiv., p. 104, that "we have good authority for asserting that one of the medical gentlemen present at the *post-mortem* examination thought it, on the contrary, *large*, and was even struck with its unusual size." The information which had reached us on the subject was, on 10th April 1840, communicated by us in writing to the medical gentleman referred to, and we are not aware that it has ever been contradicted by him, either then, or since the publication of the above-quoted statement.

An article by Mr Combe, "On the Size of Sir Walter Scott's Brain," will be found in vol. xii., p. 44.—Ed.]

Ideality is equally obvious ; thus the humour which he so happily displays in his prefaces and novels, and which was partly the result of his Secretiveness, nowhere predominates, and he does not select characters as stalking-horses, under cover of which he may expend his redundant humour, as is the case with his countryman Smollett, whose writings, on that account, want much of the interest inseparable from a feeling of the probability of incident and character. With regard to Ideality, his metrical romances please by precisely the same qualities which distinguish his prose writings, and they nowhere display extravagant imagery, or over-gorgeous colouring, so apt to be found in the writings of those who have an excess of Ideality, nor that metaphysical mysticism which results from a very large Causality, when combined with Wonder. It is to the latter organ that all his deviations into the improbable, or into the incredible, are referable, when they do occur, which is not often, and always confined to supernatural occurrences. Causality, Comparison, Wit, Ideality, Eventuality, and Individuality, largely developed, aided by Secretiveness and Wonder, with an excellent temperament, and the early direction of his tastes to local antiquities, appear to me to have raised Sir W. Scott to the enviable rank he occupies, as the first master of fiction ; but had any one of the four first-mentioned faculties excessively predominated, his writings would probably have failed of securing that extensive and permanent popularity which they enjoy. Lord Byron contrasts strongly with Sir Walter, than whom he possessed larger Causality, Ideality, Language, and Concentrativeness ; his poetry was soon recognised as superior, but his crude attempts at prose fiction were immeasurably below those of the great northern " master of the spell." Lord Byron also evinced much larger Destructiveness than Sir Walter, which would increase the size of his head, without adding materially to his literary abilities.

The predominance of a single faculty, or rather two faculties, Wit and Language, is strikingly manifest in the writings of Rabelais, so popular in their day, but which now can hardly be read without disgust. Swift, who has been unworthily styled the Irish Rabelais, possessed more intellect but less learning than Rabelais ; and his writings, which, like those of the Frenchman, abound unpleasantly with coarse humour, are yet distinguished by profounder views, and a more masculine understanding. The portrait of Cervantes appears to indicate the presence of several intellectual faculties, somewhat as in Sir Walter Scott ; and in him we always find the humour subordinate to the intellect. A large en-

dowment of several intellectual faculties is clearly essential to great success in literature or science, but excessive development of the propensities or sentiments would be unfavourable; the latter conferring too much sensitiveness to opinion, and inability to bear unruffled the inevitable attacks of slander and envy; while the former prompts to self-indulgence and indolence,—fatal clogs to genius. This was so much the case with the Emperor Victorinus,—who appears to be the historical parallel of Henry IV. of France,—that his surpassing abilities were rendered of no avail to himself or the Empire, by the undue activity of one propensity. His character is thus represented by Julius Aterianus :—"Victorino qui post Junium Posthumum Gallias rexit, neminem existimo præferendum; non in virtute Trajanum; non Antoninum in clementiâ; non in gravitate Nervam; non in gubernando ærario Vespasianum; non in cursurâ totius vitæ, ac severitate militari, Pertinacem vel Severum: Sed omnia hæc libido et cupiditas voluptatis mulierariæ, sic perdidit, ut nemo audeat virtutes ejus in literas mittere, quem constat omnium judicio, meruisse puniri."—*Histor. August.*, p. 137.

It is equally interesting to contemplate the comparative range of ability evinced by men of science; some (and the majority) obtaining eminence only in one department, while a few others were capable of a more extended and arduous range of intellectual exertion; and these various talents we shall generally find accounted for by the different developments presented by such individuals.

Of the older naturalists, almost all were men possessed of extensive information in other branches of knowledge; for the little that was known of natural history was easily acquired by men whose observing faculties were so strongly developed as those of Gesner, Aldrovandus, Clusius, Fabricius, &c. But as observations multiplied, and exactness was more valued, it became necessary to bestow more time and labour to master a single department of knowledge, and it was from this that one set of faculties, the perceptive, came to be nearly exclusively cultivated by the herd of scientific men; and as the ancients employed chiefly Imagination in their parody of nature, so the mass of the moderns came to apply observation, pretty much to the exclusion of Imagination, and, in many instances, of Reflecting Intellect. This has imparted a mental idiosyncrasy to professedly scientific men, which is sufficiently obvious.

But though crowds of facts were accumulated by the industry of numerous and inferior labourers in every branch of natural science, yet, necessarily, little method was at first

employed, or if artificial systems rose into temporary notice, it was only that they might be destroyed by new and incompatible facts, which every day elicited: thus, in one branch of natural science only, in looking at the host of crude and abortive arrangements given by Boitard in his *Taxonomie Botanique*, from Dioscorides down to Adanson, we see how vain it is to attempt the formation of systems, till a sufficient number of facts be verified to allow of successful, because extensive, generalization. But at last Bernard de Jussieu came and marshalled the host of isolated truths which others had discovered.

The same occurred in the study of anatomy and physiology; there were many who, like Ruysch, Pecquet, Malpighi, Leuwenhoeck, and others, made numerous and correct observations, without being able to combine them into a well ordered system, till Haller, with an intellect and imagination no less remarkable than his powers of observation, did for physiology what Jussieu did for botany, and, at a later day, Cuvier for zoology. But these men who, so to speak, were elevated on a pedestal erected by the labour of others, were all possessed of capacious and general intellectual powers; and it may be truly said that Harvey, Haller, and Bichat; Linnæus and the first Jussieu; Fabricius, Redi, Spallanzani, Reaumur, and Cuvier, though differing much among themselves, yet offer a mass of intellect, which might have "furnished forth creation." These were not merely observers, whose highest pride it was to have ascertained a fact, but who were capable of appreciating the value of the fact in the plan of nature; not makers of bricks, but builders of temples.

A curious, but hardly a just retribution, has taken place in the predominance of one set of faculties over another, which formerly held them in severest thrall. The school of Aristotle, which subsisted with pretty absolute, though occasionally disputed sway, till the days of Ramus and Bacon, was chiefly upheld by the aid of Veneration and the Imagination; men bowed with as much submission before the awful aristarch of science, as before the living hierophant of Rome, and those who disputed the authority of the first, were precisely those who questioned the legitimacy of the sway of the second. And now when truth, however obscure, or however minute, has enlisted the energies of the observing world in its service, we see that Veneration and the Imagination are proscribed, as incompatible with the scientific character; and the Five Senses, as inlets of all our positive knowledge, treat with disdain the suggestions of their once triumphant rivals, Veneration, Wonder, and Ideality.

V.—*On the Practical Application of Phrenology in the Ordinary Affairs of Life.*

Phrenology has now been known many years ; since its discovery we have been confirming its principles, adding facts, correcting errors, and perfecting its system, and still much remains to be done.

But is not the science now perfect enough to yield more abundant fruits than have yet been gathered,—a more adequate reward for this labour? Knowledge is power ; it has proved so at least in all physical science ; and the knowledge of mind ought to give power over mind,—power to do better all the work of mind. And that it does so, Hanwell Lunatic Asylum and Norfolk Island afford strong, if not sufficient proof.

The good so striking, so wonderful, that has flowed from the bold use of Phrenology in those cases, was it accidental? Is there anything peculiar in the case of criminals and lunatics which affords an easier conquest to science, or renders them alone capable of receiving its benefits? No ; that good was the necessary result of the wise application of the science of mind to rule mind, and such application can more easily yield an increase of good to sane and virtuous minds.

Phrenology being true, all the work of mind,—trade, commerce, literature, education—all that is performed by individual or associated mind,—can be better carried on by the aid of Phrenology than without that aid. And if so, such palpable undeniable advantages can be gained by the wise application of Phrenology, that society would hasten to acknowledge its truth, in order to partake of those advantages.

Phrenologists claim to have discovered the science which enables man to obtain a knowledge of each individual's innate capability and trustworthiness, the want of which knowledge is the most fruitful source of human misery,—the possession of which will materially help society to put each in his right place. True, by Phrenology, by the mere shape and size of an individual's head alone, we cannot predicate a man's actions, his trustworthiness, his immediate fitness for particular duties ; but, aided by an easily attainable knowledge of his opinions and principles, of the extent of his mental cultivation, of the temptations by which he is surrounded, and the general circumstances in which he is placed, we may do so. The organization, and, to a certain extent, these circumstances of an individual being known, no sound-minded practical phrenologist would hesitate at pointing out the

situation he would well fill,—the duties he would properly perform.

If any one has never considered the importance of this power, let him observe the evils which spring from the want of it in all human affairs. Every family, every workshop, every body of men associated for any purpose, above all, every nation, shews the disorder, suspicion, selfishness, and waste of human exertion, which arise from placing men in situations for which they are unfit, and keeping them out of those for which they are fit. Children under the care of ignorant, vicious, selfish teachers; men intrusted with power and authority, who are certain to use them to gratify their own greediness and ambition; men and women, who, for their own and others' sake, require the discipline of the lunatic asylum or the penitentiary, entrusted with enormous influence, and allowed to sport with the destiny of millions; while genius, knowledge, and virtue are lost in obscurity, or struggling and sinking under difficulties.

These, the prolific sources of evil, and the formidables of good, are some of the effects arising from man's ignorance of man, an ignorance which, with phrenologists, no longer exists.

* * * *

The science of mind enables us to do better all the work of mind. Consider its value in association, the principle on which human power and progress so greatly depend. Hitherto, all associations have necessarily been feeble and imperfect, compared to what they are capable of being; because men were ignorant of the nature of that which they attempted to combine and work with. But now we can associate for any purpose with vastly increased power and confidence. We know the fitness, the strength, of each individual mind so far, that we can place on each the reliance it deserves; while, without Phrenology, each mind is an uncertain, fickle agent, which we cannot safely trust after the longest experience.

If I could but draw the attention of phrenologists to the importance of our science even in this one respect alone, I should be satisfied. Think on what single, isolated minds have done: from that judge what vast power must be gained by the mutual assistance and confidence of many such minds, associated. The means of uniting men so that they can act together with safety and confidence, and so that each mind can be set to work in its proper direction, being once found, then whatever man has done or can do, will be done infinitely better in every way than it ever has been or can be otherwise done by individual or collective man. Whether in commerce, literature, or politics, men so associated could not fail to

leave all others far behind them. At present, all associations, powerful as some of them are in spite of their imperfections, are formed of the most discordant and opposing materials ; a far higher degree of association, in which each should take the part he is suited for, and have sufficient confidence in all the rest, would be attained by attending to the following principles and circumstances in the selection of the members :—

Cerebral development, temperament, and quality of brain.

The acknowledgment of common principles and rules of action in matters on which the association might have to act in common ; for two individuals of exactly the same organization, may be unable to act in concert if acting on different principles.

And, in some cases, a knowledge of the circumstances and mental culture of each individual.

All the causes of human action and power would thus be taken into account, and the conduct of each might be calculated on with sufficient safety.

Ten men of superior mind thus associated, would have greater power than ten thousand men bound together only by the loose ties of ordinary association, and among whom jealousy, ignorance, selfish designs, and suspicion, are continually at work.

A splendid proof of the power of Phrenology and of education together, could be given by forming a model school of children of the finest obtainable cerebral and general physical organization, and educating them with every advantage by a teacher of the highest experience, cultivation, and cerebral development. If such a teacher do not give to the world men and women who shall be living proofs, which folly and bigotry shall not dare to deny, of the value of Phrenology and of enlightened education, then the greatest writers on both those subjects are mere visionary enthusiasts.

Or, if the best possible amusement, instruction, and society be required, institutions may be formed (similar to the existing literary and scientific institutions, club-houses, &c.), an essential to membership of which should be, the possession of a brain not below a stated proportion. Such institutions might be formed in at least every large town. Besides the great benefit of bringing superior minds into community, they would offer to them luxuries, conveniences, enjoyment, and instruction, at a lower rate, and higher in degree and character, than is possible any other way. They might be made profitable speculations, by the cultivation and education of those whose organization shewed them capable of

high excellence in elocution, music, and various other arts and sciences; and the public would soon find out, and liberally pay for, the superior instruction and entertainment such institutions could afford.

In fact, as all human affairs are carried on by association, whether of two or three individuals or of millions, and as their success depends on the firmness of that association more than on anything else, Phrenology, if it gives the means of rendering association more secure and easy, must be equally applicable and valuable in every kind of human exertion; and wherever wisely used, must produce results as new, as great, and as good, as it has done in the management of convicts and lunatics.

The applications of Phrenology which I have mentioned may not be the best, or they may be impracticable; still I wish to press on the consideration of phrenologists the fact, which they must at once admit, though they have paid little attention to it, that they possess a vast, almost untried power, but which, so far as it has been tried, has produced results which testify its power, and that, by wisely using it, they may produce great good to themselves and to society.

And perhaps this is the means by which Phrenology is to triumph. New truths make their way, not by argument, but by visible fact; the fact of the practical advantage attendant on them, excepting only those truths which have no apparent connexion with the institutions, the realities, of the time. With the mass of men, that which is—which is operating before their senses—outweighs all argument; they will not forsake it for what their reason teaches them may be. Had an individual discovered the applications of the power of steam to perform all its now familiar wonders, and demonstrated it all on paper or by models, it might have remained demonstrated for ages, and the generality of men would never have altered their habits and methods to carry out the demonstration, however great the good it might promise; but would rather have laughed at him who, with his fine theories, came to teach practical men. But as soon as some mind, not so cramped by prejudice or custom, tries the experiment, gains by the trial, and promises to beat the old methods, and those who live by them, out of the field, then it is no longer a laughing matter, but dull satisfied men must so far shake off their ignorance and conceit, and adopt the plans, and get the assistance of the visionary. Thus those are compelled now to receive the advantages of science, who, a few years since, derided, and would still have derided, the attempts of the scientific, supported by the strongest argu-

ment, the clearest demonstration. Society is thus obliged to move forward; and truth and knowledge progress not by argument merely, but by reality.

In conclusion, I would urge on our leading minds to set themselves earnestly to the work to which present circumstances peculiarly invite them, of making Phrenology a visible practical agent in the affairs and business of society; let them, like Ellis and Maconochie, look fearlessly on the difficulties they have to overcome, the evils they have to subdue, and trust in the power of knowledge. The power which produced such happy effects on the felon and maniac, can also better the condition of the moral, the talented, and the industrious; and Phrenology will shew such proofs of its truth, that all will joyfully hasten to acknowledge the science of mind to be the highest of all sciences.

M.

VI.—*Popular Impulses versus Criminal Law.**

The trial and acquittal of Eliza Clark, on Friday last, on the charge of murdering her children, by throwing them off Battersea Bridge, serves lamentably to exemplify the way in which the criminal law of this country may, in some cases, be set aside altogether, according to the impulses of popular feeling, while in others it is made to press with ruthless severity.

It is known that some three or four years back, owing to the outcry raised by the advocates of death-punishments at the acquittal of M'Naughten, the question of the responsibility of criminals was brought before the House of Lords, and that the judges, after long and anxious deliberation, put forth a definition of insanity, which was henceforth to furnish a rule, whenever, in criminal cases, that plea might be set up. According to the definition thus given, the plea could not be received in any case where there was cause to believe that the culprit, at the time of committing his offence, was possessed of a sufficient amount of reason to be aware that he was acting against the law. By the *Times* and the *Examiner*, this view was hailed almost with ecstasy, since it was believed, that the "escape" of prisoners, on the ground of insanity, would thenceforward be rendered almost impossible. In other quarters, however, directly this boasted "settlement" of the question was an-

* From *The Popular Record of Modern Science*, 23d May 1846. London: Miles Coe, 67 Strand.

nounced, it was prophesied that not a month would elapse before it would be departed from; an expectation which was immediately borne out, and which since, on numberless occasions, has received additional confirmation. Ever since the definition was given, it has always been insisted upon, in cases where the feeling of the public, or of the bench, has been excited against the prisoner; while, on the other hand, it has always been treated with entire disregard, whenever an opposite tendency has prevailed. Instances, in proof, might be quoted every month, but it would be impossible to illustrate the matter more forcibly than by the case of Eliza Clark.

In this case, there was not the slightest ground for supposing that the prisoner, at the time of committing the murder, was unconscious that she was acting contrary to the law. Indeed, no evidence of insanity of any description was adduced, further than that which was furnished by *the act itself*; while there was much to prove that, up to the very last moment, she was, on all ordinary points, capable of exercising reason. Some hours previously to the murder, she had written a letter deliberately announcing her intention, and recapitulating, with complete coherence, the circumstances under which it had been come to,—and this letter she had left at her uncle's house while on her way to the bridge, the uncle affirming, at the inquest, that she then “appeared very well in her mind.” It is true that, at the trial, Dr Wansbrough stated, that “shortly after the occurrence he found her pulse 180, and that she exhibited every appearance of a person bereft of her senses;” but we have no testimony that a similar acceleration of pulse is not common in those who have just committed homicide; and certainly, if this circumstance is to be admitted as a warrant for acquittal, it will be allowed by all, that no person ought ever to be hanged for murder, without due evidence being had of the state of his circulation immediately subsequent to the act. It is also to be remembered that, in ordinary cases, any wild or excited appearance manifested by culprits immediately after their offence, is usually set down as an “attempt to feign madness,” and that even if this were not the case, and it were admitted that a pulse at 180, and a wandering manner, sufficiently denoted insanity, after the act had been committed, it could, in no way, furnish what is required by the judges' definition, namely, proof that *at the time* of its perpetration she was ignorant of its being an offence. A person may be very mad according to the common ideas of madness, but still sufficiently reasonable to know that murder is punished with death (a fact which may be easily ascertained by addressing the question to the patients of any lunatic asylum whatever.)

and it was mainly to prevent such persons from escaping the scaffold, that the judges' definition was framed.

We see, therefore, that judges and jurymen in the application of the law in these cases, act completely according to sentiment. The newspapers, also, with the *Times* at their head, proceed upon the same plan. If the offender happen not to excite a temporary sympathy, the judges' definition of insanity is urged against him to the letter, and he is executed; while, in other cases, it is altogether kept out of sight, and the offender is placed under humane treatment, and regarded with nothing but pity. That Eliza Clark was insane does not admit of dispute, because murder is not the act of a sound mind; but this, though it is the only ground on which her insanity can be asserted, is one which, as a general rule, is most strenuously resisted by the public and by the legal authorities. At the same time, those who recognise it have a right to demand that it shall not be assented to in some cases and denied in others, but that it shall be fairly admitted or rejected in all.

Compare the case of Eliza Clark with others that are fresh in recollection. About seventeen months back, Mary Gallop, a young girl of 21, was tried for the unprovoked murder of her own father. This was an act quite as inconsistent with a sound mind, according to all ordinary notions, as the murder of a child; but the interpretation which was given to the offence of Eliza Clark was not applied to this case, and while we see the one kindly taken care of and consigned to benevolent guardians, we read that the other was sentenced "to be hanged by the neck until she was dead." In the case of Mary Gallop, moreover, it was proved that her mother was insane at the time of her pregnancy; that "she set the bed on fire on purpose; that she frequently went out to drown herself;" and that it had long been suspected that the unhappy prisoner herself had been "going in the same way." In this instance, the judge declared the plea of insanity to be a "dangerous defence;" but it is difficult to see how it was more dangerous than in the case of Eliza Clark, and wherein the mighty difference consisted that caused one to be sent to the nurse and the physician, and the other to the hangman.

But it will be said that Eliza Clark attempted to destroy her own life, as well as the lives of her children; and that hence there is a strong additional ground to warrant a belief in her insanity. This is true enough; but the fact must not be lost sight of, that such an argument leads to the conclusion, that the proof of insanity increases with the extent of the crimes committed; a sufficiently rational conclusion, but one that is not generally received with the weight it deserves. Suppos-

ing, however, this view to be admitted, it can still be shewn that it is not generally acted upon, but is merely adopted capriciously whenever the feelings of the public are enlisted in favour of a prisoner, and when there is a consequent desire to make use of any means to get him off. Take the case of Crouch, executed for the murder of his wife, to whom he had been strongly attached. This man immediately afterwards cut his own throat, but was seized in time to prevent a fatal injury. In this instance there was no admission of the plea of insanity; and yet, as in the case of Mary Gallop, there was a strong amount of that kind of evidence which was wholly wanting in that of Eliza Clark, namely, of the previous existence of madness. On the trial, an army surgeon deposed that six years previously the prisoner had been thrown against a wall. "He had apparently received a severe concussion of the brain. I considered the prisoner after that accident to be what is called a 'mazed' man. I mean a man of unsound mind at times. In hot climates, persons who have received a concussion of the brain will, at times, 'run a muck,' as it is there called, and take a sword, and kill any person they may meet." Another witness, also a surgeon, said, "I thought his mind would be affected for a considerable period of time afterwards." Other witnesses, again, testified, "I considered he was not quite in his mind after his accident, and I treated him as such." "He was called the half-cracked man. I have seen burning paper applied to his feet to wake him, and without effect."—"I discharged him from my service, because I considered he had a weakness of mind. There was a degree of wildness about him when he came in; he became a little calmer, and then again excited."

But it will perhaps be denied that any case whatever can so strongly indicate insanity as that of a mother destroying her child. Even if this be admitted, it will not lessen the proof against our criminal courts of partial and sentimental verdicts, for the crime of infanticide has of late been more frequent than any other, and the plea of insanity has by no means been generally admitted. If it be urged that, in the case of Eliza Clark, the prisoner manifested fondness for the children she destroyed, and that this is to be taken as a proof of insanity, we are still in no better position; for scarcely two months have passed since a woman was sentenced to death for the murder of her child, by whom this feeling was exhibited. She was a poor, ignorant creature, in the last stage of destitution, apparently without a friend or a home in the world, and with nothing but 2s. 4d. a-week from her parish, of which she had paid 2s. for the child's maintenance. In one of her wander-

ings, she threw it into a ditch. "When before the coroner, after the inquest, she asked to see her child's body. She said, 'My canny bairn,—my canny, canny bairn,—what made me do this to you? Many a weary foot we've wandered!' She embraced and kissed it. There was some difficulty in getting her away from the body."

When we review these cases, with their hideous terminations, and compare them with that which has just taken place, we look in vain for any clue to account for the fact of their being dealt with by the law upon wholly opposite principles. The leading features of both are precisely similar, and any differences which can be detected tend in favour of the culprits that were hanged. But supposing that the case of Eliza Clark did actually present some peculiar features (of which there is no evidence), could these features, which have hitherto escaped observation, be of such an astounding kind, as to render the distinction between her case and that of the others as great as the difference between black and white, and light and darkness? This difference is actually recognised, for while society performs to one offender the greatest kindness which benevolence can prompt, it wreaks upon the other the last cruelty that man can inflict upon his fellow.

And no explanation can be given. The line which in this country separates the hospital from the gallows, kindness from cruelty, is as sharp as that which, in the minds of some religionists, separates a state of eternal torment from a state of eternal happiness. A hair'sbreadth on either side changes one extreme for the other.

This state of things will continue so long as the belief is permitted that there are some kinds of crime which result from an unsound brain, and other kinds which are quite consistent with its healthful action. When the fact is as fully recognised by the legislature as it is by medical men and the thinking part of the public, that all crime alike arises from a defective cerebral condition, and that the degree of this defective condition is to be estimated by the depravity of the acts committed, we shall approach to a uniform system of criminal treatment. The moral hospital will then on every occasion be substituted for the mere prison or the gallows, and the capricious impulses of juries or of newspaper editors will no longer have power to influence the fate of the wrong-doer. The same justice will be dealt to all—namely, that of subjecting them to such discipline as may be necessary to make them better, and to warrant their return to society; and where this is unattainable, to a strict and permanent, but not revengeful, seclusion. The wealth that is now squandered in the expense of repeated

prosecutions, and in idle attempts at vengeance, will be saved ; and, at the same time, since it cannot co-exist with pity, the dignity or fame of crime will be wiped away. We shall also approach, for the first time, towards a verification of the assertion, that Christianity is not, as it is commonly represented by its teachers, a mere theory for the closet, but that, in its widest, its most literal, and in what the majority of men, if they had the courage to put their real notions into plain words, would call its most quixotic sense, it forms the only safe foundation for the daily practical conduct of society and of individuals. Leaving the wages of sin to be apportioned by Him who can alone search the heart, and say how much was given, and how much, in the long conflict from the cradle to the grave, has in any case been resisted or endured, we shall recognise also that proof of His benevolence—the highest perhaps to human apprehension—afforded in the precept which not only relieves us from sitting in judgment upon our brother, but commands us to obey a sentiment implanted in the breasts of all—often stifled, but never wholly quelled—and which urges us to extend our love not merely to such as love us, but to those who from their fallen nature most need our aid, and by whom alone we are furnished with the opportunity of returning good for evil.

VII.—*Why are Infant Schools languishing ?*

We have recently heard that Mr Wilderspin, the distinguished founder of the Infant School System of teaching, has reached an advanced stage of life without having realized the means of rendering his remaining years comfortable, and that a subscription has been set on foot to provide for his wants ; it has been mentioned also, that the infant school system has in many instances proved unsuccessful. This latter circumstance may appear to some of our readers as the probable explanation of the former ; but we believe that such is not the case, and are, therefore, induced to offer what appears to us to be a more correct exposition of the progress of events.

In the first place, we have reason to know, that the infant school system has *not* failed, wherever it has been faithfully adhered to,* and teachers of adequate qualifications have been

* Infant schools are too often mere intellectual and theological cramming-machines, instead of being devoted, as a just knowledge of human nature indicates they ought to be, chiefly to physical, moral, intellectual, and religious training. The following remarks in a recent work on *Scrofula* by Mr Phillips,

employed ; but, in the second place, these qualifications are so high, that it has been found difficult in many instances to command them, and, in consequence of their absence, several schools have languished and appeared to fail.

As the training of infants is apparently the humblest grade of teaching, it may be matter of surprise that superior mental

assistant surgeon to the Westminster Hospital, have not, we venture to say, been suggested by any school in which Mr Wilderspin's system has been fairly carried out. Our readers do not need to be reminded, that a much-used playground is in Mr W.'s opinion an indispensable adjunct of every infant school. "A great social experiment," says Mr Phillips, "is now in progress, from which most important consequences must follow. The truth seems deeply fixed in the minds of thinking men, that the character of our people is to be determined by the education or mental training they receive in childhood ; and as the conviction is strong that the work cannot be begun too early, children are collected into infant schools almost as soon as they can walk. And as I have had large opportunities (by which I have endeavoured to profit) of estimating the effect of such training upon the bodily health of the child, I will now express the conviction at which I have arrived. I believe, then, the effect is prejudicial. I know that the health of those infants who are suffered to amuse themselves as they please during the day, is better, *cæteris paribus*, than that of those children who have been for many months regular attendants at infant schools. And the reason of the difference I apprehend to be this, that in children the blood is vigorously circulated through the entire frame by means of the exertion of the muscular system ; and this exertion of the muscular system can only be maintained by providing such amusement as will keep the body in motion. The listless walk around the school-rooms, though repeated many times a day, will not quicken the heart's action, and will not warm the hands and feet. And so long as the hands and feet and the surface of the body remain cold for many hours of every day, so long the child will have congestion of some internal organs ; and a state of permanent disease is readily induced, digestion is ill-performed, nutrition is defective ; and if this state of things be long continued, scrofula may be the consequence."

Dr Andrew Combe, in the twelfth chapter of his work on *Physiology applied to Health and Education*, draws the proper distinction between the rational and irrational seminaries. "Infant Schools," says he, "in which physical health and moral training are duly attended to, are excellent institutions. Such are those established and regulated on the plan of the benevolent Wilderspin, whose exertions have gone so far to demonstrate the importance of early infant training. But I regret to say that many schools lately opened under the same name have scarcely any one sound principle in action, and threaten to do more injury to the children by forced and injudicious intellectual cultivation and close confinement, than will be easily remedied even by the best management in after-life. I know some schools consisting of a single small apartment without any playground, and with very imperfect means of ventilation, where upwards of 150 children are crowded together for four or five hours a-day, with no free access to the open air,—no adequate muscular or pulmonary exercise,—no mental recreation worthy of the name,—no systematic cultivation of the moral and social feelings in actual intercourse with each other,—and where, with a few intervals of rest, an occasional march round the room, and a frequent change of subject, the time is consumed in intellectual tasks, to the almost complete exclusion of everything else. Schools of this description cannot be too strongly denounced, as fraught with mischief to the young, and as flagrant abuses of a most valuable principle. But in thus censuring what is radically wrong, we must be careful not to go to the other extreme, and, like Cobbett, condemn as bad that which is so only in its abuses. A well-regulated Infant School is an instrument of great power in improving and humanizing mankind."

endowments and attainments should be necessary for it. But the case appears to be so, and as the explanation of it which occurs to us involves a principle of general importance and application, we venture to submit it to the consideration of our readers.

All the faculties possess instinctive activity, and they are capable of advancing a certain length in accomplishing the objects for which they were instituted, without the guidance of scientific knowledge or well-digested rules. This instinctive power is called common sense. A man endowed with a brain of ample dimensions and high quality, a favourable combination of organs, and an active temperament, is a genius ; and, impelled by the instinctive power of his faculties, he is often able to accomplish great objects, whether in the departments of literature, science, art, or practical life, without any scientific knowledge of the principles of what he is doing, and without being capable of communicating to other minds less gifted the power of producing the results which he has attained. Poets, artists, and musical composers, afford striking examples of the truth of these remarks. But the assemblage of natural qualities, which, when exercised in these departments, is recognised as genius, appears to us to have a wider range than is generally supposed. According to the special combination of the cerebral organs in an individual who is thus endowed, it may confer on one man a genius for money-making in mercantile business, on another a genius for conducting some special department of literature, on a third a genius for teaching, and so forth. By the word genius, in these instances, we mean an instinctive sagacity which enables its possessor to take the right road to attain his object as if by intuition, combined with an active energy in pursuing it, which leads him on to success almost without conscious effort. In this category of characters we are disposed to place Mr Wilderspin.

To an active temperament and energetic quality of brain, he adds, large organs of Philoprogenitiveness and Benevolence, ample organs of Form, Eventuality, Individuality, Comparison, Tune, Time, Language, and Imitation ; and, under the guidance of the instinctive power of this combination, not disturbed by antagonising qualities, he invented, carried into practice, and taught, the system of infant training which bears his name. He latterly knew a little of Phrenology, so as to perceive the relation between it and his own practical methods of teaching and training ; but we believe that he did not arrive at the knowledge of his method through its medium, having been guided solely by the instinctive impulses of his faculties, aided by observation and experience. He was in infant teaching

and training, what Raphael was in painting, and Shakspeare in poetry—a heaven-born genius.

When he exhibited the results of his system, and explained his method, the whole process seemed so simple, and recommended itself so directly to the feelings and understandings (the common sense) of the spectators, that it was universally admired, and pretty generally adopted. Money was raised by subscription, infant schools were built, teachers chosen, and children collected ; and, under the immediate tuition of Mr Wilderspin himself, many schools were established with the most encouraging prospects of success. But, somehow or other, while many of the schools have flourished, others have become languid : in the latter, the teachers have lacked energy and resources, the children have not been excited and influenced as they were by the founder of the system ; and, in the localities of such schools, an impression has gone abroad that the scheme generally has failed.

On these facts we observe, that neither Mr Wilderspin himself, nor most of those to whom he communicated his system, were in possession of any scientific knowledge of human nature. The scheme emanated from, and was addressed to, our instincts or common sense. But genius, when acting without the guidance of scientific principles, labours under two disadvantages : first, it is liable to shortcomings, errors, and inconsistencies, in its practice ; and, 2dly, it cannot communicate its method to ordinary understandings. Wilderspin, and men similarly constituted, succeeded up to a certain point in infant training ; but when individuals who were deficient in the active temperament, energetic quality of brain, and favourable combination of cerebral organs, which had inspired him, were employed to conduct the schools, and were thrown upon their own mental resources, they proved by no means adequate to the task. It is in such cases that the value of scientific rules becomes apparent. Clear rules, founded on well ascertained natural principles, not only serve to enlarge the sphere of genius, and to save it from numerous errors, but enable it to communicate its methods to average minds, and help these to work up to its suggestions, and to follow closely in its track. If Phrenology had constituted a fundamental portion of universal education at the time when Wilderspin appeared, his instincts would at once have allied themselves with scientific principles ; a knowledge of these principles would have enabled the community at large fully to comprehend the *rationale* of his system ; and his exhibitions would have become embodiments of these principles in practice. By this means the public, and those who were selected as teachers, would equally have comprehended

the condition of the infant mind and body, the objects to be aimed at in training them, and the real relations between the means employed and the ends aimed at. We are entitled, from experience, to infer that, in this and in other instances, men of average mental endowments would have been capable of repeating the processes and reproducing the effects. Archbishop Whately long since remarked, that no person, even the most illiterate, trusts to the dictates of common sense in the execution of any complicated process, when he happens to possess scientific rules for his guidance. The sailor, while he may approve of curing diseases under the guidance of common sense, would scout the idea of navigating a ship by its unaided illumination. It is sheer ignorance of mental science which leads so many otherwise intelligent persons to rely on the dictates of common sense, to the exclusion of scientific principles, in every department in which mind is the subject of administration ; but this department, instead of forming an exception to the general case, is, of all others, that in which, from the subtle nature of the powers to be directed, and the complexity of the phenomena, scientific knowledge is most necessary to success.

If there be truth in these remarks, they are equally applicable to the practical processes by which ordinary schools, lunatic asylums, and prisons, are conducted. Several of these institutions have been brought into an admirable state of efficiency by men of peculiar talents, in some instances aided by Phrenology, and in others relying chiefly on their instinctive sagacity and experience : but we have heard of two great difficulties being experienced in maintaining their high condition ; *first*, that of obtaining servants capable of comprehending the principles on which the presiding mind acts ; and, *secondly*, when that guiding mind is removed by death or other circumstances, that of discovering a successor qualified to carry forward his ideas. We have been told by the master spirits of improved prisons and lunatic asylums, that they find it more troublesome to instruct, manage, and direct, their assistants and servants, than their prisoners and patients : long cherished belief in the efficacy of force, and want of all knowledge and experience of the relation of force and of kindness respectively to the human faculties, render untrained servants absolutely sceptical of the influence of reason and humanity, while prisoners and patients speedily feel their softening and subduing power. We cannot doubt that instruction in Phrenology would remove or greatly lessen these evils. A knowledge of the primitive faculties, their modes of activity, and the effects of their combinations, communicated as elements of education to all classes of society, would enable each of these successful improvers to

place his method on a precise scientific basis which could be communicated to hundreds, giving to average minds the power of executing, and, when necessary, reproducing it, not empirically, but with intelligence, and a clear perception of the relation between means and ends. When Dr Conolly of Hanwell, Dr Browne of Dumfries, and Dr Hodgson of the Liverpool Mechanics' Institution, cease to direct the great establishments over which they preside, the truth of these remarks will be tested. We anticipate that much difficulty will be found in providing successors of equal powers out of the ranks of those who are unskilled in Phrenology ; and it will probably be only after a series of failures to find successors equal to such men, that the advantage will be recognised of teaching Phrenology as the basis of processes by which similar success may be achieved.

If this anticipation should prove to be true, the community will then be made aware what debt of gratitude they owe to the opponents of Phrenology, who have obstructed the study and application of it for half a century, and who have brought the public mind into such a condition that a number of able men who now actually apply it in their several departments with distinguished success, and who perceive the important aid which it has afforded them, are afraid either to teach the connection of their own practice with the science on which it is founded, or even to openly acknowledge its adoption, from sheer dread of the public sentiment which the opponents have created. We have the means of knowing that thoroughly instructed phrenological teachers,—that is to say, persons acquainted with the functions of the brain, and the nervous systems in general, and the practical application of this knowledge to the preservation of health, to moral training, and to intellectual instruction—are wanted, but cannot be found ; and the men who have filled the public seats of learning, during the last thirty years, are best able to tell why such attainments do not exist among those whom they have sent forth into society, as avowedly instructed in all the practical knowledge of the age. Those individuals who actually possess this knowledge have derived it from schools of Phrenology ; but opposed, depressed, and discouraged, as those schools have been, by every influence which could be brought to bear against them, the numbers of their thoroughly instructed pupils are not now equal to the demand. How long will the public mind continue blind to its best interests ? for, while this is the case, its leaders will not acknowledge themselves in error, or use any effectual efforts to supply their deficiencies.

II. CASES AND FACTS.

I *Case of Local Tubercular Deposit upon the Surface of the Brain.* By ROBERT DUNN. Read before the Royal Medical and Chirurgical Society of London, 14th June 1842.*

At a time like the present, when the physiology of the nervous system is engrossing so much of the attention of the medical philosopher, every contribution to its pathology is important. Impressed with this conviction, though without the hope of adding any new fact to the records of experience, I am induced to submit to the notice of the Royal Medical and Chirurgical Society, the following detail of an interesting case of local tubercular deposit on the superficies of the brain, which lately came under my observation. To the experienced members of the Society, the case may offer little on the score of novelty, however much to myself; and it is, therefore, not without hesitation that I presume to submit it to their notice.

The patient was a little boy, two years old, a fine intelligent child. His mother, who is a very sensible woman, informed me he had been a healthy child from the time of his birth; he had suffered little during dentition; at eleven months old he had twelve teeth, and could then walk alone; altogether, she considered him a forward child, very active, and of quick perceptions. There was one circumstance, however, with which both his father and his mother had been particularly struck, and that was a change in the disposition of the child, which they had observed to have been gradually taking place for more than four months previous to his last illness. From being a happy, placid child, 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 *obstinate and self-willed boy*. So marked, indeed, was this change of disposition in the child, that it had become a subject of serious consideration with his parents, whether it was to be attributed to some latent disease, under which he might be labouring, or to mere infirmity of temper. But

* This case was published in the 25th volume of the Society's Transactions. Mr Dunn's remarks on its phrenological bearing, although read at the meeting, were not printed by the Society; but he has kindly furnished us with them. How the true interest of medical science can be promoted by the suppression of such observations is beyond our comprehension.—EDITOR.

as the child continued to eat, drink, and sleep well, and did not appear to be suffering from any bodily complaint which they could detect, they did not take any medical opinion, but contented themselves with endeavouring to correct, by moral discipline and management, what they were inclined to consider rather as an infirmity of the mind than of the body.

On the 7th of October I was suddenly called to attend him, and he died in about six weeks, on the 15th of November. He had awoke, as usual, between six and seven o'clock in the morning, and whilst amusing himself with his sister in bed, and in the act of attempting to turn over, his left hand began suddenly to jerk or twitch convulsively, but the convulsive twitching did not extend beyond the wrist. Alarmed at the sight of this, his mother immediately sent for me. Beyond the continued convulsive jerking of the hand, the child did not appear to be in any other way affected. I found him laughing and talking, perfectly sensible, and, to all appearance, in every other respect quite well. There was no preternatural heat of skin, no acceleration of pulse, nor any indication of general disturbance. On the application of hot water and mustard to the hands and feet, in about twenty minutes the jerking subsided, and for the remainder of the day the child appeared to be well and in good spirits. I gave him a brisk mercurial purgative, a grain of calomel every four hours, and applied four leeches behind the right ear. At my second visit, in the course of the day, I was told by his mother that the child had fallen down stairs about a fortnight before, but the circumstance had been studiously concealed from her by the nurse, and she was unable to say whether he had fallen upon his head or not. There was no swelling upon the scalp, nor any contused appearance which I could perceive. She had observed, however, that the child had been more fretful and self-willed from the time of the fall. The day previous to his attack, he had also let rather a heavy box fall upon his left foot, and had cried almost incessantly for three hours afterwards. The nail of the great toe was quite black, but there was no swelling nor tenderness to the touch.

At nine o'clock on the following morning the jerking returned, and extended to the elbow-joint, but subsided in the course of half-an-hour, on the application of the mustard and water as before. On the 9th he had a slight return at seven o'clock, but so slight that I was not sent for. From the periodic nature of the attack, the local character of the symptoms, the absence of fever and constitutional disturbance, I was induced to suspend the calomel, and commenced giving

six grains of the sesquicarbonate of iron every four hours. The next day passed without any return of the jerking, but I observed an imperfect paralysis of the hand and arm. The child too gave evidence of constitutional disturbance. He was irritable and fretful, with a quick pulse, hot skin, dry tongue, great thirst, and other symptoms of general pyrexia. He complained, too, of pain about the head, and frequently applied his hand to the right temple. I withdrew the iron, gave him a sharp purgative, saline medicines, applied an evaporating lotion to the head, and resumed the calomel. On the 11th, at four o'clock in the morning, he had an attack of convulsive jerking, and another about three o'clock in the afternoon, a very severe one, which was not confined to the hand and arm, but involved the whole of the left side and lower extremity in convulsive agitation, with twitchings of the eye and angle of the mouth. The attack lasted two hours, leeches were applied to the right temple, a blister to the nape of the neck, and the other measures continued. During the next two days, the 12th and 13th, he had two fits each day, of a still more severe character. Towards the termination of the fits, and they each lasted two hours, he cried and even screamed violently, but throughout their continuance he was sensible, and could at times be soothed by kind attentions from his parents. The fits were followed by profound sleep for several hours, and the side was left partially paralysed. At one o'clock in the morning of the 14th, I was called up in consequence of a more severe attack than any he had previously had, and which lasted for nearly three hours. The convulsive agitation affecting the whole of the left side, from hand to foot, was violent. At times he screamed out, and then again was quiet; during the whole paroxysm he knew every one around him, but eagerly clung to his father, as if in dread. The head was shaved, and ice applied. About noon on the same day, I had the advantage of a consultation with my friend Dr Todd, of King's College, just as another fit had subsided, which had been attended with this peculiarity, that the convulsive motion, contrary to its former course, had begun first in the foot, and from thence had gradually extended up the side to the arm and hand, leaving the leg paralysed and helpless. I had the benefit of Dr Todd's assistance in the future treatment of the case. He agreed in the opinion which I had formed, that the child was suffering from irritation of the membranes, or, more properly to speak, inflammation of the surface, of the brain; and further offered it as his conviction, that the superficial inflammation, which was inducing the convulsions, was excited by the pre-

sence of tubercle, an opinion which the *post-mortem* inspection fully verified. Three grains of true James' powder were added to each dose of the calomel, and given every four hours as before ; half a drachm of strong mercurial ointment was ordered to be put into each arm-pit night and morning, and the ice to be steadily applied. About half-an-hour after Dr Todd was gone, the child had another fit, the most severe of all. The attack began as usual, first in the hand, and gradually extended upwards. The leg for some time remained perfectly still, extended and rigid, whilst the upper parts of the body on the same side were in a state of violent agitation. At length it partook of the same convulsive motion, and the whole of the left half of the body was dreadfully convulsed. During the paroxysm there were occasionally slight remissions in the violence of the agitation, attended with alternation of screaming and silence, with a perfect knowledge of every one around him. From this time to the 22d, an interval of a week, he had no return of the fits. Occasional jerkings of the hand and foot were observed, and at those times, and more especially at their beginning, the child appeared to be in great dread, and clung eagerly to his parents. The paralysis was not persistent, but he was dull and heavy, sleeping many hours at a time, yet perfectly sensible when awake ; very anxious to take food, and most determined to have whatever he took a fancy for. He had a quick but weak and irritable pulse, with a dry, hot skin, and great thirst. The calomel and James' powder and mercurial ointment had been regularly persisted in, but without any appearance of salivation. On the 22d he was seized with a kind of cramp or spasm, now in the hand, then in the foot, at other times in the calf of the leg, muscles of the thigh or side, and from which, during its continuance, he seemed to suffer dreadfully. The violence of the pain, as in ordinary attacks of cramp, which it most closely resembled, was in some degree relieved by active friction. He was afflicted in this way for three or four days, when these spasms subsided, and left him with decided symptoms of effusion. The pupils, however, were not permanently dilated ; they would be so for hours together, and then become contracted. The heat of the scalp, which had been great from the beginning of the constitutional irritation, was now not above the natural standard. He was dull and heavy, in a state almost approaching to coma, taking little if any food, and often sick. For some time he continued in this state, and appeared gradually sinking, when he was again seized with screaming fits, and afterwards with convulsive motions in the right arm and leg. The convulsions began

in the arm and leg with a jerking motion, very much in the same way that he was first affected, when the whole side of the body afterwards became agitated.

Sometimes the convulsive action extended to the left side. The arms and legs on both sides would be drawn up, and become rigid and convulsive, the head at the same time drawn backwards. He had attacks of this kind, with slight intermissions, throughout the day before he died, screaming violently at intervals. The head was hot, face flushed, pulse hurried, pupils dilated, eyes squinting and turned inwards, insensible to light, eyelids constantly open, and only at times recognising the persons about him. On the subsidence of one of these attacks, he gradually sunk, at a quarter past four o'clock, on the morning of the 15th of November.

I was assisted in the *post-mortem* examination of the brain by Dr Todd and Mr Bowman, of King's College, and I am indebted to the kindness of the former distinguished physiologist for the following account of the morbid appearances.

The scalp was pale and bloodless, like the rest of the body, which was much emaciated. The dura mater healthy. The vessels on the superficies of the brain were tinged with dark blood, but there was no subarachnoid effusion. The arachnoid cavity was natural. On the surface of the right hemisphere of the brain, under both the arachnoid and pia mater, there was a deposit of tubercular matter, in patches of irregular shape and size, but the whole occupying a surface of about two inches square. The deposit was most abundant on the surface of the convolutions; it nevertheless descended into the sulci between them, a circumstance which proved its connection with the deep surface of the pia mater. The cortical substance of the brain in contact with the tubercular matter, was reddened and greatly softened; and, on microscopic examination, evinced a nearly total destruction of the tubules in it; a great enlargement of the proper globules of the gray matter, and of the pigment granules which adhere to them. The softening extended a slight way into the subjacent white matter. On the edge of the left hemisphere, corresponding to the diseased patch of the right, a slight tubercular deposit had taken place in a similar manner, producing a red softening of the gray matter in contact, but not occupying more than half-an-inch square in surface. The ventricles contained more water than natural—about double—and did not collapse when laid open. The cerebral substance throughout, excepting at the diseased part, was firmer than usual at the patient's age. This firmness was no doubt

owing to the compression of the fluid, which probably at an earlier period of the disease was more abundant.

I have now submitted to the Society a plain narrative of the case, and it is one in which I have been personally much interested. To attempt a critical analysis of the symptoms in connection with the morbid appearances, would involve me in a labyrinth of conflicting opinions ; but I may be permitted to make a few cursory remarks. And first, it seems reasonable to infer that the fall which the child had, if not the blow upon the toe, had operated as an exciting cause in setting up diseased action about the tubercular deposit, and that the local affection, the simple twitching of the hand and jerking of the arm, was the consequence of such action. Admitting this, the extension of the irritation of the membranes thus induced would lead to the constitutional disturbance which followed, and to the increase of the convulsive agitation.

It is, I believe, generally admitted that irritation of the membranes and cineritious substance of the brain is attended with convulsions, without decided or persistent paralysis, and that it requires the medullary matter to be involved to render the paralysis permanent. My own observation, so far as I have had an opportunity of investigating this interesting subject, accords with this opinion. In the present case, the paralysis was not persistent until after the violent attacks of cramp, and from this time may probably be dated the implication of the medullary substance in the inflammatory process. Admitting the justness of the view, that red softening of the brain is the result of chronic inflammation of its substance, persistent paralysis was not to be expected until the inflammatory action had involved the medullary substance.

On comparing the two hemispheres, the diseased portions and parts adjacent, the left presented evidences of more recent inflammation than the right ; and this was to be expected from the history of the case.

* I cannot close this communication without briefly adverting to the phrenological bearing of the case. I have mentioned in the history, that the parents of the child (and they know nothing of Phrenology, not even the meaning of the term) had been forcibly struck with a *change* in the disposition of the child, which they had observed, for some time previous to

* The following and concluding portion of this paper was read at the meeting of the Royal Medico-Chirurgical Society, but not printed in the volume of the Society's Transactions, Phrenology being, in the opinion of the Council, a subject still *sub judice*.—R. D.

his last illness, to have been gradually taking place. From being a happy, placid, and docile boy, he had become more and more petulant, self-willed, and obstinate. Now it is a circumstance worthy of observation, that, on the *post-mortem* inspection of the brain, the tubercular deposit was found to be situated on that part of each of the hemispheres where Gall and Spurzheim have located the organ 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*. I have no wish to attach any undue importance to this fact; but if the *gray substance* of the brain be really the seat of its *functional power*, it is difficult to conceive how the *gray matter* situated beneath the *tubercular deposit* could maintain the healthy exercise of its functional power. Indeed, it seems to follow, as a necessary consequence, that any *disturbance* of the integrity of this substance must produce a corresponding *derangement* in the functional power of the part. In the present instance, 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. Now, *obstinacy* is an abuse of *Firmness*; and if we associate the *change* of disposition which had taken place in the child with the *structural disturbance* induced by the *tubercular deposit*, the case may be fairly adduced in support of the *hypothesis* of Gall and Spurzheim, and of the *locality* which they have assigned as the site of their organ of *Firmness*. But I shall not dwell upon a subject which may be considered foreign to the objects of this Society. Still the psychological phenomena of disease present a wide and an interesting field for inquiry, and I am quite convinced that it is to the medical philosopher and the physiologist we are to look for the most valuable contributions to the Science of Mind. The metaphysician can make little progress independently of the physiologist: to be reminded of what the latter have done, we have only to recall the names of Locke, Hartley, Brown, &c. The expressive language of Dugald Stewart, in reference to Locke, in his admirable dissertation on the progress of philosophy, admits of general application.

"No science," says he, "could have been chosen, more happily calculated than *Medicine* to prepare such a mind as that of Locke for the prosecution of those speculations which have immortalized his name; the complicated, and fugitive, and often equivocal, phenomena of disease requiring in the observer a far greater portion of discriminating sagacity than those of Physics, strictly so called."

To conclude : "The praise which Sydenham, the greatest authority of his time, bestows on the medical skill of Locke, affords a brilliant proof of the high estimation which his acquirements in the science of medicine, his penetrating judgment, as well as his many private virtues, procured from all who knew him.

"In the dedication prefixed to Sydenham's *Observations on the History and Cure of Acute Diseases*, published in 1676, he boasts of the approbation bestowed upon his method, by Mr John Locke, who (to borrow Sydenham's own words) had 'examined it to the bottom; and who, if we consider his genius and penetrating and exact judgment, has scarce any superior, and few equals, now living.'

"*Nostri præterea quam huic meæ methodo suffragantem habeam, qui eam intimeus per omnia perspexerat utrique nostrum conjunctissimum dominum Joannem Locke; quo quidem viro, sive ingenio judicioque acri et subacto, sive etiam antiquis, hoc est, optimis moribus, vix superiorem quenquam inter eos qui nunc sunt homines repertum iri confido, paucissimos certe pares.*"—*Vide Lord King's Life of Locke.*

[Since the foregoing paper was read, I have had my attention directed to an interesting case, recorded by Mr George Combe, in his *Notes on America*, vol. i. p. 335. It is the case of a young man of the name of Richardson, from whose head Dr George M'Clellan, Professor of Surgery in the Jefferson College, Philadelphia, removed two tumours,—one external to the skull, the other internal. The latter, about the size and form of half of a hen's egg cut longitudinally, was situated between the skull and the falx, and had carried the longitudinal canal down uninjured below its lower surface. Both tumours had been formed in consequence of a blow received from a stone, so slight at first as scarcely to attract attention, and their growth had extended over a period of three years.

Dr M'Clellan removed the skull to the extent of several square inches, and was at the time impressed with the conviction that the brain in this region had disappeared; but to his astonishment, on the second or third dressing, he found that the convolutions had risen up, and that in point of fact, they had never been destroyed, but only displaced by the pressure of the internal tumour, and nature had accommodated herself to the change. The organs affected by the tumour were Self-Esteem, and Love of Approbation. Mr Combe had the good fortune to see the young man a few days after the operation, and has given the following interesting account of the inter-

view. "When I saw the patient he was pale, and much reduced in flesh, but placid, and quite intelligent. He rose from bed, came into an adjoining room, and sat before the fire. On the dressings being removed, I saw the surface of the organs of Self-Esteem and Love of Approbation exposed. They were large, particularly Self-Esteem. They rose and fell with the pulsation of the arteries. They were entire, and on a level with the other portions of the brain. I conversed with him, and received from himself the information concerning the cause and growth of the tumours. He said he knew that it was a matter of life and death, and resolved to submit to the operation, and to endure it manfully. His organs of Firmness seemed to be large, but they were not involved in the injury, or only partially so, at the posterior edge." Mr Combe adds: "The patient recovered, and after his convalescence he mentioned facts, that shewed that his sentiments of Self-Esteem and Love of Approbation had not remained unaffected during the progress of the disease. He was a player and ventriloquist, and performed in the western cities. He stated, that before receiving the blow, he was an entire stranger to diffidence. For the first three months after the accident, he felt no change in his mental condition, and was not aware that there was an affection of his head. At the end of that time, the external tumour began to attract his attention, and he felt visitations of diffidence, which he had never before experienced. He was convinced that his powers of acting were unimpaired, yet he could not give effect to this conviction; for he felt as if he should fail. In course of time, his self-confidence diminished so much, that he could no longer appear on the stage, yet his intellectual faculties were clear and active."

Between this, and my own case of tubercular deposit, the following differences may be noticed. In the latter, there was inflammatory action and structural change, both in the grey and white matter of the brain, with convulsive twitchings and subsequent paralysis; while, in the former, there was no structural disease of the white and grey substance, and no influence on the motory system. Again, in the latter, the irritation and inflammatory action were accompanied with an increase of functional activity; but, in the other, the pressure of the tumour produced depression of the functions. It is, I think, much to be regretted, that the *psychological phenomena* of disease should have been so much overlooked and neglected, and, especially, by those eminent physicians to whom we are so much indebted for their investigations into the pathology of the brain. The attempt 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, is clearly one which comes legitimately within the province of the medical observer; and, however it may be beset with almost insuperable difficulties, it is nevertheless one of vast interest and great importance. To this end, it is a duty incumbent upon the medical practitioner,—having first made 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—to avail himself of every opportunity of bringing phrenological doctrines to the test of experience; and, if I am not greatly mistaken, it is to *post-mortem* examinations of the brain, and to pathological investigations, more perhaps 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 doctrines of Phrenology. Indeed, in the case of tubercular deposit which I have recorded, the phrenological evidence or symptoms—the observed change in the disposition of the child—was the *only* indication of the *local* seat of the disease.—R. D.]

II. *The Smallest Head*—"General Tom Thumb."

By Mr JAMES STRATON, Aberdeen.

Having been favoured (Feb. 7. 1846) with a deliberate examination of this "man in miniature," Master Charles S. Stratton, I found him to be a great curiosity, on account of the size of his head. His age was stated to be 14 years, and I have much reason to believe the statement to be correct.

The measurements, taken in the manner described in my *Contributions to the Mathematics of Phrenology*; are as follows:—

Breadth, 5 to 5 = 4.2	Length, 3 to 30 = 5.8	Height, 6 to 16 = 4.
7 to 7 = 4.55		1 to 3 = 2.3
8 to 8 = 4.55		22 to 13 = 1.7
9 to 9 = 3.5		3)8.
4)16.8		Average, 2.7 nearly.
Average, 4.2		

$$4.2 \times 5.8 \times 2.7 = 65.772, \text{ say } 66 \text{ cubic inches, absolute size.}$$

Judging from external appearances, the bone and integuments are slightly thinner than in the average of male heads; I therefore estimate these at 26, the average being 30, cubic inches. This deducted from the entire size of the head, leaves 40 cubic inches as that of the brain, being the smallest recorded size of human brain capable of sane and somewhat vigorous mental manifestation; for such does "General Tom Thumb" exhibit.

The results of my previous researches for the smallest size of head, at or above seven years of age, the period at which, according to the erroneous statements of Tiedemann, Hamilton, the Wenzels, and others, the human brain attains its full size, are stated in the *Contributions* as follows: "After ten years' practice in observation, during which I have measured more than 3000 heads, and formed an eye-estimate of more than ten times that number, measuring every head in any way remarkable to which I could obtain access, I have to report the following as unique in my experience, in the respective classes to which they belong. ——— L———, Esq., a gentleman of talents and learning, size of head 111 cubic inches; C. A., aged 60, a village orator, politician, wit, poet, and tinker, a little above 100; Robert Duncan, aged 29, found employed in a large manufactory, 92; and Robert Gibson, a pauper found in the public soup-kitchen, size of head 82 inches."

As regards the balance of the different parts of the head, "General Tom Thumb" is a very favourable specimen in most particulars. The anterior and coronal regions are slightly below an equal balance, the posterior is slightly above. Some of the individual organs present slight deviations from the equal balance. In the anterior region, Individuality, Form, Size, Weight, Locality, and Eventuality, especially the last, are the largest organs.

Cautiousness is conspicuous in the lateral aspect. The cerebellum seems to be very small, as defective indeed as I have ever seen it in an infant of six months. In this particular, the "General" is a very remarkable case against the doctrine held by some, that the cerebellum is connected with the regulation of muscular action; for, if there be any one thing more than another, for which he can be said to be remarkable, apart from his diminutive size and fine proportions, it is his control over muscular action. In his representations of the Grecian Statues, Napoleon, Frederick the Great, the English Gentleman, the Highland Chieftain, &c., the rapidity with which he can change his posture, and the accuracy with which he can imitate the actions and attitudes,—so far as mere muscular action is concerned,—of the objects represented, are regarded as very remarkable.

His intellectual acquirements are said to be *very* limited as yet. It will be extremely important to note his progress in this particular. It is to be hoped that phrenologists who happen to meet with the "General" will endeavour to inform themselves as *accurately* as possible regarding his progress and proficiency in intellectual pursuits, and report from time to time.

His muscular system has attained a degree of firmness, strength, and maturity, quite equal to, or rather beyond, the average of his age. It is legitimate to presume that the brain is matured in a corresponding degree. His health is said to be excellent.

"General Tom Thumb" is, then, I repeat, a case of unusual interest to the phrenological world. He affords the extremely rare opportunity of solving one question in the great problem: What amount of manifestation is a well-balanced and healthy head of a given size capable of? The "General" is certainly very near, if he does not actually touch, the extreme lowest point on the scale of size. What, then, is a head of 66 or a brain of 40 cubic inches capable of attaining in his circumstances?

III. *Remarks on Homicidal Impulse ; with a Case.* By SAMUEL B. WOODWARD, M.D., Superintendent of the State Lunatic Hospital, Worcester, Massachusetts. (From the American Journal of Insanity, No. IV.)

The subject of *homicidal impulse* disconnected with other evidence of insanity is so little understood—the cases that shew it are so few—that it is hardly possible to convince mankind of its reality.

For this reason, all the facts connected with such cases should not only be carefully recorded and preserved, but be extensively published to the world, and be attentively considered by the medical man, the advocate, the judge, and the juryman; whose attention must be given to the subject occasionally, however painful the duty, and sometimes under circumstances not the most favourable for unbiassed judgment and correct decision.

It is at all times unpleasant to be called upon to consider and settle the question of the responsibility or irresponsibility of those who commit high crimes, under circumstances that fairly admit of doubt; to decide whether the law has been violated for wicked purposes, or by an individual labouring under an impulse which, at the time, and under the circumstances, he could not control; especially when so much incredulity is felt of the existence of such an impulse, by many intelligent members of society. It cannot be denied that there is a suspicion abroad in the community, that these new views of medical jurisprudence tend to prostrate the ends of justice, by disturbing the settled principles of criminal law. Not only the

interest of the accused, but the safety of the whole community, demands that the subject be well understood, and be fully investigated in each case.

If it be necessary, before the individual accused can be convicted of homicide, that the tribunal before which he is arraigned decide that there be "malice prepense," then surely the question must be considered, whether he be of sound mind; for there can be no malice such as the law contemplates, if the individual be irresponsible in consequence of any unsoundness of mind. That active impulses, quite uncontrollable, and entirely disconnected with any existing delusion, affect the minds of men under some circumstances, cannot be doubted. Those who look at insanity in the institutions for the insane, and who carefully study the records of experience of those who have written on mental diseases, cannot fail to recognize such cases.

Of such impulses none is more frequently the subject of record, than the *homicidal impulse*. Of this, the case hereafter to be related is one of the most remarkable that have come to my knowledge.

Had this individual committed homicide in the winter of 1843-4, there would have been no evidence whatever that he was not of *sound mind*; both rational and responsible. He was indeed slightly depressed, but he had recently lost a dear and affectionate brother, who had been his companion and play-fellow from infancy upwards.

No one suspected that a dreadful impulse was at that time urging him to destroy his best friends, and that, with all his might, he was struggling to overcome it.

Even the more recent escape from still greater danger—danger which it is fearful to contemplate,—seems almost miraculous; as no evidence had yet been afforded of the influences which were urging him to take the life of one of his best friends, his own relative, and daily associate, till he disclosed the fact to me, so fully and unreservedly.

Case.—On the 8th of January 1845, I was consulted by G. E., twenty-five years of age, in apparent good health, of good personal appearance, good habits, manners, and character.

Before he called on me himself, his father stated to me, that he had for a few days been unhappy, from an apprehension that he should injure some of the family; that this impression preyed upon his mind, depressed his spirits, and rendered him unfit for labour. I did not learn from the father that he was apprehensive of any danger from this condition of the son, or that he was informed of the extent of the evil that preyed upon his mind; he only requested my advice for him as a physician.

The young man soon called, and in a private interview gave me the following history of his own case.

He was quite well and cheerful till September 1843, when he lost the brother above alluded to, which made him sober and pensive, but it was not followed immediately by any peculiar feelings.

In the course of the winter he became affected with this extraordinary desire to *kill*. Frequently in the course of the day this feeling was excited, by the presence of his own family friends, to such a degree as to make him shudder at their danger, and his own strange and unnatural propensity. He had no antipathy toward any of them; on the contrary, he had all the affection of a son and a brother. Although this desire to kill haunted him perpetually for some weeks, he cautiously concealed it from his friends, and that so successfully, that they had no mistrust of his feelings, or apprehension of danger.

As the warm weather approached, and he began to labour out of doors, the propensity gradually subsided, and left him entirely before summer.

Early in the winter of 1844-5, the young man formed a partnership with a brother-in-law, to carry on the shoe-business in a neighbouring town, and they commenced operations about two weeks before he consulted me, on the 8th of January.

Almost immediately after commencing this labour in the shop, with his brother, this impulse was re-excited, and he felt an irresistible desire to KILL HIM. So strongly was this feeling excited many times a-day, that he felt compelled to leave his work, and quit the room frequently, believing, as he now does, that he should have killed him, if he had not thus abruptly torn himself away.

After struggling many days with this dreadful propensity, he left his work without giving notice to his brother, and returned to his father's house, where he now remains the victim of the same wretched feelings, and he insists that he shall kill somebody, if not speedily cured. I prescribed some remedies, and a course of diet and regimen for him, and recommended him to call on me again, if he did not soon get better. Not having heard from him since, I hope that the dreadful impulse has again passed from his mind.

WORCESTER, *March 4. 1845.*

IV. *Dr Dalton's Colour-Blindness and its Cause.*

In vol. xviii., pp. 53, 193, we inserted several extracts from contemporary journals respecting Dr Dalton's colour-blindness and its cause. The eyes, it will be remembered, exhibited on dissection no unusual appearance; and Sir David Brewster concurred with Mr Ransome, the medical attendant of the deceased, in concluding that "the imperfection arose from some deficient sensorial power, rather than from any peculiarity in the eye itself." We quoted from the *Manchester Guardian* the statement that, on dissecting the brain, Mr Ransome found no evidence of disease except on its left side, where he discovered, in the medullary part, near the outer edge, and just above the top of the ear, a very small cyst (or bag containing morbid matter), not larger than a pea. We added that Mr W. Bally of Manchester had made a cast of the orbital plates; on inspecting which, we had ascertained the correctness of the statement in the newspapers, that it presented a high ridge indenting the brain at the situation of each organ of Colour. In Mr Stanley's address to the Royal Medical and Chirurgical Society, delivered on 1st March 1845, and wherein was published Mr Ransome's account of the *post-mortem* examination, *no particulars were given concerning the brain*; but we are happy to be now enabled to lay before our readers the following extract from a letter written by Mr Ransome on 20th March 1845, to his friend Mr Philip Holland, surgeon in Manchester: "I have very little to add to the account of Dr Dalton's eyes which I sent to Mr Stanley. There was no disease or change of structure in the anterior lobes of the brain, but a deficiency in size or development of one of the small convolutions resting on the orbital plate. Mr Bally took a cast, of which I have no doubt you could procure a copy." In another letter, written shortly before to Mr Stanley, Mr Ransome says: "I ought in fairness to state (though no phrenologist) that there was a marked deficiency in the convolutions of the brain over the orbital plates, which are assigned to the organ of Colour. *Valeat quantum*, I give the fact."

We are informed that the smallness of the organ of Colour is remarkable in the bust of Dr Dalton, modelled by Cardwell; and Mr Bally states, that its real size is still less than it appears, in consequence of the thickness of the bone behind the frontal ridge.

We look forward with great interest to the communication

which Sir David Brewster, we are happy to find, has promised to the Literary and Philosophical Society of Manchester, on the subject of colour-blindness, and Dr Dalton's case.

III. NOTICES OF BOOKS.

I. *Zeitschrift für Phrenologie*, No. VIII. Heidelberg: Karl Groos. 1844.

The German Phrenological Journal, No. VIII. December 1844.
Edited by GUSTAV VON STRUVE and EDWARD HIRSCHFELD, M.D.

The first article of this number is the Address delivered at Bremen, by Mr Gustav von Struve, on 21st September 1844, a translation of which forms the first article of our present publication. The same number of the German Journal contains some remarks by the late lamented Dr Hirschfeld, relative to the meeting of natural philosophers and physicians before whom that address was spoken. He mentions that a copy of his *Sketch of Phrenology* was delivered to each member along with his ticket of admission, as it would have been impossible for many of them to make themselves acquainted with the larger works on the science, during the few days of the assembly. The Sketch excited interest in some of the members; but one of them said, that he read no farther than the title-page, because the principles of Phrenology must, in his opinion, necessarily be known to every physician, and Time had already, as he assumed, pronounced its judgment against them. Dr Hirschfeld expresses regret that he was not present when this opinion was uttered, and had not an opportunity of refuting and contradicting it. "The majority, nay, with a very limited exception, the *whole body* of German physicians," says Dr H., "are utterly unacquainted with the principles of Phrenology. This is proved by the ignorant and foolish observations which daily drop from their lips, indicating that the most melancholy and senseless conceptions of the science prevail among them." Dr Hirschfeld found only one physician among the whole of those assembled at the meeting, who had read through and studied Dr Gall's large work. He is, therefore, well warranted in exposing the error of the unprofessional members of the community who pin their faith to the opinions of uninformed medical men. Dr Combe, in his address to the students of Anderson's University, p. 115 of our last Number, adverts to the same prevailing error, and, as a physician, gives his testimony against it, in terms as decided as those used by Dr Hirschfeld.

In the Physiological Section of the meeting, Dr Hirschfeld gave an exposition of the leading physiological principles on which Phrenology is based. After explaining that the grey substance of the nervous system is considered as most intimately connected with the higher mental functions, he discussed the structure and functions of the spinal cord and its various parts, and shewed the analogy between them and the brain. He next explained that the external grey matter of the brain transmits, by means of numerous fibres of white matter passing through the interior of that organ, its influence to the spinal cord, and through it to all parts of the body; while the skin affords place to the external expansion of the nerves of feeling, by means of which, impressions from the external world are transmitted inwards to the spinal marrow, and, subsequently, to the brain.

On the whole, the meeting received the address of Mr Von Struve and the observations of Dr Hirschfeld so favourably, that Dr H. regards the date of the meeting as that which will be recorded hereafter as the epoch of the admission of Phrenology into the circle of sciences in its native land, and as the commencement of a new era in its history.

Another article in the Journal by Dr Hirschfeld is, *Observations on Dr Carus's pamphlet, entitled, "Present condition of Scientific Cranioscopy;"* but as Carus's opinions are correctly appreciated in this country, we consider it unnecessary to translate the refutation of them.

The article which immediately follows Mr Von Struve's address, is "On Speculation in Phrenology," a communication from Parson Schuster in Ettenhausen. The reverend author objects to Phrenology, because it does not enter sufficiently into speculative questions concerning the mind. Mr Von Struve replies in a series of foot-notes to the writer's misapprehensions in fact, and errors in argument. Most of our readers will agree with us in thinking, that if phrenologists are to be blamed, it is for having indulged too much, rather than too little, in speculation.

The next article is a translation of Mr Combe's Letter on the application of Phrenology to the Fine Arts, which appeared in our 79th Number.

Under the head of "Miscellanies," there is an article entitled "Phrenology and Pedantry," which contains some good remarks. "Pedantry, and her twin-sister Common-place, who are much in favour with many of the cultivators of established sciences, naturally take great offence against Phrenology, because it has not been discovered, countenanced, advocated, or adopted, by either of them. Far from this, the two sisters have decidedly turned their backs upon it; and there is no won-

der that they should have done so ; for what is it possible for either Pedantry or Common-place to gain by Phrenology ? On the contrary, it tears from their faces the mask by means of which they endeavour to give themselves the appearance of being learned in science. Phrenology is the determined enemy of Pedantry, because it reveals the knowledge of human nature, and enables us to discriminate accurately between the pedant and the man of science. It is the enemy of Common-place, because it teaches us to distinguish between the man of slender ability, who subsists on other men's thoughts, and the man of powerful genius, who discovers new truths, and is always ready to welcome them. Spiritless Pedantry constantly follows in the wake of popular opinion, but without ever being able to overtake it. Love of Approbation and Self-Esteem constitute the weak bonds by which her feeble understanding is attached to the interests of science ; while a high moral power inspires the man of genius, and enables him imperturbably to maintain his ground against unfounded reproach, and to advance before his age in the discovery of truth.

"Pedantry, limping in the direction of the spirit of the age, but always behind it, attacks Phrenology 'critically.' The critic who takes Phrenology for his subject, conceives that he has destroyed it when he has informed his readers that *he* has not seen the facts which Gall pretends to have observed. He never reflects that, as we must look with a microscopic eye when we make microscopic investigations, so we must look with a phrenological eye when we study phrenological facts and phenomena. A cultivated understanding and practical tact are necessarily implied in a capacity to study Phrenology with success ; qualities in which the pedant is altogether deficient. The pedants of our day continue to strain at gnats and swallow camels."

Under the same head, there is an account by Mr Caspar Schlatter of a brother of his who was an idiot. "I had an elder brother," says he, "who even in his youth was melancholy, and, in his subsequent years, became completely insane. He was born in 1784, and at a very early age displayed much judgment, talent, and dexterity, and many good emotional qualities. The following organs were more or less strongly developed in his head : Comparison, Eventuality, Individuality, Form, Colour, Constructiveness, Language, Ideality, Imitation, Benevolence, Firmness, Conscientiousness, Cautiousness, Secretiveness, Destructiveness, Combativeness, Self-Esteem, Adhesiveness, and Philoprogenitiveness. He had a marked head, and all the above-indicated faculties were manifested vigorously in his life and actions. He had a passionate love of

reading, especially in the departments of history and belles lettres; but, unfortunately, in spite of the watchfulness and warnings of a tender and Christian mother, his choice fell upon many books which over-excited his imagination and lower feelings, and upset his understanding. These he read in secret, lest they should be taken from him. He became a doubter in regard to God and everything holy. He evaded confirmation, and never partook of the holy sacrament; and at last, in spite of the most kind and earnest efforts of his mother, he sank into such deep despondency, that he repeatedly made attempts upon his own miserable life, which, however, through God's blessing, were frustrated on every occasion. He had been placed in a mercantile counting-house, and in 1807, shortly after the death of his father, who died bankrupt, traces of decided insanity shewed themselves with increasing strength and frequency, and by-and-by so completely prevailed, that his moments of self-command became fewer and fewer, and at last he fell into continuous and frequently furious mania. He was treated for some time in his mother's house, but on several occasions it became necessary to send him to a lunatic asylum, from which, however, he was withdrawn with safety before his death. He died suddenly from the bursting of a bloodvessel in 1828. It was interesting to observe how his skull decreased in size during the years of his insanity, particularly in the forehead, and in the coronal region. He had, from birth, an organic defect also in the chest. His medical attendants examined this part of the body, but gave themselves no trouble to ascertain the condition of the skull and brain."

There is also a paper, by the same writer, "On the Relation between the Intensity of Action and Extension in Size of the different Cerebral Organs." "The relation," says Mr Schlatter, "between extension in size and intensity in function, is extremely different in the different organs of the brain, and has never been, to my knowledge, treated of by phrenological authors. The organs of Amativeness, Philoprogenitiveness, Destructiveness, and Cautiousness, for example, are very large in every individual in proportion to the size of the knowing organs, even when these are developed to an uncommon extent. Nevertheless, the latter manifest themselves, in comparison with the former, with equal, if not greater, force and intensity. If a musician has the organs of Cautiousness very largely developed, and if he has also the organs of Tune developed, say to the extent of only one-third or one-fourth of the size of those of Cautiousness, Tune will still be manifested with a degree of intensity as deep and passionate as that which cha-

racterises the manifestations of the former. If we imagine an intellectual organ—say that of Tune—to be equal in size to the organ of a strongly-developed feeling or propensity, and to continue endowed with the peculiar intensity which belongs to the intellectual organs, what overwhelming energy and passionate manifestations of mental power would not such an intellectual organ produce! What a monstrously extravagant mad-cap would a man be who had the organ of Wit as large absolutely as that of Cautiousness, if its intensity were proportionate to its size! In the progress of Phrenology, the relations between intensity and size in the organs of the frontal lobe, and between intensity and size in the organs of the middle and posterior lobes of the brain, and in the cerebellum, probably will be more exactly discovered. Perhaps there may be found a difference of relative intensity in each of the three lobes, and in the cerebellum; proportions, for example, such as among the numbers 1, 2, 3, 4, or as among 1, 2, 4, 8. *

* * If each fibre of a nerve, and each fibre of a cerebral organ, has its peculiar function, it may be that every conception has its own fibre, or its own bundle of fibres, in the organ which forms it. If so, the fibres of an organ in the frontal lobe (which has a great multitude of functions to perform), must be finer and more numerous than those of an organ in the posterior lobe or the cerebellum. How few, for instance, are the differences between the feelings produced by Amativeness, or by Philoprogenitiveness, or by Adhesiveness, compared with those produced by Tune, by Colouring, by Language, by Form, or by Individuality! What a legion of thoughts of different kinds cross each other in one of the reflecting organs—which organs, all combined, do not occupy a greater space than the organ of Philoprogenitiveness alone. I wish that the phrenologists would make this the subject of their consideration, inquiry, and reflection."

The foregoing is a free and abridged translation of Mr Schlatter's speculation (for it is only a hypothesis). We have found some difficulty in translating it, in consequence of terms being used by him which have no exact equivalents in the English language. But it seems to contain an interesting idea which is well worthy of consideration.

The remaining articles in this section consist of translations from our own journal.

- II. *The Science of Phrenology, as applicable to Education, Friendship, Love, Courtship, and Matrimony.* By J. C. LYONS. London: Aylott and Jones. 1846. 8vo, pp. 82.

Save us from such friends as Mr J. C. Lyons! His volume has a taking title, is neatly printed and boarded, and is dedicated "to the Ladies" with "the sincere and respectful regards of the Author;" moreover, we see no reason to doubt that he thought himself usefully employed in writing and publishing it. But a more confused, ill-written, inaccurate, and illogical treatise we have seldom had the task of perusing. The following sentences will exemplify the beauties of style and thought with which it abounds. "It has often been asked, How can Phrenology be true when there is so vast a multiplicity of thoughts, feelings, and desires, alike differing in different individuals? Some exclaim, 'What absurdity to attempt to account for such hidden mysteries!' As well might modern Chemistry deprecate the propounders of the existence of the king of metals, and the elixir of life, that is, alchymists, in the vain discovery for which so many useful discoveries were brought to light." (P. 2.) "The brain is the medium by which the mind makes known its secrets to outward objects." (P. 4.) "What relative position Phrenology bears to any other science, cannot be discussed in a small compass; besides, it requires theoretical argument to be deduced, which is not the author's object in treating upon." (P. 5.) "The more you reflect upon the simplicity of truth, the closer will you find science connected with it; separate them, and science is a nothingless void." (P. 12.) "You may accept it as an unerring principle in Phrenology, that persons with a larger amount of brain before the ear, as well as the depth from the crown to the ear, are morally religious." (P. 44.) "In the instance of the idiot is perceived a relative formation of features with the brain; and in such a case education would in vain endeavour to establish a seat upon the reasoning powers where none existed." (P. 56.) "Emulation is the only exciting power of diverting the mind, under the usual system of education." (P. 58.)—In his "Table of Phrenological Organs" he states "Vindication, stubbornness, obstinacy," as the "fundamental action" of Combative-ness; "Sympathy, kindness, dread of evil," as that of Benevolence; "Intellectual, imagination, poetry," as that of Ideality; and "To compare one with another, to find fault," as that of Comparison. The organ of Secretiveness is said to

be "just before Destructiveness;" and the organ of Adhesiveness to give "stability of character in all our actions." (Pp. 14, 15, 46.) Speaking of Burke the accomplice of Hare, he says, "Such a being as this, Phrenology terms a murderer, and everything that is infamous; which is the exact representation of that cold-blooded villain." (P. 24.) Here Mr Lyons misrepresents both the head and the character of Burke, neither of which was of the worst class (see our fifth volume, p. 549); nor is it true that Phrenology terms either Burke or any other man a murderer. Again, according to Mr Lyons, the famous Dr Dodd, a cast of whose head is familiarly employed to exemplify an extreme deficiency of Conscientiousness, possessed, on the contrary, "an organisation producing a man almost a fanatic in morality and religion. . . . That he committed the act of forgery is true, for which he died; but it must have been the superior influence of *circumstances* in a *moment* of temptation, that impelled him to perpetrate an offence contrary to the dictates of his conscience"!! (P. 44.) On page 50 he announces, with the obscurity as well as the gravity of an oracle, that throughout the writings of Locke, Pope, and Bacon, "you will find the language of Phrenology in beautiful accordance with the workings of the mind." Dr Watts also, it seems, "advocated the principles of Phrenology" (p. 60); the ground of which strange assertion is a passage in which the Doctor tells that "his tutor never imposed any thing upon him with a magisterial air; but always, by advice, recommended him to such studies, and such methods of improvement, as his experience had long proved." The well-known maxim, "Where ignorance is bliss, 'tis folly to be wise," is ascribed by Mr Lyons to Pope instead of Gray; and on the strength of this, and of equally pertinent quotations from Locke and Bacon, he affirms that "the science is well supported by the language of such men as Burke, Bacon, Pope, and Watts," and therefore "must be worthy of deep consideration"!!

The woodcuts which illustrate the volume are outrageous caricatures, wretchedly drawn, and not much better engraved. One of them is said to represent the fine head of a "Mrs Haggart." Is this a transformation of our old acquaintance David Haggart? The havoc made by Mr Lyons of the heads of Burke and Dodd justifies this conjecture.

We readily admit that many useful truths are repeated in Mr Lyons' book; but, as presented by him, they must be very ill apprehended by those who have them still to learn,—and readers of sense and cultivated taste will turn from his pages in disgust.

III. *The Brain and its Physiology : A Critical Disquisition, on the Methods of determining the Relations subsisting between the Structure and Functions of the Encephalon.* By DANIEL NOBLE, Member of the Royal College of Surgeons of England, London : John Churchill. 1846. Post 8vo. Pp. 450.

This is a work which was much wanted, and the want has now been ably supplied. It consists of a physiological and philosophical discussion of the whole subject of the functions of the brain, by a writer well qualified for the task. Mr Noble is advantageously known to the medical world as a contributor of numerous valuable articles to the *British and Foreign Medical Review*; to the editor of which, Dr Forbes, the present work is dedicated as a mark of private esteem and respect for his professional and literary character, and admiration of him as a strenuous advocate of improvement in the methods of research in medical science, and the more exact appreciation of scientific evidence in that department of knowledge. We shall endeavour to give a brief analysis of its contents.

Chapter I. contains an introductory view of the question.

If (says Mr Noble), anatomical structure and relations furnish any evidence of the consideration to be attached to individual organs of the body, certainly the brain has every title to pre-eminence. Its elaborate and refined texture is probably unmatched in the entire animal fabric, and it receives for its nutrition a larger supply of blood than any of the other organs; its communications are the most extensive and varied, connecting it, more or less directly, with most other structures, by means of the nerves, which, at first view, might be taken to be prolongations of its substance; and, finally, its very position being regarded, it surmounts, as if crowning, the whole corporeal mechanism.

And yet, whatever demands upon our attention, on grounds purely physical, may justly be made by the brain, the psychical considerations associated with this organ still more powerfully challenge regards on its behalf. (P. 1.)

Nevertheless the brain has not received that amount of attention and investigation which, *a priori*, might have been expected.

It has often been proclaimed that the brain is the organ of the mind, when those teaching, and those receiving, this doctrine, have not settled the idea to be attached to this latter term;—by some the purely intellectual faculties have been comprehended, and the affections, passions, and sentiments, have been excluded from the definition; by others, the exact meaning has been left uncertain; and only since the investigations of Gall has the brain been, in any case, fairly and unequivocally regarded as the instrument of manifestation of the conscious principle with

all its attributes,—feeling and intellect alike. We cannot hope to ascertain the essence of thought or feeling, or the ultimate essence or substance of the brain, nor even the precise mode in which structure manifests thought, or thought affects structure, because these are placed beyond the reach of our faculties. In speaking, therefore, of an analysis of the mind, or of cerebral matter, we exclude altogether these inquiries; yet it is in our power, and within the lawful domain of human inquiry, to ascertain, in great measure, under what conditions of the brain particular manifestations of the mind occur; and in this way, from sound premises, we may deduce logical conclusions.

Heretofore, with certain exceptions to be subsequently dwelt upon, the physiology of the brain, even by its most prominent cultivators, has been detached from the study of mental philosophy; the mind, without any serious attempt at analysis, has been located in and associated with its presumed organ, and the *doctrine* has gone no farther. Like other departments of science, when improperly treated, it has, under such circumstances, yielded no practical results; and whether there has been question of training the mind in the healthful state, or of treating the brain when diseased and inducing mental aberration, precepts drawn from what is thus erroneously assumed to be physiological experience, have too often been found valueless, or conducive to mischief. (Pp. 4-6.)

A great and unsurpassed amount of talent and industry has been bestowed upon this subject; nevertheless, the most unmeaning anatomical descriptions have, until lately, constituted almost the entire sum of our knowledge regarding the brain. From what cause has so much intellectual exertion been devoid of useful result? For the very obvious reasons, in these days well understood, that the talent was misapplied—that the labour was expended in a wrong direction—that the way was not rightly appreciated. In the language of Lord Bacon, “a cripple in the right way may beat a racer in the wrong one; nay, the fleeter and better the racer is, who has once missed his way, the farther he leaves it behind.” From this cause, the results which have been obtained by physiologists generally, regarding the functions of the brain, have been few, unsatisfactory, and contradictory among themselves.

The mode in which the functions of the brain should be ascertained is by no means settled among physiologists. Canons for our guidance in this respect that are of universal recognition, do not exist. And yet, at a time when science is achieving its mightiest triumphs, and when, in this great movement, the brain and nervous system are beginning to receive a fair share of general attention and study, and when, by the acknowledgment of most physiologists, so much obscurity continues to envelope cerebral physiology, it is surely time that this problem should be solved, and the question settled: How are the offices of particular parts of the brain to be determined? What method of investigation is best calculated to develop the relations subsisting between the structure and functions of the *encephalon*? (Pp. 11, 12.)

Mr Noble observes that the three methods which have been chiefly followed for determining the functions of the brain, have been—*vivisection*, *comparative anatomy*, and *pathology*; and that one of the objects of the present treatise is to examine the *validity* of these methods of inquiry. He says:—

The author believes himself to be in a condition to shew that each of these three methods, as leading to the primary fundamental evidence relative to the cerebral functions, is both defective and vicious; defective, by supplying insufficient data at the best; and vicious, by, in many instances, suggesting erroneous conclusions. It will not be denied that results, capable of being turned to useful account, may sometimes be educed by such methods of investigation; on the contrary, such results may have given, and will probably continue to give, many hints useful in the further prosecution of inquiry into the cerebral offices; and although they have hardly ever of themselves furnished any addition to our sure knowledge of the physiology of the brain, it is yet certain that their usefulness has often been witnessed, in the confirming and the strengthening, and in *trying*, as it were, the results obtained in another and more direct manner, and, in this way, furnishing secondary or indirect proofs. It will be the author's aim to shew that, with respect to many of the published facts of vivisection, comparative anatomy, and pathology, the greatest uncertainty, and even contradictions, abound; that, the facts themselves being admitted, no agreement exists in regard to their doctrinal value, being conceived by certain physiologists to lead to some inference which others of equal authority controvert and deny; themselves, probably, deducing one that is totally different. It will appear, moreover, that almost every physiologist of weight, when untrammelled by the defence of some position which rests mainly upon such objectionable grounds, has readily conceded that the means in question are utterly inadequate to their proposed end.

After reviewing the character, history, and results of those methods of investigation which, it is here contended, are faulty and erroneous, the author will proceed to submit what he, along with many able physiologists, deems to be the true plan of prosecuting cerebral physiology. Structure associated with function—magnitude in the development of the former, in connection with excessive manifestation of the latter—the size of certain parts of the brain, in alliance with corresponding powers of the mind—he believes to be the primary objects of inquiry. That the brain is the organ of the conscious principle, all physiologists of admitted authority are agreed; that, in the case of the nervous system at large, power and development usually coincide, is a proposition concerning which a like general consent obtains; and it is conceded to be a probable fact, that various portions of the encephalic mass have different functions. In the sequel, the writer expects to shew that the offices of these particular parts can be made out only by noticing the invariable co-existence, *ceteris paribus*, of peculiarity in their development, and specialty in the mental characteristics; and that, when conclusions of this kind have once been directly gained, they never fail to harmonise with the sure results obtained from every other source; receiving from the phenomena of vivisection, comparative anatomy, and pathology, a further confirmation; and throw-

ing back upon them a light which greatly assists in the interpretation of such phenomena, as matters previously obscure. (Pp. 12-14.)

Mr Noble, in an able, scientific, and perspicuous dissertation, enters into a full investigation of the merits of each of these methods, and the results which have been obtained from their employment.

Chapter II. is entitled "ON MUTILATIONS OF THE LIVING BRAIN, AS A MEANS OF DISCOVERY IN CEREBRAL PHYSIOLOGY." The history of the vivisections performed by various physiologists is given, and the conclusions drawn from them are compared. In reference to vivisections of the cerebellum, Mr Noble remarks :—

It will thus be seen that no two of the above instances presented anything like coincidence in the results ; but that, on the contrary, direct contradictions occur. Rolando's *paralysis* is met by Bouillaud's *no paralysis*; Flourens' *inability to regulate* movement, is counterpoised by Magendie's *capability*, confirmed by Fodera's experience ; and the same contradiction is seen throughout the entire history of these vivisections. There is no single fact recorded by one operator, which is not counteracted in its tendency to any conclusion, by the experience of some of the others. (P. 25.)

The experiments of Sir Charles Bell on the facial branch of the fifth nerve are analysed, and strikingly contradictory results are shewn to have been recorded by other physiologists.

Whilst Bell is considered to have really established the separate functions of the different roots of the spinal nerves, the anterior being for motion, and the posterior for sensation, the history of this question presents the greatest contrariety in the results of vivisection. Bellingeri was in this way led to the belief that the anterior roots were for the flexion of the various articulations, and the posterior for their extension. Magendie, in prosecuting this department of experimental inquiry, maintained that the anterior were subservient in some respects to sensation as well as to voluntary motion. Altogether, the effects consequent upon the vivisections were any thing but decisive ; and it was only by the correction and explanation which they received from other sources of knowledge, that conclusions at all satisfactory could be drawn from them. It is not meant that there is a precise parallel between such experiments, and those that have been referred to in the case of the encephalon ; the conditions of experiment vary most materially. In a subsequent part of this work there will be occasion to refer to the matter in this point of view ; they have been noticed at present as indicating that, even in the *chef d'œuvre* of the vivisectioners, the course has not been quite so smooth, and so facile, as popularly supposed. (P. 31.)

Other mutilations exploratory of the functions of individual nerves, have produced, among the experimenters, opinions equally discordant.

Professor Panizza cut sundry nerves supplying the tongue, and drew the conclusion from the effects produced, that the glosso-pharyngeal was the special nerve of taste; immediately after the publication of these experiments in this country, they were repeated by Mr Herbert Mayo, who obtained contrary results, and maintained that, not the glosso-pharyngeal, but the lingual branch of the fifth nerve, endowed the tongue with gustatory sensibility. Shortly after, Dr Alcock of Dublin followed in the same track, and concluded that filaments of both glosso-pharyngeal, and lingual division of the fifth nerve, subserved the function in question. (P. 33.)

Mutilations of the living brain, therefore, as a means of *discovery* in physiology, would, Mr Noble conceives, have long since been given up, had their worth been estimated without prejudice. He admits, however, that after the functions of individual parts of the encephalon and the nervous system have been discovered by other and more legitimate means, the results of mutilations harmonise completely with the knowledge which has thus been obtained. The conclusion which he draws in the close of this chapter is, "that, however vivisections may in some instances *confirm*, they must ever be inadequate to *prove* the functions of any portion of the encephalic mass."

The third chapter is "ON COMPARATIVE ANATOMY AS THE PRIMARY AID TO DISCOVERY OF THE CEREBRAL FUNCTIONS." Mr Noble observes that physiologists in general recognise it to be a law, that "*size, or amount of nervous tissue, constitutes a direct element of functional power,—a law which brings the brain and nervous system into harmony with all other created things.*" He traces this law in the various departments of the human frame, and shews that it is now generally admitted by the most recent physiological authorities. "From the foregoing circumstances," says he, "a means has been considered by many to have arisen, by which a demonstration of the offices of individual parts of the encephalon could be made." He shews, however, that there are insuperable difficulties in the way of accomplishing this end by means of comparative anatomy. "Respecting the precise actions of many species of animals," says he, "much uncertainty prevails, arising, in some instances, from defective means of observation, and in others from the contradictory accounts afforded by writers of equal weight and authority." Any precise classification of the instincts, emotions, and intellectual powers of the lower animals, is at present impracticable; farther, the difficulty remains of fixing upon the particular nervous mass appropriated to each sense or faculty in each different species. While, therefore, the spe-

cific psychical qualities of each species are unknown, and when the special locality of each of these qualities in the encephalon is also unascertained, what light can possibly be obtained in regard to the particular powers connected with particular parts, by comparing with each other brains involved in this extent of obscurity?

By this means, excepting as a secondary or subsidiary source of aid, we never could be sure that in all, or even in most cases, we had defined the exact analogues of any given structure in various species. As the matter stands, this is sometimes accomplished in general physiology with some difficulty, proceeding, as we do in reality, on a different plan from the one now under discussion. If we could imagine to ourselves, that physiologists were commencing their inquiries *de novo*, without any antecedent knowledge gained primarily by studying the human type, the unfitness of comparative anatomy for constituting the first path to any obscure, and totally undetermined, region of physiology, would require but little argument for its demonstration. Suppose, for example, we had not made out from studying our own species,—from knowing, by consciousness as well as by general experience,—the distinctness of the senses and their organic connections, how unavailable would have been all our dissections of reptiles, fishes, birds, and mammals; the difference in form of analogous tissues would probably for ever have interfered with a recognition of their functional identity. Cerebral physiology, with some physiologists, is very much in this supposed state. To this matter, however, ample recurrence will be made as we advance. (Pp. 43, 44.)

Let us assume, however, for the sake of argument, says Mr Noble, that a complete or satisfactory psychology of the inferior creation were possessed, how could this be applied to man, if no knowledge derived from other sources existed, concerning the psychical qualities connected with the different parts of the brain in the human species? Mere contemplation of forms is not sufficient.

Who, judging from configuration and external appearance merely, would pronounce the intracranial structures in fishes to constitute the analogue of the structures enclosed within the head of the higher mammalia? Anatomists of the highest repute, notwithstanding the aid derived from other sources of knowledge, are not yet agreed as to the correspondence which obtains among the particular masses, in a comparison of mammal brains with those of fishes, or in some instances even, on comparing different kinds of fishes' brains one with another. Thus, with respect to the first, or anterior pair of knots of nervous substance, found within the heads of fishes, they are considered by Arasky, Serres, Deamoulins, Carus, and Tiedemann, to be analogous to the cerebral hemispheres in man; whilst Collins, Monro, Camper, Ebel, Treviranus, and Cuvier, regard them merely as connections of the olfactory nerves. Again, the second cerebral mass is believed, by the last named physiologists, to constitute the cerebral hemispheres; the former group consider it to form the analogue of the *corpora quadrigemina*. (P. 45.)

Mr Noble proceeds with many other interesting details, and concludes :—

Sufficient has been brought forward to shew that nothing like uniformity, in outward appearance, obtains with the constituent parts of the brain and nervous system in different tribes of creatures ; and that, without some definite and precise knowledge of function to start with, we could never make out the physiology where it was previously unknown, by any study of the forms and the relative position of the several nervous masses. (P. 48.)

Mr Noble next goes on to trace the results which have been obtained by this method. Philosophers, from Aristotle downwards, have laid down the proposition, that man owes his mental superiority organically to the possession of a cerebral structure surpassing in magnitude that of all other creatures ; and have compared the *intelligence* manifested in the animal creation with the size of the brain, without considering what meaning they attached to this term.

Nearly all philosophers who have advanced definitive propositions regarding the relations subsisting between the structure and functions of the encephalon, have started with the assumption that the *intelligence* was a faculty unique, as *consciousness* was simple ; thence they have made comparisons which have been devoid of all positive result, and deduced inferences which have not been confirmed by extended observation, and which, in any case, would have been almost valueless in practical application. It is notorious that the conscious attributes, in different orders of being, vary in *kind* as well as in degree ; some creatures possessing psychical qualities, of which others make no recognised manifestation. Were it, however, not so, it is yet certain that the *intelligence* is compounded of many faculties or aptitudes, notwithstanding the undoubted unity of consciousness in the normal state ; this is a conclusion in which all coincide, who have made the mind a subject of deep meditation. Under such circumstances, it is no wonder that all attempts to define the organic relations of the aggregate intelligence should have led to no positive result. There would have been a similar failure in the case of *sense*, in respect of which also, there is unity of consciousness, could it have been studied only in its general signification, without descending to the particularities of sight, hearing, touch, taste, and smell. Such a proceeding very much resembles an effort to explain the physiology of digestion, as though it were a simple function. " If," says M. Georget, " it be easy to explain by one general power alone, the manifestation of intellectual phenomena, it is not less so to explain that of the digestive phenomena, by the general faculty of digestion ; yet this general faculty is composed in man of the particular faculties of masticating the aliment, of secreting the saliva, of chymification, of secreting the bile and pancreatic fluid, of absorbing the chyle, and of ejecting the alimentary residue ; all of which functions are attached to distinct organs, the action of all of which concurs to the same end." (Pp. 49, 50.)

Physiologists, perceiving the obvious fallacy involved in this proceeding, yet certain, from observation, that size of the brain has *something* to do with the intelligence manifested in the animal creation, have next proposed to estimate intelligence by ascertaining the size of the cerebral structure in proportion to the rest of the body. "And here, as before, the proposition seems to hold good so long as general results only are regarded; and, at the same time, some of the difficulties created by the former scheme appear to be got rid of by the present one; in the case of the elephant, for example,—although this quadruped does possess a brain that is *absolutely* larger than that of man, it is yet smaller in relation to the size of the body. But unhappily for this supposed discovery, it was soon ascertained that the sparrow, the red-breast, the wren, the canary, and some species of monkeys, have brains much larger in proportion to their bodies, than man himself. Here, again, the faulty method of comparing different species, as the primary means of discovery, ended in its customary failure." (P. 51.)

Soemmering, seeing the insufficiency of this rule, propounded the doctrine, "that the volume of brain in relation to that of the nerves, would furnish a true measure of the intelligence; and here, again, failure ensued. The proposition was not based upon any careful analysis of instances, so as, by individual facts, to come at the general issue; but the opposite plan was adopted. It was remembered that, vaguely speaking, man has *generally* the advantage over animals in the predominance of brain over the nerves; descending, however, to particulars, the rule is not universal; in the monkey, the dolphin, and in many birds, the proportion is higher than in man. Cuvier and some others have conceived that the proportion between the brain and the spinal cord might furnish the surest measure of intelligence in various species; such a method exhibiting the predominance of the mental organ over the nervous apparatus of the senses. Cuvier himself, however, acknowledges exceptions, and cites the dolphin as one."

Richerand's proposal to estimate the intelligence by comparing the magnitudes of the head and face, and Camper's attempt to do so by comparing the facial angle in different species, are next discussed, and shewn to be baseless and untenable. The doctrines of Carus are then examined, and their gross inconsistencies and utter variance with all sound physiological observation and reasoning are demonstrated. Mr Noble justly censures Dr Todd and Mr Bowman for the ignorance exhibited in their statements, "that Carus has

lately propounded a new cranioscopy, founded upon a tripartite composition of the cranium, *which bids fair to rival the system of Gall.*" Only an utter want of consideration of what Gall and Carus have done, could have permitted them to print such an opinion,

He next adverts to Dr Carpenter's application of comparative anatomy in determining the physiology of the brain, and exhibits in the most striking manner the errors and inconsistencies equally of his method and his conclusions. Dr Carpenter places the organic centre of the nerves of special sense, and the seat of the instincts and emotions, in man and brutes, in the *corpora quadrigemina*, and the intellect in the cerebrum. Mr Noble's objections are, *1st*, that there is an entire absence of any definite analysis of the mental powers; and, *2dly*, that there is an arrangement of cerebral parts, suggested mainly, it would seem, by the mechanical arrangements of structure,—“The cerebrum forming, in some physical points of view, a simple organ, is made to constitute the material instrument of the *intelligence* as a faculty unique; the *corpora quadrigemina*, especially in many inferior tribes, present every mechanical indication of distinctness, and they are made to lodge the aggregate of the *feelings* (which unguided or uninfluenced by intellect, lead to instinctive and emotional actions); and the *cerebellum*, a separate organ, is made to preside over muscular equilibrium.”

Before entering into details, Mr Noble shews, in the first instance, that Dr Carpenter is not warranted by facts in describing the quadrigeminal bodies as the central termini of all the nerves of special sense. (P. 60.)

He next observes, that as Dr Carpenter has not himself given any analysis of the mental powers which he includes under “intelligence, instincts, and emotions,” it is reasonable to suppose that he adopts the faculties generally stated by the best psychological writers. Mr Noble gives an enumeration of these, with the authorities on which they are assumed. He then proceeds as follows:—

Although the foregoing exposition of the varied attributes of the conscious principle, in our own species, may be far from unobjectionable in several points of view, it may be sufficiently detailed and accurate for the present inquiry, the purpose of which is to estimate the relative bearings which the “intelligence” and the “instincts and emotions” have upon human actions, and to see if these in any way correspond with the proportional development of the cerebral hemispheres and the *corpora quadrigemina*. These relative proportions may receive an imperfect illustration from the subjoined table, based upon the analysis just furnished.

Intelligence, which includes		Instincts and emotions, which include	
As	<div>Capacity of acquiring knowledge, Attribute of Language, Faculty of Comparison, Power of Causality,</div>	4	<div>Instinct of generation, Love of young, Attachment, Combativeness, Propensity to destroy, Sense of property, Disposition to conceal, Self-Esteem,</div>
	located in the Cerebrum as 50.	As	<div>Love of Approbation, Cautiousness, Benevolence, Veneration, Hope, Poetic Imagination, Wonder, Conscientiousness, Firmness,</div>
			17
			located in the Corpora Quadrigemina as 1.

In the above table, we gain a representation of the "intelligence" by the figure 4, and of the "instincts and emotions" by 17; so that *number* of qualities indicating importance, and size determining power, the organic connexions of the latter should, in extent, surpass those of the former by upwards of four to one; yet the theory now under discussion places them—the *seventeen* qualities—in a structure but one-fiftieth the volume of that which constitutes the encephalic seat of the *four* attributes of the intelligence.

Undoubtedly, Dr Carpenter will object to this mode of testing his physiology; but it is not here proposed as one that is valid and altogether just; and yet it is but his own reasoning traced to its legitimate consequences. Whilst he admits, what everybody knows, that the intelligence comprehends various powers, he supplies no detailed account of them; as, then, he furnishes no classification of his own, it is fair to presume that he refers to the intellectual powers as most commonly recognised and arranged by those who have made mental analysis a special study. In like manner, the emotions, passions, and propensities, are stated by Dr Carpenter only in general terms; and this being the case, the sense in which these are most commonly understood by metaphysicians and moral philosophers, must necessarily be taken as the basis of particular definition. Dr Carpenter lays claim to the character of a scientific writer, and is not sparing in his condemnation of other inquirers who infringe or neglect to observe the rules which should govern all scientific investigations. It appears allowable, therefore, to remind him, that if words be employed only in their *general* signification, without resort to *individualities*, it is impossible to test the validity of any scientific proposition; and it has been shewn that the arrangement of individual

psychical attributes, adopted above, is most conformable to ordinarily received notions on such matters. Dr Todd and Mr Bowman, who, in their method of dealing with subjects like the present, are very much in accord with Dr Carpenter, insist, as before quoted, that the "psychologist must determine what are, and what are not, fundamental faculties of the mind, before the physiologist can venture to assign to each its local habitation." At any rate, it is quite certain that, before any substantial advance can be made in cerebral physiology, the philosophy of mind must coincidentally be studied. No physiological conclusion regarding the mental organs, which glaringly contradicts well ascertained psychological facts, can be true. (Pp. 70-72.)

The conclusions which Mr Noble draws at the close of this chapter are the following:—

The physiology of the brain is inseparably associated with mental philosophy. It cannot be otherwise, if the brain be the organ of the mind. And if we would advance our knowledge beyond the general proposition, so as to ascertain the functions of individual cerebral parts, the study of one species, and that one most appropriately the highest, where anatomical variety and psychical peculiarity can with the greatest facility be compared, should ever precede that of the animal kingdom at large. When researches, for the purposes of direct induction, are made upon different species, facts are gained which can only be compared with the greatest difficulty either in an anatomical or physiological point of view. Their relations one to another cannot always be traced, and so they become utterly unfitted to establish any sure conclusion. Most valuable, however, are they in their legitimate place. When facts from the animal kingdom, relating to the anatomy and physiology of the brain, are estimated by the guidance of what is already known in our own species, and when inferences with regard to them rest on their probable analogies to the human type, they are important in themselves, and conducive to the advancement of our general knowledge. Moreover, comparative anatomy constantly strengthens and elucidates truths ascertained, in the first instance, by observations made on the human structure; and where it does not, it may sometimes lead to detection of probable inaccuracies in previous observations on man, bringing about their rectification by the induction of a more strict investigation. (Pp. 74, 75.)

Chapter IV. is "ON PATHOLOGY, AS A MEANS OF DETERMINING THE OFFICES OF PARTICULAR PARTS OF THE BRAIN." Mr Noble analysis the doctrines and facts which have been delivered on this subject by the most distinguished medical writers, and maintains that a knowledge of the healthy function cannot be gained by studying diseased structure and diseased manifestations. He shews that, in regard to the other organs, morbid anatomy has never been sufficient to reveal the healthy functions; and concludes:—"It is, then, certainly no undue or hasty assumption to conclude that pathological researches, like vivisections and comparative anatomy, are but little fitted for the *discovery* of the functions of particular parts

of the encephalic mass ; that however they may occasionally supply hints that lead to successful results on the application of a sounder method of investigation,—however they may corroborate truths otherwise obtained, they are, in their very nature, unsuitable as *direct* guides in the prosecution of Cerebral Physiology.” (P. 92.)

Having shewn the incompetency of all these methods as means of *discovering* the functions of particular parts of the brain, Mr Noble proceeds, in Chapter V., to consider “CEREBRAL DEVELOPMENT, COMPARED WITH PSYCHICAL MANIFESTATION IN INDIVIDUALS OF A SINGLE SPECIES, AS A MEANS OF DETECTING THE PARTICULAR PHYSIOLOGY OF THE BRAIN.” He shews that an analogous method has been followed in the discovery of the vital functions of the other organs, and demonstrates that, by this method alone, can the physiology of the brain be ascertained. After giving battle to Dr Marshall Hall, Mr Grainger, and Dr Carpenter, he expounds the method pursued by Gall, and shews its superiority to all the others. He concludes this chapter in the following words :—

By whomsoever Phrenology, or Gall's doctrine concerning the brain, shall receive ample and complete attention in a serious and philosophic spirit, with perfect immunity from the prejudices that result from anterior notions or previous habits of thought, to such an one the whole question will present itself purely as a question to be determined by the state of facts ; if the instances recorded have been accurately observed, if the premises in their general character be sure, the conclusions follow irresistibly. In a few words, unless rules of investigation apply to the brain's physiology, which differ from those relating to the remaining organization, facts will be found to necessitate the admission,—*first*, That the brain is the organ of the mind ; *secondly*, That different parts of the cerebral structure subserve the manifestation of different mental faculties ; and, *thirdly*, That size of organic apparatus, *cæteris paribus*, constitutes a measure of functional power.

It is idle and vain to discuss any of these axioms without previous acquaintance with the observations upon which they are raised ; no appeal to other axioms, however constantly admitted or validly established, can rightly deal with the subject. The facts must be fairly met, and, when these can be disproved, the inferences may be rejected, but not one moment before. The greatest and the wisest cannot meet the question honestly in any other way, or propose one single rational objection in a different manner. The observations should be repeated, whether the purpose be to *learn* or to *controvert* ; but before these can be well and accurately made, some preliminary capability, as in every other department of knowledge, must be procured. With respect to this matter, the day is now past for all preposterous nonsense about *feeling if there be any bumps* ! Phrenology, or the physiology of the brain, must be regarded “ as it exists in the minds of those who have actually studied it, and not in the crude and contradictory form in which it is presented to us by

those who have never examined its pretensions.*" If a *scientific* examination of the facts in question be proposed, in contradistinction to one that is merely physiognomical and empirical, a general acquaintance should be had with the philosophy of mind, so that the inquirer shall be able to recognise primitive faculties when he observes their manifestations, and to distinguish these from mere modes of action or feeling common to the faculties in general; and with the anatomy of the brain, the disposition of its convoluted, vesicular structure, and the relation of this to the fibrous portion, and the ganglionic masses and tracts of grey matter at the base. By this means alone can the true principle, guiding the estimate of development, be fully and rightly understood. Hereunto should be added a pretty accurate knowledge of the bones of the head, whereby the chance of confounding mere osseous prominence with that induced by development of brain will be avoided. Moreover, as coincidence of cranial form and cerebral configuration is not in every region quite to the same extent, due importance cannot be attached to this circumstance in ignorance of the proper osteology of the head. Further, a familiarity must be obtained with such disturbing influences as create difficulties in the *application*, not only of cerebral, but of general physiology; the influence of constitutional *quality* of brain in modifying the ordinary effects of *quantity*—the influence of disease, that of old age, and of early childhood—have all to be estimated, before the facts can be rightly dealt with. These things, however, constitute no speciality in the case of the brain; it is so with the muscular system, it is so with the nerves. It must yet always be borne in mind that, both with the brain and with the other structures, the influences in question do but disturb the results in exceptional instances; they must be known and appreciated, however, otherwise Gall's doctrine can never be examined and tested *scientifically*.

Having now exhibited what the author believes to be the true method of determining the relations subsisting between the structure and the functions of the encephalon—a method which, *de facto*, has ever been applied in physiological investigations that have eventuated successfully,—he shall now proceed to shew the results which have been gained by its application, and more especially in the hands of Dr Gall, its *systematic* discoverer. (Pp. 123-5.)

Chapter VI., "ON THE FUNCTIONS OF THE BRAIN AS REVEALED BY DR GALL'S METHOD," contains a succinct and lucid history of the observations by which Gall was led to the determination of the functions of the particular parts of the brain. This portion of the work is illustrated by cuts, shewing the positions of the organs, and their appearances in different degrees of magnitude. Mr Noble concludes:—

What would be thought of the philosopher who, in dealing with Neurology, should set out by affirming a total disbelief in it, without any specification of the items to which he took exception, or on what facts observed he advanced a sweeping negation of the aggregate doctrine?

* Dr Combe. On Mental Derangement. Preface, p. xxiv.

If the grounds of disbelief consisted only of certain general circumstances, bearing collaterally on the question at issue, assuredly we should pronounce him to be of some other school than that of Bacon. In such a case, we should deny to the sceptic the right to any expression of opinion upon the matter, until he had repeated the processes which had led to the particular discoveries, or else had given reasons for distrusting the fitness of such processes for developing solid conclusions. In the instance supposed, we should justly expect the whole, item by item, to be settled by a system of induction as rigorous as such subjects will admit of.

Should it not be so with Phrenology? When its claims are summarily rejected by the physiological sceptic, do we not act rightly in demanding what it is that he objects to? Is it to Phrenology altogether, or to some of its details? or is it to the kind of evidence by which it is supported? State to us the facts which relate *directly* to the question, and that bring about your disbelief, or the reasons why you object to our *method* of investigation. Do this, and we may approach to some settlement of the matter; but, previously, do not scoff at, and deride, or contemptuously treat with indifference, what you do not understand. Take up the propositions, one by one; test their validity by facts parallel to those by which it is asserted that they have been established; and then you will deal with Phrenology as you do with Neurology,—admit what is ascertained truth; doubt, and yet further investigate, what is uncertain; and reject what observation shall decree to be unfounded. (Pp. 213, 214.)

Having discussed the methods of investigating the functions of the brain, and shewn the superiority of that adopted by Gall, and having presented a lucid account of the discoveries thereby accomplished, Mr Noble proceeds, in Chapter VII., to shew “THE HARMONY OF CEREBRAL PHYSIOLOGY (THUS DISCOVERED) WITH STRUCTURAL ANATOMY AND MENTAL PHILOSOPHY.” It is quite clear, says he, that any exposition of the functions of the brain which is just, must exhibit a doctrine which is closely correspondent with the cerebral structure. A like principle obtains in regard to mental philosophy. If the brain be the organ of the mind, a physiology which rightly expounds the functions of particular parts, cannot be in discordance with truths which the experience of mankind in all ages has made known, and which have ever been recognised all but universally.

Phrenology, though made up of the anatomy of the *brain*, and the philosophy of the *mind*, is, in itself, something comprised neither in the one nor in the other; but, as a *science*, it is constituted of certain propositions affecting the association—the organic union—of the two. Mind and its philosophy were studied, and, in some points of view, understood; the brain and its anatomy were investigated, and, in many respects, accurately described; these things were objects of inquiry anterior to the epoch of Gall. Yet these two branches of science continue to stand as widely apart as if there were no natural connection between them. The

physiologist did not apply his knowledge of the brain to the elucidation or advancement of mental philosophy ; and the psychologist prosecuted mental science as completely oblivious of the brain, as if it exercised no influence whatever over mental manifestations. In short, no true physiology of the brain was ascertained ; there was no Phrenology—the science which sets forth the laws that affect the mutual dependence and reciprocal influence of mind and brain, and must then, if true, maintain nothing that is inconsistent with the sure circumstances of either. (P. 218.)

Mr Noble enters pretty minutely into the subject of cerebral anatomy, and demonstrates that every thing that is known regarding it, is in harmony with the facts of Phrenology.

Chapter VIII. is on the “HARMONY OF GALL’S PHYSIOLOGY OF THE ENCEPHALON, AND THE RECORDED EFFECTS OF ITS MUTILATIONS.” The experiments of Fodera, Flourens, Magendie, Rolando, Bouillaud, and others, on the brain and cerebellum, are minutely criticised. The weighings of the brain, &c. by M. Parchappe, Dr Stone, and Sir W. Hamilton, are also examined ; and the result is thus stated in recapitulation : “ It has been the author’s principal object in this chapter to prove two things ; 1st, That no recorded facts concerning mutilations of the encephalon are at variance either with the principles or with the leading details of the cerebral physiology taught by Gall—but that, on the contrary, they harmonise most completely with this physiology, when rightly interpreted ; and, *secondly*, That, whatever be the true state of matters as to any possible function in the cerebellum affecting locomotion, vivisections have established nothing of the kind. The discussion has been extended in the case of the cerebellum, because opponents, of late years, have levelled their whole force at this particular point of Gall’s doctrine ; and because, in opposition to it, much plausible evidence has been accumulated, which, however, on careful examination, shews that *plausibility* is the highest commendation it ought to receive.” (P. 303.)

Mr Noble vigorously, and we think with very considerable success, combats the idea that the power of voluntary motion has its seat in the cerebellum ; and we regret that the great length of our quotations prevents us from adding a summary of his views on this topic.

The Ninth Chapter contains a valuable dissertation on the “HARMONY OF GALL’S PHYSIOLOGY WITH COMPARATIVE ANATOMY.” Engravings are given of the brains of the cat, the sheep, and man ; the forms of which are compared, in relation to the psychical qualities of these different species. The opinions of Dr Carpenter, M. Serres, Dr Prichard, Dr Todd, and Mr

Bowman, and others, are discussed. The chapter is summed up in the following words :—

The subject of the present chapter involves so many facts and considerations, that anything like a complete exposition of the existing state of knowledge with respect to it, would have been utterly beyond the author's capability ; and, indeed, to have done full justice to this topic would have required an acquaintance with comparative anatomy and natural history, much exceeding any that he has the happiness to possess. His intention in the whole scheme of the work, has been rather to *indicate principles* fitted for the prosecution of the subject, than to collect an adequate body of evidence for exhibiting the full measure of proof which attaches, not only to the great truths of Phrenology, but also to its leading details. In correspondence with this design, as relating to the harmony of Gall's doctrine and comparative anatomy, the author conceives himself to have shewn, in the first instance, that numerous facts exist which display very strikingly the harmony in question ; and, in the next place, that none of the ordinary objections to Phrenology, taken from the inferior creatures, will justly apply ; that, in some instances, such objections come from misapprehension of the actual facts ; and that in certain others, most probably, they arise from an erroneous interpretation being affixed to phenomena, not in themselves inaccurately observed. (P. 333.)

Chapter X. is on "THE HARMONY OF GALL'S PHYSIOLOGY WITH PATHOLOGICAL PHENOMENA AND THE GENERAL FACTS OF MEDICAL SCIENCE." Mr Noble here displays the same characteristics of research and acute discussion, which we have noticed with respect to the preceding chapters.

Chapter XI., "ON QUALITY OF STRUCTURE, AS INFLUENCING FUNCTIONAL MANIFESTATION," contains an exposition of the influence of the temperaments, and of quality of brain, in so far as not indicated by these. Mr Noble expounds at considerable length the indispensable necessity, in practically applying Phrenology, of keeping in view the great extent to which brains differ in quality. On this account no scientific phrenologist, he observes, will compare two brains, and predicate from their size alone the superiority of the one to the other, as an instrument for manifesting the mental faculties ; he will limit himself to the comparison of the size of the different organs in relation to each other, in the same head. From not attending to this principle, innumerable difficulties are encountered by persons who sincerely desire to study Phrenology, and insurmountable stumblingblocks are easily found by those inquirers whose object is not to test the truth of the doctrine in a fair spirit, but to find plausible pretences for denying it.

Chapter XII. considers "PHRENOLOGY AS AN INDUCTIVE SCIENCE, AND AS A SCIENCE SUSCEPTIBLE OF PRACTICAL APPLICATION." Mr Noble, after maintaining by vigorous

arguments the scientific character of Phrenology, proceeds to adduce a variety of cases and of testimony to establish its practical utility. These it would be superfluous to lay before the readers of this Journal ; but we may cite a remark which he makes after quoting the letters of Mr Richard Carmichael of Dublin, Dr W. A. F. Browne, Dr W. B. Hodgson, and Professor William Gregory, published in our last number, pp. 122-8. It is in these words:—"Now, does any one suppose that Dr Carus, or Dr Carpenter, or Dr Todd and Mr Bowman, or any one else having, like these physiologists, rejected the physiology of Gall, could procure such testimony in favour of *their* physiology of the brain, as that which the above extracts furnish? Nay, would they themselves even write in such terms of their own doctrines? That a *false* physiology should be so *useful*, and a *true* one so *useless*, contradicts all rules of philosophy and all experience." (P. 406.)

We take leave of the work by quoting the paragraphs which form its conclusion. Although the extract is long, it is well worthy of being inserted without abridgment. After remarking that in the attempts which he has made to demonstrate the accuracy and utility of the *results*, his leading purpose has always been to establish the soundness of the *method* by which they have been obtained, the author proceeds:—

To determine the true method of ascertaining the relations subsisting between the structure and the functions of the encephalon, may, at first sight, have appeared so very simple a problem, as to have needed no *book* for its solution ; but the experience of the last fifty years affords a sufficient answer to this objection. In the year 1796, exactly half a century ago, Dr Gall publicly announced the discovery of a connection between certain specific faculties of the mind, and certain particular parts of the cerebrum and the cerebellum ; explaining the method by which he had attained his conclusions. As will have been apparent from what has preceded, a number of inquirers, from that day to the present, have pursued the method adopted by Dr Gall, and have obtained coincident results, have extended his discoveries, and applied them in practice. On the other hand, the great body of physiologists, rejecting the views of Gall, and condemning his method of investigation, have sought, by methods of their own, to arrive at a cerebral physiology different from that which he propounded. In reviewing the results of these fifty years' labour, it is impossible to deny that Gall's opponents, although many of them men of talent and boundless industry, have failed in the attempt to discover a physiology of particular portions of the brain, which has met with any very general approval, or which has been applied to any practical purpose. Satisfied that causes existed for so untoward a condition of cerebral physiology, it occurred to the present writer that some advantage would result from a systematic and extended inquiry respecting the merits of the various routes by which different physiologists have endeavoured to reach the goal.

The importance of this inquiry will be the more apparent, when it is considered that the method of investigation is recognised as of paramount importance in all other scientific inquiries; because it is constantly seen how the highest abilities, while pursuing an incompetent method, fail to accomplish what may be achieved without difficulty, by comparatively slender talents applied in the right direction. This truth has been perceived, and long and earnestly insisted upon, by the followers of Gall, while it has been almost always overlooked by his opponents. So early as 1819, Mr Combe, in a correspondence with Dr P. M. Roget, appended to his *Essays on Phrenology*, formally proposed a discussion of this question of method, pointing out the superiority of the mode of investigation pursued by Gall, over that of all his predecessors or contemporaries; but Dr Roget did not meet the question with a due appreciation of its importance. In most of the phrenological works that have been published since that date, the question of method has occupied a prominent place, while it has been as regularly evaded or overlooked by writers on the other side. Indeed, so regardless have opponents been in regard to the competency of their own methods of inquiry, that the only point in which they have been consistent, is their rejection of that of Dr Gall. Every other method, however illegitimate, or however condemned by themselves in the abstract, has been received by the vast majority of them, as scientific, if it only professed to lead to conclusions subversive of his discovery. No rigid scrutiny has been considered necessary into either facts, principles, or deductions, if the aim have been to give the deathblow to Phrenology. Facts the most inconsistent, inductions the most unwarranted by the premises, and arguments the most illogical, have passed unarraigned and uncondemned, when employed with a view to supersede Gall's physiology of the brain; and, as will have been obvious from many parts of this work, such a state of things has continued to a most unpardonable extent, even to the present day. Surely half a century is a period sufficiently protracted for inquirers to have wandered without profit in a trackless desert. If Dr Gall's method be fundamentally erroneous and impracticable, let its inadequacy be proved, and then let it be abandoned for ever; but, on the contrary, if it be sound, and constitute the best portal to the knowledge which is sought, let its utility at length be perceived and acknowledged, and let those who desire to enter the field of investigation, avail themselves of the opening which it affords, and proceed by the only practicable method to study and to advance the physiology of the brain.

Such are the views which prompted to the execution of the present work. Of the imperfections which characterise many of the details and illustrations set forth in its progress, no one can be more fully sensible than the author; but of the justness and the soundness of all the leading arguments (in the employment of which he claims no originality), he is profoundly convinced. And, under all these circumstances, he ventures to assert that the time is come when, for many reasons, the opponents of Gall's physiology are bound to make good, or to abandon, their own methods of investigation, and to fix at the same time the true value of their own achievements in determining the special functions of the particular parts of the brain. Hitherto they have considered it unnecessary to bestow much attention upon their own positions; they have prin-

cipally aimed at negation. But as every erroneous doctrine obstructs the access of inquiring minds to truth, it becomes a useful labour to weigh the principles, to sift the arguments, and to try the facts of the opponents, so that the ore may be separated from the dross, and the latter removed from the student's path. (Pp. 431-434.)

This analysis of Mr Noble's work, although long, conveys but a very imperfect idea of its value. The book is itself so able a condensation of fact and argument, as to render farther compression, without obscurity, extremely difficult. But we hope that enough has been said to induce every one who desires to study the physiology of the brain, and the methods of prosecuting it scientifically, to peruse the work. We congratulate Mr Noble on the professional, scientific, and literary attainments which it displays. His medical brethren, to whom his success must, in too many instances, stand in the relation of a defeat, may be slow to perceive, and slower still publicly to acknowledge, its merits; but it will make a deep impression on unprejudiced thinking minds, and the more profound and comprehensive the capacity of the reader is, the greater will be its influence over his understanding. We venture to predict that after it has been fairly and deliberately weighed, it will put an end for ever in this country to the crude, careless, inconclusive, and worthless speculations which have too often been propounded by medical writers as the physiology of the brain. It will compel future inquirers to consider the adequacy of their methods of research to effect the purposes which they have in view, and the relevancy of their facts, according to the rules of a rational logic, to sustain the conclusions which they deduce from them. We further anticipate that in future the higher class of minds in the medical profession will be found cautious in their condemnations of Phrenology; and, above all, that those who may hereafter assail the science, will look more than they have hitherto done to their own positions, and, instead of hazarding an assault, will make preparations for the defence of their own camps. They will certainly not be left in quiet possession of their positions, but be compelled to take the station of the defenders of error, instead of the assailants of Phrenology, which has hitherto been their favourite character.

III. *Phrenology considered in a Religious Light ; or Thoughts and Readings consequent on the perusal of "Combe's Constitution of Man."* By Mrs JOHN PUGH. London : T. Ward & Co. 1846. 12mo, pp. 208.

The design of this work is to recommend the study of Phrenology and the Natural Laws of Man, to the evangelical public. Its author evinces every quality calculated to render it worthy of their attention ;—knowledge of Phrenology from reading and observation ; knowledge of Scripture from profound and earnest study ; and knowledge of the opinions of commentators, divines, and writers on education, on the various topics touched on in the book—all combined with a vigorous intellect and devout sentiments. It appears in the form of Letters addressed to the author's sister, and the "circumstances which induced the study" are stated in the *first* letter as follows :

When Mrs Pugh was a child at school, she could not maintain the first place in her class, "that post being dependent on the pupil repeating by rote all the lessons that were to be learned." At a later period, a young fellow-student "who constantly maintained the first place in the highest class, in all those pursuits which required thought and the power of repeating, could not, by any effort, attain to mediocrity in the accomplishments of music, drawing, and dancing ; and, after spending much time during several years in her vain attempts, she at length relinquished them." In a lower class, there was a pupil of the same age, who performed admirably, on the harp and pianoforte, the music of Mozart, Handel, and Dussek. "Her drawings, whether in pencil, chalk, or colours, on card-board or on velvet ; figures, landscapes, or flowers, rivalled the copies her master put before her. Her handwriting excelled that of her tutor. Neatness and boldness were the characteristics of her handyworks." She proceeds :

"These and other observations which I continually made, completely puzzled me ; and in vain I longed to ascertain the reason why, with the utmost desire to excel, or at least to equal, my two companions in their respective departments of excellence, I could by no efforts attain my wishes.

"Years passed on, and I engaged in the work of education. Among the number of my pupils I observed the usual variety of talent and disposition. Here and there, one stood out from the rest in some mental or moral peculiarity, for the manifestation of which I could not account." She gives several striking examples, and continues : "Thus engaged during ten years, I had ample opportunities for observing different orders

of intellect, and degrees of moral feeling. I was, at the same time, very anxious not to limit my exertions to impart merely secular knowledge and ornamental arts. I realized, in some measure, my responsibility to God. With the tribunal of the Supreme Judge in my mental view, I endeavoured to lead my pupils in the paths of virtue and religion.

"Some I had only to take by the hand, and they willingly accompanied me, pressing forward subsequently in the way I wished them to walk, much to their own benefit and happiness, with the satisfaction of those around them.

"But, oh! how many a wayward child have I endeavoured in vain to lead. What obstacles have I tried in vain to overcome! How many weeds have I seen grow up, notwithstanding all my attempts to eradicate them! The vain girl is now the vain woman. The perverse and selfish disposition is such still, modified, it may be, by other feelings and surrounding circumstances. In all my pupils, where I have had opportunity of knowing, character remains essentially the same.

"I endeavoured invariably to sow the good seed; and the varied success, or in some cases, alas! entire failure of my anxious and prayerful efforts, have given rise to the most pleasing or painful feelings. In vain have I sought an answer to the question, How is it? I could not, after the most diligent search, convict myself of want of kindness or of carelessness, or, according to the light I had, want of judgment, and I dared not charge God with unfaithfulness to his promise.

"At length I was induced to peruse 'The Constitution of Man,' a volume from the pen of Mr George Combe. Light broke in upon my mind. The experience that I had gathered, and the facts which came under my daily observation, so entirely corresponded with much that I met with upon its pages, that I could not withhold the assent of my judgment, or come to any other conclusion than that the science of Phrenology has truth for its basis.

"But in proceeding towards the end of the work, I met with very serious difficulties.

"My mind was painfully exercised while I read, again and again, the 9th chapter, 'On the Relation between Science and Scripture.' Many of the views *seemed* to be at variance with Revelation. I could not disbelieve the evidence of my senses on the one hand, nor relinquish my hold of Scripture truth on the other. To recede, appeared to be folly; to advance, madness.

"I laid the book aside for many months. I searched the Scriptures diligently. I wept, and prayed, 'Preserve my understanding from error. Let me not believe a lie. Lead me

into all truth.' Such was the language of my inmost soul. 'Perish the knowledge of science,' I thought, 'if it can only be obtained by the abandonment of my hopes for eternity!'

"When I first entered on the work of tuition, I sedulously availed myself of every assistance within my reach, to increase my fitness for the task. I diligently perused the works of Mrs H. More, Miss Edgeworth, Miss Hamilton, and other writers of less note. I possessed myself of the small works of Mrs Child and Mr Abbott. I took in the 'Mother's Magazine' at a later period, and added to my little library Mrs Ellis's 'Women of England,' 'Woman's Mission,' Taylor's 'Home Education,' and other works of a similar nature. I also attended the meetings of the Maternal Society, held in Paternoster Row, and in the Committee Room of the London Female Mission.

"But, after all, Mr Combe's work had given me more light and assistance than I had obtained from any other source, and, after I had laid it aside, I found myself constantly acting upon the ideas I had received from its perusal. In my social intercourse, also, I found considerable help from its pages.

"I, therefore, determined to recommence my study, and read other authors upon the same subject. I purchased Mr Warne's pamphlet, 'On the harmony between Phrenology and the Scriptures;' 'Man responsible for his Opinions,' &c., a lecture from the pen of Mr Isaac Taylor; 'Lectures on Phrenology,' by Dr Spurzheim; Mr Combe's 'Elements of Phrenology.' Also, I read with very great satisfaction, a work by W. Newnham, surgeon, entitled 'Reciprocal Influence of Body and Mind;' also, 'Physiology applied to Health and Education,' by Dr A. Combe. Lately I possessed myself of a copy of a small work by the Rev. J. Warne, having for its title 'Phrenology in the Family, or the Utility of the Science in Early Domestic Education.'

"I now drew from my book-case Mr Combe's work first mentioned, and resolved to read it once more, to ascertain what appeared to me to be in accordance with Revelation, and what seemed otherwise, that I might feel satisfied whether his opinions were really opposed to the Scriptures, or merely independent of and distinct from them.

"In the following letters I shall endeavour to point out the mode of my investigation.

"Before I close, I must make one more remark with regard to Maternal Associations. Let it not be supposed that I depreciate their value. On the contrary, I think of them as well calculated, with God's blessing, to effect great good:—on mothers, in arousing them to a sense of their solemn responsi-

bility to God and to the world ;—on children, as being the subjects of fervent, united, and believing prayer, which has never been offered in vain.

“Nevertheless, attendance upon their meetings did not answer my expectations, for this simple reason: I wanted *physical* knowledge, and an acquaintance with mental philosophy. I needed information which would lead me to discern between *natural incapacity* and moral obliquity; and this I acquired, in part, from the works of Mr George Combe, Dr A. Combe, W. Newnham, surgeon, and others of similar character.”

The subjects of the succeeding Letters are the following :—

Letter II. “There is a Spirit in Man;” or, Phrenology does not teach that the Brain is the Mind, but only the organ of the Mind.

Letter III. “On the Feelings of the Human Spirit in Relation to God, its Father.”

Letter IV. “On the Means Used by the Infinite Spirit to remove the Alienation of the Human Spirit.”

Letter V. “On the Connection between the Material and Immaterial, or Body and Soul.”

Letter VI. “On the Animal Soul; its Nature and Destiny.”

Letter VII. “On the Origin of Moral Evil.”

Letter VIII. “Cerebral Organization does not prevent the Salvation of the Soul.”

Letter IX. “The Nature, Mode, and Result, of Divine Influence.”

Letter X. “Phrenology viewed in connection with the Doctrine of Sanctification.”

Letter XI. “Liberty or Freedom.”

Letter XII. “Man’s Responsibility.”

Letter XIII. “On the Efficacy of Prayer.”

Letter XIV. “Conclusion.”

In her last letter, she thus states the “conclusion” at which she has arrived. “My object, in commencing the course of study which has produced these Letters, viz., that of ascertaining if Phrenology was a safe study for a Christian to pursue, has been most satisfactorily answered to my own mind.

“I have before affirmed, that the perusal of Mr Combe’s work, ‘The Constitution of Man,’ had given me clearer light upon the nature of *mind in connection with a material body*, than any other volume with which I had met. And now I feel that I have obtained a safe and sure, though not yet perfect, guide to direct me in the duty of *self-government*, and that which belongs to me in the various relations of life—public and private—domestic and social.

“Viewing the human spirit, simply as such, I have ob-

tained a stronger conviction than ever I had before, that it is man's natural birthright to worship the Infinite Spirit according to the dictates of his own conscience, in submission to the will of God, *as laid down in His word*, and not according to the dictates of his fellow-man. Any interference between the human spirit and its Author, or Father, is an infringement upon the prerogative of Jehovah, who says, 'All souls are mine;' and who issues His own laws to His own subjects. 'God is a spirit,' and the true worshippers 'shall worship the Father in spirit and in truth.'—'One is our Master, even Christ.' "

The only criticism which we add, is, that we should have liked the work better if the author had given us more of the dictates of her own strong mind, and limited her citations from the works of other writers. From what she *has* written, we see ample evidence that it is modesty, or diffidence of her own powers and judgment, and an over-estimate of the learning and wisdom of the men who write books,—and not want of original resources, either of thought or expression,—that have led her to rely so much on authority as she has done. When she next writes, let her take courage; she possesses abilities and principles which warrant her in standing forth on the basis of her own understanding. Meantime, we commend the spirit in which she has executed her work.

IV. *Moral Philosophy; or the Duties of Man considered in his Individual, Domestic, and Social Capacities.* By GEORGE COMBE. Third Edition, revised, corrected, and enlarged. Edinburgh: Maclachlan, Stewart, & Co. London: Longman & Co., Simpkin, Marshall, & Co., and W. S. Orr & Co. 1846. Royal 8vo, pp. 116.

In a preliminary "advertisement," Mr Combe states that a cheap edition of this work having been repeatedly called for, this "People's Edition" has accordingly been printed. "Several alterations and additions have been introduced, but none of them affect the principles and doctrine originally advanced. Since the lectures were delivered," says he, "Phrenology has made so great a progress in public opinion, that the apologetic tone frequently used will already appear to many readers to be antiquated."

In connexion with this remark, we may here mention that a German translation of the "School Edition" of Mr Combe's *Constitution of Man* has just been published at Manheim by Mr George Hülle, the Government schoolmaster of Königs-

winter, near Bonn. The translation was submitted by him to the official superintendent of the Prussian schools for the district (that of Cologne), and obtained his approval as a school-book, in which capacity Mr Hülle expects that it will be extensively used, first by the schoolmasters, and afterwards by the pupils.

IV. INTELLIGENCE, &c.

Lectures on Phrenology.—On 8th April Dr Weir concluded his first course of lectures on Phrenology in Anderson's University, *Glasgow*. We shall print his concluding address in next Number.—During the last six months, Mr Alexander Wilson of Dublin gave courses of lectures on Phrenology in *Ennis* to audiences of 80, in *Limerick* to 500, in *Tipperary* to 60, and in *Clonmel* Mechanics' Institute to 50; and he is now about to deliver a course of six lectures in *Waterford*.—"The following requisition," says the *Liverpool Mercury* of 29th May, "very numerous and respectably signed, has been presented to W. B. Hodgson, Esq., Principal of the Liverpool Mechanics' Institution:—'Sir,—We, the undersigned, directors, teachers, officers, members, and subscribers of the Liverpool Mechanics' Institution, respectfully request that you will consent to re-deliver the course of lectures on Phrenology which you formerly gave in the Institution. Those of us who had the gratification of hearing your former lectures, do not consider it requisite to urge any reasons in justification of the request which is thus made. It is thought sufficient to state, that it is now about five years since those lectures were delivered; that, in consequence of the annual fluctuation of the members, there must be a great number of persons connected with the Institution to whom the lectures would not only be new, but would also be, no doubt, as interesting as they were to those who heard them; that, though the lectures were twelve in number, and took place successively, twice in each week, they were yet regularly attended by an audience composed of about 1200 persons: they seemed, while commanding the most devoted attention, to excite the most intense interest. We unite, moreover, in the opinion that the science of Phrenology is deserving of much more consideration than is, we believe, given to it in most educational institutions. The education, talent, and station in society of many of those who have publicly professed a belief in its truths; the evident application of its principles by many of the leading literary persons of the day, as appears from their writings; the plausibility with which it attempts to explain the operations of the mind, should entitle it to be considered a legitimate subject for, at least, ordinary interest, and impartial inquiry.' We are glad to learn that Mr Hodgson has complied with the wish of the requisitionists, and that the Directors of the Mechanics' Institution have made arrangements for the delivery of the course at the commencement of the lecture season in January 1847."

Lectures on Mesmerism and Phreno-mesmerism, illustrated by the usual exhibitions of cases, were delivered by Mr Spencer T. Hall, at

Bolton in March, and *Derby* in June; by Mr Adair at *Liverpool* in April; and by Mr E. T. Hicks at *Swansea* towards the end of the same month. Mesmerism appears to have occasioned considerable excitement and controversy in Swansea, several medical gentlemen, particularly a Dr Williams, having taken part in the discussion. The following is the concluding portion of a long report published in the *Swansea Cambrian* of 1st May:—"At the conclusion of the experiments, Dr Williams addressed the audience in reply to the severe observations of the lecturer in reference to the prejudices of the profession against Mesmerism. He warmly defended the Faculty, the most eminent members of whom had denounced Mesmerism as a fraud and delusion. He appealed to the audience (who, he said, were unduly biassed in favour of Mesmerism), whether the practitioners were not justified in instituting the strictest inquiries, after the decided opinions pronounced upon the subject by the most learned and eminent individuals, whom the Faculty had always regarded as their teachers. Dr W. then proceeded, in very energetic language, to controvert some of the statements made by the lecturer on the previous night, in reference to the character of the French Commission appointed to inquire into the truth of Mesmerism. Mr Hicks replied, alluding to the names of several eminent men who were advocates of Mesmerism. He likewise made some observations upon the conduct of some gentlemen near the platform, who had attended the meeting for the purpose of laughing and jeering, instead of patiently investigating the truth and reality of the facts. Mr Michael rose up to defend his friend, to whom the lecturer had alluded by name. A very warm discussion ensued between the lecturer, Dr Williams, Mr Michael, and other gentlemen, which assumed a rather personal complexion, and eventually diverged into a variety of subjects; electricity, galvanism, and phreno-magnetism, being incidentally discussed. At the conclusion, the lecturer apologised to the audience, expressing his regret that so much time had been taken up in discussion; and announced his intention of delivering another lecture on Monday evening, which should be confined to experiments. On Monday evening the room was crowded to suffocation, the circumstance of the opposition on the previous evening having caused much additional interest to be felt in reference to the question. Upwards of a hundred persons left, being unable to gain admittance. The same patients were operated upon, and the experiments were similar, although considerably more diversified. Any phrenological organ would be excited at the request of the audience. In the majority of instances, Dr Nicol named the organ, by simply calling out the number, or by handing it to the lecturer written on a piece of paper." No such experiments are of scientific value unless the subject of them is *known* to be ignorant of Phrenology, and never to have witnessed a Phreno-mesmeric exhibition. Moreover, to avoid the alleged possible influence of the operator's will, he also ought to be unacquainted with Phrenology, or at least be prevented from knowing what part of the head he is touching.

In the end of April, Mr J. Q. Rumball delivered two lectures in *Jersey*, "on the frauds, delusions, and fallacies of what is called Mesmerism." They are reported at considerable length in the *Jersey British Press* of 2d May; but notwithstanding the inflated style in which they are lauded by the reporter, we cannot help thinking them far more amus-

ing than philosophical or convincing. Mr R. was opposed by Dr Jolit, who, while defending Mesmerism and Dr Elliotson, admitted (as every one must) that there is a great deal of quackery among professing mesmerists.

London.—Since our last publication, the London Phrenological Society has ceased to exist, and its property has been sold. We have not learned the immediate causes of its dissolution; but rumour has long pointed to the undue ascendancy of party-spirit, as likely to bring about this unfortunate result.

We regret to announce also the death of Mr James Deville, who, though not a man of science, or possessed of the advantages of a literary or professional education, has for more than twenty years been a prominent phrenological practitioner in London, and, by his extensive and valuable collection of casts and skulls, essentially promoted the study of our science. Mr Deville died suddenly on the 6th of May, in the seventieth year of his age. We expect to be enabled to publish a memoir of him in our next Number.

The late Mr Henry Haley Holm.—Died on Friday, the 20th February 1846, at Mill Hill, near London, in his 40th year, Henry Haley Holm of Hendon, Member of the Royal College of Surgeons, London.

Mr Holm was articled to the late Mr Drew of the Apothecaries' Company, and completed his medical education at St Bartholomew's Hospital. He was early convinced of the truth of Phrenology, and of its wide bearings on human improvement. He possessed great natural ability and taste for its study, which being combined with easy circumstances in consequence of an inheritance derived from his maternal grandmother, he devoted himself to the pursuit of Phrenology, instead of entering upon medical practice.

He became the resident pupil of Dr Spurzheim, with whom he remained some years, both in London and Paris, and to the formation of whose London collection of casts he largely contributed. He afterwards became the Doctor's assistant in the public demonstrations in Gower Street, London. He was an excellent cerebral anatomist; and, so highly did Dr Spurzheim estimate his talents, knowledge, and zeal, as to make him the special depository of his latest views on the configuration of the cerebral organs in man and the mammalia.

Mr Holm's knowledge of cerebral anatomy, and ability for original research, attracted the attention of Professor Owen, to whom, with his usual frankness, Mr Holm unreservedly communicated the results of his labours. On the death of Cuvier, his mantle fell upon Professor Owen, who, like his great master, is an opponent to Phrenology. Professor Owen, however, rightly estimated the value of Mr Holm's researches on the cerebral anatomy of the carnivora; and, under Mr Holm's sanction, his views of the disposition and functions of the cerebral convolutions of the genus *Felis* were appended to Professor Owen's paper "On the Anatomy of the Chetah," in the first volume of the Zoological Society's Transactions.

The besetting sin of anatomists who are opposed to Phrenology seems

to be, to adopt the phrenological anatomy without acknowledging its source. From Reil (who plundered Gall and Spurzheim, and who appears to have misled many subsequent writers) down to the authors of the *Cyclopædia of Anatomy*, with a few honourable exceptions, anatomical writers have so appropriated the phrenological anatomy.

Mr Holm's ideas on the cerebral anatomy of the chetah and other carnivora, have shared the common phrenological fate of unacknowledged appropriation. It is thought that Mr Holm's ideas on the chetah will be acceptable to the readers of the *Phrenological Journal*. After an elaborate description of the brain of the chetah, Professor Owen says:—

“Of the constancy of the disposition of the convolutions represented by Gall and Spurzheim as characteristic of the brain of the feline genus, I was first assured by our fellow-member H. H. Holm, Esq., lecturer on Phrenology, whose attention has long been directed to this part of anatomy.

“The following note contains Mr Holm's opinions of the functions of the different convolutions in the brain of the chetah, after a comparison of it with the human brain and that of some other animals.

“In the human brain the convolutions of the posterior lobe appear formed in three longitudinal masses, meeting behind, and diverging in their progress forwards.

The internal mass, The middle mass, The external mass,	}	contains—Philo- progenitiveness,	{	Inhabitiveness, Self-Esteem. Adhesiveness, Love of Ap- probation. Combativeness, Destructive- ness, Alimentiveness.
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These masses have very frequent interconnexions, are much convoluted in their course, and have great numbers of subconvolutions.

“In the common *cat* we see the same type prevails, but the masses are simple. The internal mass dilates anteriorly, and forms a large portion of the anterior lobe: the middle one turns outwardly, and joins particularly the external lateral mass, which does not extend farther forwards than about two-thirds of the whole extent of the *cerebrum*: the external or lateral mass is subdivided by two transverse perpendicular fissures into three convolutions, of which, probably, the posterior may be Combativeness, the middle Destructiveness, the anterior Secretiveness and Alimentiveness; these three all unite below.

“The under surface of the anterior lobe is divided by a fissure extending nearly in the direction of the outer margin of the olfactory nerve, as in *man*, in whom the mesial convolution contains Individuality: this in the *cat* may perhaps include other organs.

“The brains of the whole genus *Felis* are similar as to these general divisions, though the convolutions vary as to their relative proportions in each species, and frequently in individuals of the same species.

“In comparing the genus *Felis* with the *dog* tribes, the posterior internal longitudinal mass is much smaller than the middle; and, in the *jackal*, the middle mass is half as much more voluminous as the internal mass; while in most of the *cats* these parts are nearly equal, and in some the

internal preponderates. The posterior division of the external lateral mass (Combateness) is smaller than the middle one (Destructiveness) in the *cats*; while the opposite fact appears in *dogs*. In this respect, the *lion* approaches more to the *dog* tribe than any of the genus *Felis*. —H. H. H.' (Zoolog. Soc. Trans., vol. i., p. 135.)

Professor Owen's paper, "On the Anatomy of the Chetah, *Felis jubata*, Schreb.," with Mr Holm's note, was communicated to the Zoological Society on 10th September 1833.

Mr Holm studied comparative cerebral anatomy with great enthusiasm. He was a Fellow of the Zoological Society; and, residing near the Society's menageries, he had easy access to the collection, of which he availed himself, to study the habits and dispositions of the animals; and, having permission to examine the crania and brains of those which died, his physiological and anatomical researches were rightly carried on.

Mr Holm had the honour of delivering the first course of lectures on Phrenology at the medical school of a British hospital, as a part of its curriculum. This course was delivered at the London Hospital in the session of the year 1832-3; and to Dr Billing, the Professor of Medicine, is due the merit of introducing Phrenology and his friend to that school. It is an interesting circumstance, that the introductory lecture of that course was delivered by Mr Holm on the day that Dr Spurzheim breathed his last, viz., 10th November 1832. In the introductory lecture of the following session, he mentioned the circumstance, and spoke of his great master in a manner most honourable to his head and heart; and the writer of this notice observed tears trickling down several cheeks on that occasion.

Mr Holm's course comprised several lectures on the anatomy of the brain and nervous system, in which his easy, rapid, and delicate manipulation of the brain and nervous tissues did not disturb him in the communication of his extensive and accurate knowledge. His lectures were amply illustrated by casts, crania, and brains. He pointed out the cerebral convolutions which constitute the several organs, described the modifications which the convolutions receive, and compared them together to illustrate their magnitudes, positions, junctions, and interconnexions, with great ability.

In the summer of 1834, Mr Holm suffered a severe illness, from which he had a long convalescence, and was reluctantly obliged to discontinue his Hospital lectures. His health, indeed, never afterwards allowed of long-continued application to study.

The unsatisfactory condition of the London Phrenological Society had induced Mr Holm to withdraw from it. In 1832, he suggested to some personal friends (who had never been connected with the London Phrenological Society) that they should meet weekly, at each other's houses, for the further study of the science. In accordance with that suggestion, six friends (of whom the writer of this notice was one) formed themselves into a private society, and commenced their weekly meetings towards the end of 1832. This society maintained an active existence

for several years. The number of its members was subsequently increased. The society is now extinct. It closed its meetings by its members dining together, and then dissolving it by common consent. Mr Holm is the second of its six original members over whom the grave has closed. Mr Clarke was the first (of whose death, see a notice in the *Phrenological Journal*, new series, vol. v., p. 89.) Both were cut off in the prime of life; both were medical men; and both brought the stores of cultivated minds to the illustration of their favourite science.

Mr Holm was intimately acquainted with both practical and theoretical Phrenology. He has often, in the presence of the society above named, minutely and accurately predicated character from an examination of the brain when removed from the skull, and without having seen the skull. The writer of this notice, in common with others of his phrenological friends, will ever remember with gratitude Mr Holm's kindness and candour in communicating to them his knowledge, and his zeal, single-mindedness, and ability, in together pursuing their common inquiries. His influence in obtaining casts of the heads of distinguished men, many of which he took with his own hands, has been of immense advantage to Phrenology.

At the great attempt, to unite all the British phrenologists into one Association in 1841, Mr Holm reluctantly gave his name. He deemed the materials to be without cohesion, discordant, and, as a society, therefore, self-destructive. He felt there was no safeguard against the manifestation, in the Association, of those qualities, the exhibition of which in the London Phrenological Society had paralysed the efforts of its individual working members, and which have nearly brought it to destruction. He gave his name, but declined taking any part in the Phrenological Association in 1841; and he was not surprised at the results of the session of 1842.

About eighteen months since, he was seized with paralysis, from which he slowly and but partially recovered; and, finally, while engaged in conversation with his wife, he suddenly died.—RD. C.

Dr Robertson's Bequest for the advancement of Phrenology.—Among its items of intelligence, the *Medical Times* of Saturday last gives the following:—"About L.15,000 have been bequeathed to the Phrenological Society of Edinburgh, by the late Dr Robertson of Paris, who died in 1840, and who had taken a warm interest in the subject for nearly thirty years." This might lead persons not acquainted with the details of the matter, to suppose that a large accession of wealth has just been obtained by the Society. Such, however, is not the case, the intentions of the testator having hitherto been frustrated. Dr Robertson (not Robertson), in a correspondence a few months before his death, mentioned that he had entertained an idea of leaving money for founding a Professorship of Phrenology in the University of London; but that, on consideration, he had determined leaving the disposal of his funds to the Phrenological Society. This legacy, although bequeathed six years back, has not yet been forthcoming, and a lawsuit is now pending in Paris, at

the instance of the Society, to compel Dr Verity—the sole executor under the will—to comply with its instructions. This he at present declines to do, on the groundless plea of the non-existence of the Society, and he even repudiates the competency of the French courts to entertain the question at all.—*Popular Record of Modern Science*, March 7, 1846.

Mr Holmes Coote's Researches into the Anatomy of the Brain, &c.—The triennial prize of fifty guineas, instituted by the College of Surgeons of England, for the encouragement of anatomical and physiological researches and discoveries, has just been awarded to Mr Holmes Coote, F.R.C.S., of St Bartholomew's Hospital, and Argyll Street, for an inquiry into the "ANATOMY of the FIBRES of the CEREBRUM, CEREBELLUM, and SPINAL CORD in the HUMAN SUBJECT, together with the ORIGIN of the CEREBRAL, SPINAL, and SYMPATHETIC NERVES, specially illustrated by the anatomy of the same parts in the lower vertebrate animals." The dissertation, which extends to 400 folio pages, and is illustrated by numerous figures, chiefly drawn by the author, is founded on original researches into the minute anatomy of the brain in man, and in various animals of each class in the vertebrate kindgom. Those members of the council who have examined the dissertation and dissections, consider that they constitute highly valuable contributions to our knowledge of an intricate and difficult subject, and are exceedingly creditable to the industry, learning, and ability of the author. We hope, therefore, that Mr Coote may be induced to make public the important results of his labours.—*Lancet*, May 9, 1846.

The late H. T. M. Witham, Esq.—In announcing the death of this estimable phrenologist (vol. xviii., p. 188), we mentioned that, at a meeting held in Barnard Castle shortly after his funeral, to make arrangements for raising a monument to his memory, it was suggested that, as a merely ornamental structure would be but little in accordance with the practical character of the charity of the deceased, an attempt ought to be made to gather by subscription a fund sufficient to erect for the Mechanics' Institution of that town a handsome building, which should be dedicated and inscribed to his memory. We are happy to learn, from the following paragraph in the *Gateshead Observer* of 2d May, that this laudable design has been successful. "THE 'WITHAM TESTIMONIAL,' BARNARD CASTLE.—The commodious and handsome edifice, erected in the market-place as a lasting monument of the late Mr Witham's public spirit and benevolence, and appropriated to the purposes of the Mechanics' Institute, Dispensary, &c., was opened on Monday in the present week. In celebration of the event there was an exhibition of paintings belonging to gentlemen of the district, and of gold and silver racing-plate, lent by Mr Bowes, M.P.; also a fancy bazaar. These gay doings, by which Barnard Castle has been unusually excited and enlivened, were to close yesterday. The receipts of Monday and Tuesday amounted to L.180; and it is probable, that the total profit on the exhibition will free the institution from debt."

Clairvoyance—The offered Reward of L.100.—Upon this subject (as to which, see p. 199 of last Number), the following letter appears in the

Dublin Evening Mail :—" I have little doubt that many of your readers (believers as well as unbelievers in Mesmerism) are curious to learn what has become of the L.100 note which was deposited for six months in the bank of Messrs Ball and Co., which was, according to the terms of the advertisement in the public papers, ' to become the property of any person who, without opening the envelope in which it was contained, should describe every particular respecting the note—such as its number, its date, the bank at which it was payable, &c., and who should read three English words, plainly written on a slip of paper, which was contained in the same envelope with the note. The six months expired on the 31st of March, but the time was extended to the 18th of April, to meet the convenience of a lady, a professor of Mesmerism, and the authoress of an ingenious book on the subject, who arrived from London in the beginning of the month, and who expressed a wish to have some time longer to prepare her *clairvoyance* for the test. Six months and seventeen days having expired, and no person having appeared at the bank to examine the envelope, it was opened on the 18th instant, in the presence of Messrs Ball and Doyme, and one or two other persons connected with the establishment. The note proved to be a printed check (No. 1), issued by the house of Messrs Ball and Co., for L.100, payable to Œdipus, or bearer, and dated the 1st of October 1845. The English words (written on a separate slip of paper) were, ' To Œdipus alone'—a translation from the Greek of the celebrated oracle delivered at Delphi, which committed to Œdipus the difficult and somewhat dangerous task of solving the Sphinx's riddle, on the true solution of which depended the safety of his country and his own life. The result is well known : Œdipus solved the riddle ; the Sphinx, in despair, flung herself from a rock into the sea, and Thebes was saved. Perhaps I should add, that although no person applied at the bank to inspect the envelope containing the note, I received a few communications from different parts of England, and one from America (but none from Ireland), containing mesmeric revelations respecting the number of the note ; and one letter (from Plymouth) enclosed a picture or (intended) *fac simile* of it. It is unnecessary to add, that these mesmerically-inspired persons were mistaken in every particular. All the mesmeric guesses shall appear in a future communication." In No. XIII. of the *Zoist*, Dr Elliotson addresses a letter on this subject to Sir Philip Crampton, whom he accuses of having offered the L.100 with the object of injuring Mesmerism. " But I trust," says he, " no clairvoyant will allow himself to be so tested. Let all remember that you have made the matter unlikely to succeed. The note is folded up, so that one word may be in one fold, another in another, and the words will lie on each other ; and as if the words on the note were not enough, you have added others on a slip of paper, probably folded likewise : on the envelope are more words, through which the words of the folded paper are to be seen, and then, through all these words, the words of the note also lying one upon the other in its folds. You ought to have been contented with writing one or two words, and, not folding them, placing them in a thick envelope. [Would not a *box* be much more satisfactory ?] But why be anxious about clairvoyance,—a mysterious, a comparatively rare and uncertain phenomenon ? Why not ascertain whether the elementary facts of sleep-waking, rigidity, insensibility, &c., are real phenomena ? Why

not ascertain whether Mesmerism prevents pain in torturing surgical operations, and cures diseases for which you are hourly taking money for vain attempts to cure or even alleviate? And why not make all these trials yourself, as Dr Esdaile did?"

These are pertinent questions. Dr Esdaile, here mentioned, is a Civil Assistant Surgeon at Hoogly, who was led, by a reference made to him by a court of law, to pay attention to somnambulism mesmerically induced, and to the effects of mesmerism in curing diseases and producing insensibility during surgical operations. He became perfectly convinced of its great utility in both respects, and has recorded many of his "Mesmeric Facts" in the *India Journal of Medical and Physical Science*, and afterwards in a pamphlet. In perusing the latter, we have greatly admired his candour, straightforwardness, philosophical caution along with boldness, and vigour of thought and expression. Some portions of it may be seen in Nos. XII. and XIII. of the *Zoist*; and we understand that the whole is to be reprinted in England. Surely, in the face of the numerous cases which have now been recorded by competent persons, the mass of our leading medical men cannot much longer persist in dismissing the whole subject of Mesmerism with a sneer.

Alleged Misrepresentation of Dr Spurzheim.—In my last communication, I did my utmost to simplify the subject under dispute, and place the merits of the question within the reach of general readers, however little conversant with foreign languages. Mr Cull, however, in his reply, seems to have adopted tactics quite opposite, and to have studied how he could best deter them from its examination, by exaggerating the difficulties surrounding it. "Comparative grammar," observes Mr Cull, "is a profound study. The comparison of Greek and English time-signs requires more knowledge than can be gleaned from a reference to a paradigm of verbs in an English-Greek grammar. Every Greek scholar knows that the syntax must be studied, in order to know the verbs in their applications as time-signs. And this study reveals to us the Greeks' conceptions of time," (No. LXXXVI., p. 92). And he proceeds to make a most imposing display of the names of the treatises on philology desirable to be studied for the right comprehension and elucidation of the subject in dispute. Let me assure the public that nothing of the sort is necessary.

When I took up Mr Cull's reply, I was certainly surprised to find how very small a portion of it strictly referred to the subject in dispute, and particularly so to see a third part of it occupied by an extract from Virgil's 4th Georgic, with a German translation, exhibiting (to use the words of Mr Cull) "the power, terseness, and flexibility of the German language." Who doubted this? I admire the fidelity and beauty of the translation probably quite as much as Mr Cull; but I confess I think a long Latin quotation and translation quite out of place in a discussion on the comparative grammar of the Greek and French, and the German and English languages; totally incapable, as it necessarily must be, of throwing light upon the question at issue. At the close of this discursive and (so far as my arguments are concerned) evasive reply of *three* pages to my statement of *one*, Mr Cull admonishes me (how appropriately I leave others to decide) for "idly occupying space and time."

Mr Cull observes: "If Mr Prideaux, instead of merely *turning to the*

paradigm of the active voice in an English-Greek grammar, had well studied the Greek time-signs in connection with the Greeks' conceptions of time, he would not have committed himself by writing the fourth paragraph of his rejoinder." This mode of expression, which was selected and employed by me with a view to prevent the public being deterred from examining into the merits of the question at issue, under the supposition that there was anything abstruse in it, seems quite to have misled Mr Cull. I can inform him that, many years ago, when learning the French and German languages, curiosity led me to make the difference in the inflection between these two languages and the Greek an object of particular comparison and study, as a key to the universal principles of grammar; and on the occasion of writing my reply to him, instead of "merely turning to the paradigm of the active voice," as he has chosen to assume, I read all that was written on the Greek time-signs in three of the best Greek grammars extant—a task I might have spared myself, since I found all my previous opinions confirmed, and Mr Cull's very positive assertions contradicted.

I have read with the greatest astonishment the following passage in Mr Cull's article. "Mr Prideaux asserts, that for some of the Greek and French tenses we have no equivalents in English and German, and hence the inferior discrimination of time of the two latter nations. Mr Prideaux, however, has not thought fit to cite an example of a French time-sign which cannot be translated into English or German. Mr Prideaux is an excellent French scholar, and would, no doubt, have backed his assertion with an example, if he could have found one." Strange to say, the paper of mine in answer to which the above extract was written, contained the following challenge:—"frappois cannot always be rendered into English by the present participle and the imperfect tense of the verb *to be* (was striking), and in such cases Mr Cull can no more give English equivalents for the words *frappois* and *frappai*, than he can for *étais* and *fus*." This challenge, it is to be presumed, Mr Cull found himself unable to answer, since he has not attempted to do so.

The question in dispute is comprised in a nutshell. Mr Cull attributed to Dr Spurzheim as great an absurdity as can easily be conceived, from a total misapprehension of the Doctor's meaning. The whole merits of the case were stated in my first communication to the Phrenological Journal on the subject (see No. LXXXII., p. 191), in language the conciseness and clearness of which I despair of being able to improve; and let me add, that the arguments it contained have never yet received but a *superficial* reply.

I begged Mr Cull, in my last communication, to define in what meaning he used the word *equivalent*, and I much regret that he has not done so; for the fact is, that the whole of the *vraisemblance* of his argument is derived from the double meaning which may be attached to this word. Thus, a word may, in common parlance, be said to be *equivalent* to another if it be a perfect substitute for it, in *certain cases*; but it is evident that a *perfect equivalent*, critically speaking, must be a perfect substitute in *all cases*. Mr Cull's assertion, with regard to certain words being equivalent to certain other words, is true only in the sense of the *first* meaning given, whereas his position requires that it should be true of them in

the sense of the *second*, which it is not ; and hence his argument resolves itself into nothing.

I assert that it is an undeniable and notorious fact, that in translating English or German into French or Greek, words in the imperfect tense in the first two languages, such as *schlug* and *struck*, require to be translated into French in some instances by *frappois*, and in others by *frappai* ; and into Greek in some cases by *ευντες*, and in others by *ευντα* ; the two latter languages thus recognizing and discriminating, by different modes of expression, shades of distinction in time, lost sight of and confused together by the former, under the single words *schlug* and *struck*. Does Mr Cull admit or deny the correctness of this statement. Yes or no ?

The next quotation I shall make from Mr Cull, is one which reveals, I may almost say acknowledges, his error ; being, in fact, a virtual abandonment of the point in dispute. " I considered it also necessary to state," observes Mr Cull, " that when the word *struck* occurs in a sentence, we know from the context whether it is the imperfect tense or the aorist. And even those who are entirely ignorant of tense, know as well as we do, whether the word, taken in connection with the rest of the sentence, defines the time of the past action or leaves it indefinite." By the aid of " the context!" and " taken in connection with the rest of the sentence!" Why, otherwise the meaning could not be discovered at all, and it would be impossible to tell which tenses to employ in translating it into French or Greek. What becomes of Mr Cull's assertion, " that the English phrases popularly termed tenses, and the true tenses, together constitute a system of time-signs *equivalent* to the Greek tenses," if we must have recourse to the context in order to discover whether the imperfect tense or the aorist must be used ?

Mr Cull's concluding argument, his grand *cheval de bataille*, upon which he makes his last charge, and evidently, in imagination, leaves me completely *hors-de-combat*, is of such an extraordinary character, that I feel it necessary to quote his own words ; for were I to attempt to give the substance of it, it would infallibly be concluded that I *must* have misunderstood and misrepresented him. " To maintain," says Mr Cull, " that we cannot express in English all the nice distinctions of time which were expressed by the Greeks, is to affirm that some of the conceptions of time which are expressed in Greek authors cannot be accurately rendered into English. And if it be asked, Why ? the answer must be, ' Because we have not the time-signs in our language.' And why have we not the time-signs ? ' Because we have not the conceptions of time which those nice discriminations gave the Greeks.' Now, if the English cannot appreciate those distinctions of time which are found expressed in Greek, how came they to know that they are expressed in the Greek ? &c. . . . It appears to me that such a Greek word would be to Englishmen a mere empty sound," &c. That what " we cannot express in English" " cannot be accurately rendered into English," is a proposition upon which discussion would be somewhat superfluous. Omitting the next, as equally self-evident, we come to the question, " And why have we not the time-signs ?" with its answer, " Because we have not the conceptions of time which those nice discriminations gave the Greeks." Passing over the error of attributing the mental peculiarities of the Greeks to their language, instead of the language to the mental peculiarities, let us inquire

by what process of ratiocination Mr Cull arrives at the conclusion, *that because the English have a smaller number of time-signs than the Greeks, therefore they are incapable of appreciating the distinctions of time expressed in the Greek.*

Nations, in the formation of their languages, have adopted the method of varying the sound of the simple idea or root to denote certain peculiarities pertaining to it, which they have deemed it important to discriminate. When one nation omits to vary a sound to discriminate a peculiarity marked by such variation in the language of another, it does not indicate that the former nation is *incapable* of comprehending the peculiarity, but simply that it has not judged its discrimination *essential*.

Most languages have only two numbers, the *singular* and the *plural*; the Greeks add a *dual*. There certainly is an extensive system of dualism in the world; we have *two* hands, *two* feet, *two* ears, *two* eyes; there are *two* sexes; the alternations of day and night are presided over by *two* great luminaries, &c.: yet we have not felt the necessity of a dual number; and, though as capable of conceiving duality as the Greeks, our mental constitution has caused us to *take less notice of it*. With regard to the principal domestic animals which surround us, we have separate terms to denote the two sexes; as *horse, mare*; *bull, cow*, &c.: so with some wild animals of chase; with regard to others, however, those with which we more seldom come in contact, as the squirrel, weasel, &c., we have not found it requisite, and have not adopted it; yet no one will contend that we have not as clear a conception of the difference of sex in one case as in the other.

Dr Spurzheim's proposition (and I fully agree with him) is, that "*the spirit of a language proclaims the predominating faculties of a nation.*" He never dreamt of maintaining, that the circumstance of the English and Germans having a smaller number of time-signs than the French and Greeks, shewed them to be incapable of conceiving the distinctions of time appreciated by the latter, but simply that it shewed them to be disposed to regard less attentively minor distinctions of time—a fact he attributed to their organization, or, in other words, to their possessing relatively a smaller organ of Time. And in confirmation of the Doctor's opinion, that the French pay greater attention to time than the English and Germans, I will cite their fondness for chronology, and the fact of their designating their ministries by the date of their installation.

Even supposing I were to concede to Mr Cull, that, at the period of the formation of the English and German time-signs, these nations were absolutely incapable of conceiving the distinction of time denoted by the extra time-signs of the Greek and French, his extraordinary argument would derive no support from it. For as nations progress in civilization, may not, or rather do not, their ideas become more numerous? and do they not increase the number of words in their language to supply their wants? Is there any more difficulty in comprehending that Vosz, or any other German or Englishman, may understand the true signification of Greek time-signs, which he may, nevertheless, be unable to translate into his own language, than in comprehending how we English understand the precise import of the French words *empressement, ennui, mauvaise-honte, naïveté*, before we incorporated them into our own language, and when we were unable, as, in fact, we still are, to translate them?

I might yet examine Mr Cull's argument under another point of view, and shew the fallacy of affirming of each member of a nation individually, what, even according to his own erroneous deductions, he is only warranted in predicating of the genius of the nation taken collectively; but I deem such a course unnecessary: in fact, nothing but the great confidence and self-complacency with which these arguments were propounded by Mr Cull, has induced me to spend so much time in their consideration, for I confess they appear to me too absurd to deserve serious consideration.

T. S. PRIDEAUX.

SOUTHAMPTON, *March 2. 1846.*

[We trust that this controversy (which, ably conducted and interesting though it has been, is now sufficiently protracted) has at length reached its close. If Mr Cull shall think any explanation necessary, we beg him to be very brief. As the remarks of Dr Spurzheim which have occasioned the discussion are differently understood by the parties, we here reprint them, in order that all may judge for themselves. "The languages of different nations," says he, "present fine examples of modifications produced by the mutual influence of the faculties. I even admit as a principle, that the spirit of its language proclaims the predominating faculties of a nation. I have spoken of a faculty which learns and knows the signs invented by the superior intellectual faculties, to express the feelings and ideas. It is evident, therefore, that a nation with many feelings or ideas must have many signs, and that the number of any one kind of these indicates the energy of the faculty they represent. Thus, the Greek and French languages have a greater number of tenses than the German and English." (*Phil. Prin. of Phren.*, sec. vi., ch. i.)

Had Mr Prideaux specified at an earlier stage of the controversy the meaning which he attributed to the last two sentences, it is probable that much discussion would have been saved. To understand fully the merits of the argument, the reader should recur to pages 37, 191, 291, and 364 of vol. xviii., and p. 91 of this volume. Mr Prideaux appears to us to err in supposing that "Mr Cull arrives at the conclusion, that because the English have a smaller number of time-signs than the Greeks, therefore they are incapable of appreciating the distinctions of time expressed in the Greek;" on the contrary, Mr Cull denies that they are incapable of doing so, and maintains (in opposition to what he understands Dr Spurzheim's doctrine to imply), that the comparative paucity of a certain class of time-signs is no proof of want of the capacity. Neither do we think that Mr Cull intends to "attribute the mental peculiarities of the Greeks to their language, instead of the language to the mental peculiarities:" the expression, "those nice discriminations," which he puts into the mouth of an imaginary speaker, must refer to the following passage (No. LXXXVI., p. 93):—"Mr Prideaux asserts, that for some of the Greek and French tenses we have no equivalents in English and German; and hence the inferior discriminations of time of the two latter nations." As we understand the latter clause, it is not an expression of Mr Cull's opinion, but a continuation of the statements of what he believes Mr Prideaux to assert.—ED.]

Head of Lecomte.—"The head of Lecomte," says one of the Paris journals, "has been examined by the phrenologists. It presents the ex-

ternal formation which, according to Gall and Spurzheim, indicates a propensity to murder. The forehead is depressed, the posterior part of the head is strongly developed, and the ears are large."

Letter from Mr J. Boyd.—To the Editor.—Sir,—My attention has been called to a paragraph in the last Number of the Journal, p. 197, purporting to be an exposure of my doings in Aberdeen; and in justice to you, as well as to myself, I feel called upon to expose the misstatements it contains. Your correspondent, who betrays his identity in sundry places, and whose allusion to courtesy and kindness would have been in much better taste had the said courtesy been all on one side, states that my "pretensions" are "flaming." In styling myself an honorary member of the Phrenological Society of Majorca, I pretend to no more than I am entitled, as the subjoined document (which I can shew at a moment's notice) will sufficiently testify. With the circumstances that led to this connection, I acquainted you in a former communication; and knowing of nothing discreditable in these, I intimated my membership in the first of my bills and advertisements in Aberdeen, and in the first alone. I leave those who *have heard* my lectures to judge whether your correspondent's character of them is true: the certificates I have from institutions and individuals tell a very different story. I really wonder how, in the name of veracity, he could say, "We gave him a fair hearing," when he very well knows he was never present at even a single lecture of the course. With regard to my manipulations, his testimony is as much that of *hearsay* as it is with the lectures; and when a person remains five months in one place, and is called upon to examine upwards of 2000 heads in that period, it would be something miraculous if he did not sometimes fall wide of the truth, whatever his qualifications, or however correct he generally may be. An expression that occurs in the first statement of "Mr Smith," recalls the whole circumstances of the case to my recollection; and whether they be extenuating or not, I leave you to decide, when I can positively assert, that on the forenoon of that day I had written above twenty pages of close composition; had been speaking for more than six hours, over the heads of from nineteen to twenty-one individuals, with all the attendant bustle and excitement. This must be allowed to have been no joke to a person of a sanguine-nervous temperament. After all were gone, in came the "ubiquitous worthy" and his friend, and Mr Smith must be examined under pain of high displeasure. However exhausted, an attempt—not very satisfactory—is made to get at his character; and after the graduation of the organs, the pair retire. A week or two subsequently, the friend calls, stating that Mr Smith wishes to have the estimate of character written out from his chart. It appears inconvenient for him to call, to give me an opportunity of correcting my first impressions; there are the figures, and I must make the best of them. Now, is it at all disgraceful or wonderful that some differences should appear between this and an estimate drawn out under more favourable auspices?

As to the cast of the skull of Mrs Humphrey, I am really at a loss to know what fault your correspondent could find with such a truism of a remark, that it was impossible to find any indications of the temperament from such a cast. Nor does he appear warranted in expecting, that we should be able to decide accurately in all cases as to the sex. No doubt,

by attending to the remarks of Gall (*Fonctions du Cerveau*, tom. i., cap. iii., par. 5) and to Spurzheim's observations (*Phrenology in Connection with Physiognomy*, section i., chap. iii., p. 41), we may, in a majority of instances, predicate sex with correctness; but to deny that there are exceptions to their rules, is downright quackery. If your correspondent will send a cast from his cast to the Edinburgh Society, they will have an opportunity of deciding whether it be not one of these; and also whether my conviction that Causality and Constructiveness are under-stated, and some of the minor intellectual organs are too large, in his report, be well-grounded or not. He might with justice have objected to my statement, "that violence would not be agreeable to such a character," if she had been executed for beating out the brains of her victim with a poker, or used brute force in the murder, in place of "slipping in her stocking-soles" to pour sulphuric acid into his open mouth. If he examines the skull of Haggart narrowly, he will find in it an evidence that moderate Acquisitiveness, in the absence of Conscientiousness, is no guarantee against furtive propensities; and that I am not so very far wrong in believing, that if the party had once *lost caste*, and were in necessitous circumstances, scrupulosity in relieving these wants would not be evinced. I say nothing as to the greater ingenuity than ingenuousness displayed in dragging forward everything that had the slightest appearance of awkwardness, and entirely overlooking what tallied exactly with the character.

The practice of outlining skulls is nowhere recommended in the standard works on the science, and I always found it most advantageous to letter the centres of the organs in the manner adopted by Dr Spurzheim, in the plates at the end of the first volume of his "*Phrenology*," and, consequently, dreamed as little of drawing the margins on a skull with a pencil, as of outlining the living head with lunar caustic, till your correspondent asked me to map out the cranium preserved in judgment against me, one afternoon, after I had bade him goodbye, before hurrying off to an engagement.

I am greatly obliged to your correspondent for the publicity he has given to my tariff of charges, and beg to inquire of him, if the people of Scotland generally, and particularly the Aberdonians (whose character is graphically portrayed by Mr Combe, at page 360, 2d vol. of the *System of Phrenology*, 5th edition), are likely to make an increasing demand, at these prices, for the "sense or nonsense" of one who has only "flaming pretensions" and "newspaper paragraphs" to recommend him; or how the "fitting" process could be carried on in my manipulations, when, in the great majority of cases, the parties examined sit still, hear all I have to say, perhaps ask a question or two, and depart without making any remarks, unless about the weather? In answer as to my puffing and billing capabilities, all I have to say is, that of all the numerous candidates for public favour that were in Aberdeen during last winter, my accounts for bills and advertisements were the least; that to no newspaper paragraph or certificate in my possession did I make the slightest allusion in them; and I hereby offer to pay to your correspondent sixpence for every letter of every self-laudatory word he can prove to have occurred in any bill or advertisement issued by me while in Aberdeen. From the great kindness and liberal encouragement I received from the Aber-

donians, I felt myself bound in duty to give fair warning before I left them, and, consequently, shall never consider my double intimation of leaving an unpardonable crime. I have the honour to be, Sir, your most obedient servant,
J. BORD.

[We have thought it unnecessary to publish the Spanish document of which Mr Boyd has sent a copy, and the genuineness of which we have no reason to doubt. Mr Straton, who wrote the paragraph complained of, assures us that he *did* hear Mr Boyd lecture. With reference to our own remark on Mr B.'s description of himself as "phrenologist from Edinburgh," that "Mr B. is unknown in Edinburgh," it is proper to explain its meaning to be, that we never had heard of him as a citizen of Edinburgh, and that he was unknown to the Edinburgh public, both as a phrenologist and in every other capacity. That *individuals* in Edinburgh might know him, we, of course, did not intend to call in question; he has sent us the addresses of several, and mentions that he came to reside in Edinburgh in his boyhood, continued to live there, was a householder till the end of 1843, and means to settle there again next winter. We have perused a little manual, printed by him in 1844, under the title of "Companion to the Estimate; being a Phrenological Treatise explanatory of the Estimate of Cerebral Development, by J. Boyd, Phrenologist." It is, on the whole, a tolerably well written and accurate summary of Phrenology; but the author's knowledge of natural philosophy makes a poor figure in the palpably absurd statement (in the section on "Weight,") that, "as the natural law of gravitation is constantly pulling us downward, and we are pressed by the load of many tons of air upon our shoulders," a faculty enabling us to balance ourselves is requisite. If any one were to say, that, as we have a great and equal pressure of air in front and behind, and on each side of our bodies, no balancing power is necessary, the argument would be just as rational as Mr Boyd's. Unless the printer has done him injustice in substituting "*corpora pyramidalia*" for *pyramidalia*, Mr Boyd's scholarship is as defective as his natural philosophy. Some slight inaccuracies and overstatements which we have observed in his phrenological doctrine, are not worth adverting to here. As we personally know nothing about him, and his qualifications may be judged of by any intelligent person who chooses to consult him or attend his lectures, we here take final leave of the subject.—ED.]

Books received.—Report of the Visiting Justices and Medical Officer of the County Lunatic Asylum, Forston, Dorset, 1846.—The British and Foreign Medical Review, No. XLII., April 1846.—The Zoist, No. XIII., April 1846.—Second Annual Address to the Liverpool Mental Improvement Society. By W. B. Hodgson, LL.D. Liverpool, 1846. 12mo, pp. 24.—The American Phrenological Journal, Vol. VIII., Nos. 1, 2, 3, 4, and 5 (Jan. to May 1846).—Amativeness: or, Evils and Remedies, &c. By O. S. Fowler. New York, 1846. 12mo, pp. 72.—Love and Parentage, applied to the Improvement of Offspring. By O. S. Fowler. New York, 1846. 12mo, pp. 143.—The Phrenological and Physiological Almanac for 1846. By O. S. and L. N. Fowler, New York.—The same for 1847.—Prevention, not Punishment, of Crime, the greater Duty of the State; a Sermon preached at Bury St Edmund's. By George Sandby jun. London: H. Baillière. 1846. 12mo, pp. 20.—Annual

Report of the Royal Edinburgh Asylum for 1846.—The American Journal of Insanity for January 1846.—Fourth Annual Report of the Sheffield Phrenological Society, Session 1845-6.—War and Capital Punishment opposed to Christianity. By *Αμφν*. London: Jackson and Walford. 18mo, pp. 23.—Memory and Intellectual Improvement. By O. S. Fowler. New York, 1846. 12mo, pp. 231.—Phrenology considered in a Religious Light. By Mrs John Pugh. London: T. Ward & Co. 1846. 12mo, pp. 208.—The Medical Times, weekly.—The Morning-side Mirror, Nos. 8 and 9.—The New Moon, Nos. 17, 18, and 19.

Newspapers received.—Bolton Free Press, March 28.—Jersey Free Press, April 3.—Belfast Commercial Chronicle, April 8.—Liverpool Mercury, April 24.—Illustrated London News, April 25.—Sheffield Independent, April 18, 25; May 2, 9, 23, 30; June 6, 13; containing a series of articles on "the Connection, Consistency, and Harmony between Phrenology and the Religion of the Bible."—Jersey British Press, May 2.—Gateshead Observer, May 2.—The Cambrian, May 1.—The Welshman, April 24, May 1.—The Friend, Nos. 38 and 39.—Derby Reporter, June 12.

To Correspondents.—Communications have been received from "As-tarte"—Mr James Crambe—Mr Alexander Milne—J. M.—Mr C. Donovan.—Several notices of books, short communications, and articles of intelligence, are unavoidably postponed. We shall endeavour to clear off all arrears in next number.—Mr Braid's long and interesting paper "On the power of the Mind over the Body; an Experimental Inquiry into the nature and cause of the phenomena attributed by Baron Reichenbach and others to a new Imponderable," reached us only a few days ago. He has repeated some of the Baron's experiments without success, and ascribes all the so-called perceptions of the patients to their mental states, induced by suggestion, &c. Now, the effects of suggestion are admitted by all; and we do not think Mr Braid entitled to assume, in the face of what is stated on pages viii., 1, 3, 13, 38, 50, 52, 81, and 101, of Dr Gregory's *Abstract*, that Reichenbach did not take the necessary precautions against being so misled. The *Medical Times* of 13th June contains the first part of Mr Braid's paper, and we presume that the remainder will speedily appear in that journal.

Communications for the Editor (prepaid) may be addressed to Mr ROBERT COX, 25 Rutland Street, Edinburgh. Books or parcels, too heavy for the post, may be left (free of expense) with the London publishers, Messrs Simpkin, Marshall, & Co., Stationers' Hall Court.—Articles intended for the next following Number must always be with the Editor *six weeks before the day of publication*. Communications for the section of "INTELLIGENCE," and also Advertisements, should be in hand at least a fortnight before the same day. Charges for Advertising:—Eight lines, 6s.; twelve lines, 7s. 6d.; every additional line, 6d.; half a page, 14s.; a whole page, 25s. Advertisements may be sent to the publishers in Edinburgh or London.

EDINBURGH, 1st July 1846.

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OCTOBER, 1846.

NEW SERIES.—No. XXXVI.

I. MISCELLANEOUS PAPERS.

I.—*On the Works of Raphael.* By GEORGE COMBE.

In vol. xvii., pp. 113 and 225, of this journal, I endeavoured to explain the application of Phrenology to the Fine Arts; and in the present volume (xix.), p. 42, I published some remarks on the cerebral development and moral and intellectual character of Raphael Sanzio d'Urbino. I propose now to offer a few criticisms on the works of that great artist, founded on the principles and facts stated in these previous communications. Before proceeding to details, however, I beg leave to make a few general observations.

Every spectator sees a picture in his own way, and he perceives its different elements with a degree of vivacity and interest corresponding to the development and cultivation of his own mental faculties. The individual who has a low quality of brain, and little Form, Colouring, and Ideality, will be little affected by beautiful forms and colouring, or even by fine expression; but if he have much Individuality and Imitation, he may be greatly gratified by minute and successful representations of objects with which he is familiar. If another have large organs of Ideality, Causality, and Comparison, with a high temperament, but be deficient in Individuality and Imitation, he may despise imitation as an object of art, and demand grand general ideas, expressed in corresponding forms and colours. A spectator in whom any organ or group of organs is large, will recognize and feel interested in the natural language of that organ or group, as it is expressed in the face and attitudes of the figures. Hence, men in whom the base of the brain, the intellectual organs, and those of

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Ideality, are large, and the coronal region deficient, sympathize with, and delight in, what they call the fine vigorous manly characters of pirates, banditti, boors, and outlaws : they are interested also by pictures representing tortures, slayings, and other horrors of human action and suffering ; while the truest, most lively, and (to differently constituted men) most captivating expression of the moral sentiments appears to them comparatively flat, stale, and unprofitable. If this combination of the organs of the propensities and sentiments be reversed in the spectator, the latter qualities will challenge all his sympathies, while he will turn away with aversion from the former representations. He will possess a tact or instinct, by which he will recognize and appreciate certain moral characteristics, in living man and in pictures and statuary, to which an individual deficient in the coronal region will be nearly blind. The latter may see them, because he possesses the moral organs to some extent ; but his mental sympathies will be as limited as his cerebral development, and his interest will be low in proportion to it.

The same remarks may be applied to the individual organs : Each acts spontaneously when representations of its own objects are presented to it, and then it gives rise to its own emotions and impressions. When the impressions are agreeable, we call the objects beautiful ; when disagreeable, we condemn them as plain or ugly ; and when indifferent, we call them insipid. Hence, most persons have some instinctive taste for the fine arts ; but it is equally obvious how each should form a judgment concerning them in some degree peculiar to himself, corresponding to his own special combination of organs, and his opportunities of mental cultivation. If he be unacquainted with the physiology of the brain, and the mental philosophy of which it is the basis, he will, through the want of definite principles common to himself and others, and also through ignorance of his own peculiar constitution, and of the relations of art to the different combinations of faculties which occur among men, find it difficult to convey to other minds the impressions which he receives from particular works of art, and meet with a corresponding difficulty in understanding fully the foundations of their opinions concerning the qualities which gratify or offend them. His judgments in art will, therefore, be essentially empirical ;—they will be founded on his individual impressions much more than on general or universal principles.

The impressions which objects, and artistic representations of them, make on the different faculties, constitute the elements of that natural pleasure in the fine arts which is com-

mon, more or less, to all men ; but an additional source of interest is derived from the contemplation and appreciation of the skill employed in the execution of works of art. This pleasure, however, is confined to those who either possess great natural talents for art, or have made the technical details of it a subject of study. Any man with a correct eye may tell when a ship exhibits a beautiful model ; but a practical shipbuilder will appreciate many difficulties overcome in attaining the precise forms and proportions which produce its elegant appearance, and he will also perceive in the timber and workmanship many qualities to which the uninitiated eye is blind. In the fine arts, drawing, colouring, and grouping or composition, are the *means* by which the artist's conceptions are ushered into being ; and to turn them to the best account requires special artistical talents, combined with great experience and judgment. The artist, therefore, who has personally competed with and overcome the technical difficulties of drawing, colouring, and grouping, regards a work of art with an initiated eye ; and while the ordinary spectator is impressed only by the work itself, he is deeply interested in the means and skill by which it has been produced. Certain amateurs who have studied the technicalities of art participate in these feelings, and frequently a large share of their admiration of particular statues and pictures is referrible to this source of pleasure, irrespective of the intrinsic merits of the work, as calculated to impress the general faculties of man.

The defects of many treatises on the fine arts, and of many criticisms on pictures and statuary, may be traced to their authors' failing to discriminate and point out the different sources of the interest which they ascribe to the works criticised. The writer praises what pleases, and blames what is disagreeable to himself, too often without assigning a reason ; and not unfrequently when he does mean to give one, it turns out to be no reason at all, but an announcement of a mere impression made on his own mind by the work of which he is treating.

It has been my object in the communications which preceded the present, to apply Phrenology in removing some of these sources of perplexity and error ; and I beg leave to state, in a few words, the point at which we have arrived in our investigations.

Phrenology may be useful, *firstly*, in enabling the observer to distinguish the character of his own mind, and to appreciate its powers and qualities as an instrument of observation and judgment in art. This knowledge may save him from condemning works on which his powers are not well fitted to

decide, and also from supposing that men in general will necessarily approve of all the works which *he* highly admires, seeing that his approval may be the consequence of their relation to a combination of faculties peculiar to himself, or to the class of minds to which he belongs.

Secondly, It may be useful in enabling him to analyse and understand the sources of interest in the fine arts. These are,—

1st, A knowledge of the manipulations necessary to attain success in drawing, modelling, and colouring; and an appreciation of the difficulties which must be surmounted in applying these means to the production of works of art. These constitute the technical elements of art.

2d, The interest which arises from beauty of *form*, as addressed simply to the faculty of Form.

3d, The interest which arises from beauty of *proportion*, as addressed simply to the faculty of Size.

4th, The interest which arises from beauty of colouring, as addressed simply to the faculty of Colouring.

5th, The interest which arises from grouping or composition, as addressed simply to the faculties of Locality and Order.

A work of art may possess these qualities in a high degree, as is evinced by some of the pictures of Andrea del Sarto, and nevertheless be deficient in the last and greatest source of pleasure, namely,—

6th, The interest which arises from the work as a vehicle of expression—as embodying the natural language of human propensity, sentiment, and intellectual power.

This last interest is addressed to the whole faculties of man, and its exhibition is, in my opinion, the highest object of art. It is nevertheless the least understood, and although most prized by men in general, whether cultivated or uncultivated, it is not always the most highly appreciated by artists and amateurs. They are often so captivated by the before-enumerated artistical elements, that they do not miss the latter quality. Farther, in consequence of the want of a philosophy of human nature, the elements which go to constitute this latter interest are not understood. I have stated them to be, *inter alia*, the adaptation of the forms and proportions of the whole figure,—the texture and temperament of the skin and hair, the expression of the countenance,—and the attitude, to the mental character. To accomplish these objects successfully and consistently, the artist requires to be acquainted, not only with the anatomy of the bones and muscles, to which chiefly his attention has hitherto been confined, but with the structure and functions of the brain, of the spinal

cord, and of the nerves of motion and feeling ; with the influence of the size of the lungs and abdominal viscera upon the character of the mind and body : in short, with the nervous, respiratory, and digestive organs, and their functions and relations.

It is by such knowledge alone that the artist will become familiar with the science of art. He will learn by it that each mental faculty has a natural language of its own, which it impresses on the countenance, and exhibits in the attitudes, gestures, and tones of voice of the individual ; that each may exist in a state of quiescence, of normal activity, or of passionate or abnormal excitement ; and that the effect of each must be understood in order to be faithfully rendered in practical art. This knowledge constitutes the alphabet of expression.

Each of these faculties may enter into combinations of activity with one or more of the other faculties, and the expression produced will then be the result of the joint action of the whole ; Self-Esteem, for example, may enter into activity along with Firmness, Intellect, and the Moral Sentiments, and the father, husband, and citizen, may then be seen, as in West's "Return of Regulus to the Carthaginians," calmly and nobly, in all the dignity and grandeur of a great nature, sacrificing self to duty, and redeeming honour at the expense of torture and death. Or the same faculty may enter into activity along with Firmness, Combativeness, and Destructiveness, and manifest itself in all the proud impetuosity, the daring grandeur, and the contemptuous irascibility of Coriolanus. In expression, this corresponds to words and sentences in reading.

Phrenology is to mind what the prism is to the ray of light ; it enables the artist to unravel the threads of these and other mixed emotions, and to recombine them with intelligence and consistency to subserve his own designs. When Sir Charles Bell, in his *Anatomy of Expression*, points out the muscles which are moved in laughing, and those which are moved in crying, he shews only the general apparatus which subserves the proud laugh of scorn, the laugh of triumphant skill, the laugh of gratified appetite, of gratified affection, of wit, of irony, of joy, of humour, of vacant pleased idiocy, and many other modifications of laughter, without giving us one glimpse of the mental faculties and cerebral organs, from the activity of which all these modifications of laughing proceed ; and similar remarks apply to the muscles which subserve crying, and the faculties and organs whence the different modifications of crying arise. In short, Sir Charles Bell has shewn us the bellows by means of which all the pipes of the organ are sounded, and he has told us how they are applied ;

but the pipes and stops themselves, whence the music proceeds, are left by him undescribed. He rejected Gall's doctrine; and without it he could not advance farther towards a knowledge of the real and substantial elements of expression in the fine arts.

Hitherto artists have generally considered art as a practical study, depending on an original mental endowment, which confers the talent of observing the forms, proportions, colours, and expressions, which constitute beauty in nature,—of recollecting them,—and of recombining them in works of art. They have not considered a scientific knowledge of either mind or body, or any deep insight into human nature, as necessary to their success. It appears to me, on the other hand, that this endowment of genius is only the foundation of greatness. The artist never finds the elements which it is his object to recombine, existing pure and simple in the models from which he draws his ideas; the element which he desires to appropriate, be it form, proportion, texture, or expression, is generally mixed up, in nature, with something which he does not want. If he has no scientific knowledge to guide him, he must separate, adopt, and reject, by mere tact; and he runs the risk of omitting some parts that are important to the complete accomplishment of his design, of introducing others which are inappropriate, and of bringing into combination others which are discordant and incompatible. Knowledge of science would carry him to greater depths in his analysis, and give precision and truth to his selections and recombinations. The soundness of these views is strikingly illustrated by the works of Raphael; for in him were united almost every endowment and advantage that seem necessary to constitute the perfect artist, except a scientific knowledge of man; and we shall be able to trace to this defect alone, the most important errors and omissions with which he is chargeable.

Raphael inherited from his father, Giovanni Santi, who was a painter of talent, a predisposition for art. In the Imperial and Royal Gallery at Florence, there is a portrait of the son, when a boy, in a black cap; in the features and expression it is full of grace, gentleness, and beauty. This portrait indicates that his temperament was nervous and bilious, with a slight tincture of the sanguine, and also of the lymphatic. His achievements, moreover, indicate that the *quality* of his brain must have been of a higher order than that which is generally implied, even under these temperaments. At present we are acquainted with no external sign

of that highest of all qualities of brain which, when combined with adequate size, constitutes genius. Whether it consists in an extraordinary development of the grey matter, in a peculiar fineness of constitution, or in some other form of endowment of the brain, we are still uncertain. Be this, however, as it may, Raphael manifested the quality in a high degree. We have seen, also, that his brain was most favourably developed; the regions of the animal propensities, moral sentiments, and intellectual faculties, being all large, while the moral and intellectual portions decidedly predominated. Every desire, emotion, and perception of the human mind, were, by such a combination, placed within his ken. To every impression from without, there was a cord within prepared to vibrate and respond. On carrying our analysis farther, we discover that the special combination of organs—namely, Form, Size, Colouring, Locality, and Constructiveness—which constitute the basis of manual dexterity in art, was amply bestowed on him; while the organs which give expression—Comparison, Causality, Imitation, and Secretiveness—were added to the store. Ideality, and the organ designated by Vimont that of “the sense of the beautiful in art,” were large; so that altogether Raphael had received from nature a rare and rich endowment of qualities, both as a man and as an artist.

In very few respects did he fall short of the highest perfection in which, probably, the nature of man has ever appeared. His brain was moderate in aggregate size, and thus was precluded from manifesting the highest degree of power. The organs of Self-Esteem and Hope, also, were of only moderate size; but this, probably, with his temperament and gifts, was rather an advantage. The posterior portion of Ideality, conjectured to be connected with the emotion of the sublime, and the organ of Number, were also moderate. It is difficult to define the effect of the latter organ in art; and the function of the former is not fully ascertained. I shall offer, therefore, no opinion on the consequences of the moderate development of these two organs, except remarking that Raphael's works are characterized to a greater extent by the quality of the *beautiful* than by that of the *sublime*,—a coincidence which goes, so far, to support the function ascribed to the posterior portion of the organ of Ideality. As a counterpart to these defects, we observe an extraordinary harmony of development in the organs. With the exceptions now mentioned, each stands in the most efficient proportion to the rest; sufficiently large to constitute a well-spring of power within itself, yet not so large as to give an undue prominence to its characteristic qualities.

The results of these gifts are acuteness and depth of feeling and perception, fertility in conception, soundness of judgment, and fineness and grace in execution. The organ of Conscientiousness was particularly large; and it is the source of simplicity, truthfulness, and accuracy, both in thought and action.

The father of Raphael understood and valued art, and appreciated and fostered his son's genius from his infancy. Raphael lost his mother when he was eight years of age, but his father's second wife, Bernardina, "well supplied her place, and loved him and tended him as if he had been her own son." His father, after instructing him himself as far as his own talents enabled him to go, made arrangements for placing him under the care of Pietro Perugino, the most celebrated painter of the age; and although he died in August 1494, before these arrangements were carried into effect, his intentions were faithfully executed by his widow and by his wife's brother, Simone Ciarla, and "Raphael was sent to study under Perugino, in 1495, being then twelve years old."

The hall of the ancient Exchange of the town of Perugia was decorated by Pietro Perugino and his pupils. There is in it a portrait of himself, by himself, in complete preservation; but, owing to the cap which he wears, only the fore part of the head, below Causality, is distinguishable. It is broad and high. Form, Size, Weight, and Individuality, are very large. Eventuality is moderate, and all the other intellectual organs are large. The temperament is two-fifths sanguine—two-fifths lymphatic—one-fifth nervous. The face is fleshy and ruddy, the mouth is firmly closed, and the expression is that of reflection and prudence—the results usually of a large and well proportioned anterior lobe, combined with large organs of Secretiveness, Firmness, and Cautiousness.

The paintings in fresco which he executed in this Exchange and in the adjoining chapel (both small vaulted rooms), are in excellent preservation, and possess the elements of ease, refinement, grace, and dignity. He subsequently painted many worthless pictures, it is said, from the love of money; but it is certain that, in his works in Perugia, particularly in his Madonnas, simplicity, purity, grace, and dignity, are characteristic features. The heads of Christ, of the Apostles, and of the Virgin, painted by him, have the anterior lobe and the coronal region of the brain well developed, and their expressions and attitudes accord with their forms. They are nearly all of the sanguine temperament, resembling that of Pietro himself. Pietro's head seems to have been

large; but the absence of the *bilious*, and the small amount of the *nervous* in his temperament, would render it difficult for him, after the meridian of life, to support his fame by sustained exertions and perennial fire. After that age, the constant tendency of such a combination of temperaments as he possessed would be to lapse into indolence and dulness. In 1494, however, when Raphael became his pupil, he was in his forty-eighth year; and still vigorous. Raphael at first adopted his style, and in many respects could not have had a better instructor. The qualities of simplicity, grace, and dignity, which Perugino embodied in many of his figures, found responsive faculties in Raphael's mind, which gave them back in increased intensity and vigour.

One of the earliest of Raphael's pictures is in the Brera Gallery at Milan; it is named *Lo Sposalizio* (the Espousal of the Virgin by Joseph), and bears Raphael's name and the date 1504. There is about it a certain stiffness of manner and juvenility of expression characteristic of youth; but, in the great elements of composition, drawing, and expression, it shews extraordinary powers and attainments. As Raphael was then only sixteen years of age, and as he, even in this early effort, surpassed his master, and presented results which the most accurate observation and analysis of the human mind and body confirm, we are naturally led to ascribe great importance to the instinctive inspirations of the faculties as the fountains of success in art. The most prominent figure in the picture is the priest, on whose right side stands the Virgin, and behind her five female attendants; on his left, Joseph, and the same number of male friends. Joseph is in the act of placing the ring on the Virgin's finger. The priest is a pure, amiable, dignified character, with a fine combination of vigour with age. All the other figures represent persons in humble life, but they are admirably treated. The head of the Virgin is a perfect model of female loveliness. The anterior lobe is fully developed, the lower ridge and middle-perpendicular portions (constituting the observing and practical organs) predominating. The coronal (or moral) region is large, and of beautiful proportions; the head is so placed as to shew a large development of the organs of Adhesiveness and Philoprogenitiveness, with small Amativeness; and the person, attitude, and expression, are full of corresponding grace, gentleness, intelligence, and purity. She is a woman all over, simple, earnest, and affectionate, with no apparent consciousness of her high destiny. Joseph is a carpenter in the picture as well as historically. In his head the knowing organs predominate, the reflecting organs and Ideality being mode-

rate, and the moral organs well developed. The *ear* is placed high in the head, the external opening of it being on a level with the base of the eye, indicating a small development of Alimentiveness, Destructiveness, and other organs in the inferior portion of the brain. The attitude and expression of Joseph's figure and face correspond with these features. They are pure, but not poetical; there is nothing in the whole figure rising above the character of a carpenter, but it represents a pure-minded, amiable, trustworthy, practical man. Behind him stands an attendant, in whom the moral and intellectual organs are largely developed, and the ear is equally high,—bespeaking the same essential character, but with more reflection; and the countenance corresponds. Raphael has introduced his own portrait as one of the attendants, and he seems at home among the graceful group. The whole figures are earnestly engaged in the scene.

Here, then, we see Raphael in this, one of his earliest productions, following successfully the most important canons of art. Who taught him, for example, to give such a form of head to the Virgin, when the signification of that combination of forms was scientifically unknown? As formerly mentioned, I saw an artist in the act of copying this picture, who, by careless drawing and shading, converted the pure and graceful form of the hind-neck, indicating a small cerebellum, into a thick voluptuous form, expressive of diametrically opposite qualities.* The same artist lowered the position of the ear in Joseph, thereby increasing the size of several organs of the animal propensities, inconsistent with his character, and which Raphael had made small. The head which Raphael here gives to the Virgin is different from that which he bestows on her in the “*Madonna di San Sisto*,” at Dresden; yet both are appropriate. Who taught him to model the head of Joseph in perfect accordance with his character and station? We shall subsequently see that he was not always so successful in adapting the forms of his heads to the characters of his personages; whence I infer that he did not know, as matter of science, the relations between particular forms and expressions; and I am, therefore, led to conclude that his general success arose from his accurate observation of nature, and from that instinctive feeling of adaptation in all her parts, which is borne in upon a highly sensitive and well balanced mind like that of Raphael. His great Conscientiousness, too, while it led him instinctively to love simplicity

* Prints of “*The Espousal of the Virgin*” are common; and the head of the Virgin is well drawn in the cut which accompanies Mrs Jameson's *Memoirs of the Early Italian Painters*, published by Mr Knight, vol. ii., p. 88.

and truth, would render him scrupulously accurate in his representations of what nature placed before him. I can account for his success in this department of art, only by supposing that he selected the purest and the most excellent women whom he knew, as the models of his Virgins, dropping all individual imperfections, and delicately increasing every lineament and expression that he felt to be pure, elevated, and divine; and that he followed similar rules in regard to this and other characters. We are informed that this was Leonardo da Vinci's mode of study; and he approaches closely to Raphael in the same admirable adaptation of the forms of his heads to the characters and expressions of his figures.

The young artist should learn from this not to transfer the forms and expressions of a low model into a picture representing high characters. Rubens has often sinned against this rule. In the Museum at Antwerp there is a picture by him (No. 74 of the catalogue), entitled, "The Trinity—Christ lying dead in the arms of the Father;" in which the anterior lobe of the Father is broad and full, but not high, the coronal region is flat and broad, and the base of the brain is large—indicating a low, sordid, and cunning character, full of worldly prudence, but a stranger to every great conception and elevated emotion. The expression of the countenance so exactly corresponds with this character, that on seeing it I was led to infer that it was a portrait. What sort of man would Raphael have chosen as his model of the Father? His works enable us to answer,—The highest and the purest that nature presented. Not so Rubens. Being deficient, as he apparently was, in that highly developed coronal region which distinguished Raphael, he was deficient also in the instincts which it communicates, and did not recognize the significance of the forms and expressions which he used. He selected *his own grandfather* as his model, and deliberately transferred him to the canvas, with all his earthliness unmitigated, as the representative of God! This is proved by the acknowledged portrait of his grandfather, under the character of Time, painted by Rubens himself, for his own tomb in the church of St Jacques. Well might Sir Joshua Reynolds remark of this picture, that it presents "an unimpressive and irreverent representation of the Deity, under the figure of an old man."

The characteristics which Raphael, in this early picture, bestowed on the Virgin, are never lost sight of in his subsequent representations of her, which are very numerous. He does not repeat the same forms and expression in his different Madonnas, but he uniformly observes the same great

principles. In none of them, that I have seen, is there a large base of the brain, or a trace of sensuality in the expression; in none of them is the coronal region or the anterior lobe deficient; and in none of them is there a want of female delicacy, loveliness, and grace, or of intellectual dignity and weight of character. This fact is the more interesting, because it cannot be predicated of all other great painters, and also because Raphael's mistress, "*La bella Fornarina*," although occasionally introduced as a spectator in his pictures, is never to be discovered in any of his Madonnas; and for the best of possible reasons—she was an earthly woman, and Raphael seems to have instinctively felt her unsuitableness to represent a high character. Portraits of her are extant, which shew beautiful forms, but with a substratum of sensual feeling, which at once consigns her to an inferior rank in art as well as in morals. His "*Madonna di San Sisto*," universally known by prints and copies, is a wholly different being from the Virgin in the "*Espousal*;" nevertheless she possesses all the high qualities which belong to her character. One grand difference consists in a large addition to the upper part of the forehead in the Dresden picture, giving greater intellectual depth and gravity to the countenance; accompanying which we find a corresponding increase of seriousness and reflection, of solidity and weight of mind, thrown into the countenance, while all that is feminine is still beautifully preserved. Her age, also, is increased. In the "*Madonna di Foligno*," in the Vatican, the figure is again varied, but still it is full of grace, repose, and dignity. The Virgin and the other figures in this picture are so natural that they actually seem to live. A little angel in front is a perfect gem of sunny and ethereal, yet substantial and chubby beauty.

As a contrast to Raphael's Virgins, we may contemplate one by Murillo. In the "*Stanza di Apollo*" in the Pitti Palace at Florence (No. 39 of the catalogue), there is a picture by this artist representing the Virgin with the infant Jesus in her lap. She is superior in all her qualities to the generality of Murillo's female characters. Her forehead is of ample, yet natural size, her organ of Benevolence is high, her features are small, and her complexion fine—all attributes of an elevated character. He has desired also to communicate to her a moral and intellectual expression, but has not fully succeeded. The face across the cheek-bones is too broad, and the chin and mouth are too small in proportion to this breadth for perfect beauty; while the expression of the countenance is so indefinite and mixed that one cannot give a name to it. Although she is refined and good, she is anxious and

ill at ease ; and instead of displaying the quiet gravity which in nature accompanies high moral and intellectual qualities, she looks slightly bewildered. In short, Murillo appears to have striven to embody sentiments which he did not feel, and reflecting powers which he did not comprehend. The infant Jesus is well drawn, and the forms and proportions of his figure are natural ; but his expression also is anxious and discontented. A portrait of Murillo which I met with, shews a less development of the organs of reflecting intellect, and smaller moral organs, than those possessed by Raphael, with large organs of the perceptive faculties and the propensities. He understood well, and represented admirably in his pictures of vulgar life, the repose of the propensities ; but the harmony and beauty which accompany a large and well proportioned development of the moral and intellectual organs seem to have been much less familiar to him—perceived to some extent by his intellect, but imperfectly realized by his consciousness. One of the highest productions of Murillo's pencil which I have seen, is his "Holy Family," No. 13 in the National Gallery of London. In it Joseph has a fine moral and intellectual head, and corresponding expression. The forms of the infant Jesus are simple and childlike, yet refined and dignified ; while the Virgin is pure but cold, and the coronal region of her head is flat, in perfect harmony with her frigid looks. I infer that he succeeded in Joseph because he had met with a high model ; and failed in the Virgin, because in representing her he either drew from an inferior model, or invented forms corresponding to her character, such as it was conceived and felt by his own mind, which wanted the high qualities that guided Raphael in his embodiment of female excellence.

The progress of Raphael's mind, from the undeveloped strength and immaturity of judgment which accompany youth, to the full blaze of manly vigour, may be traced in his pictures. "The Crowning of the Virgin," an oil-painting in the Vatican,* is one of his early productions. We see in it his genius and grace, but they emit comparatively feeble rays when contrasted with his maturer works. There is an almost boyish playfulness of fancy about it, and some careless drawing, marking the unformed artist. Some of the Angels, for example, have only heads and wings, while others, to whom bodies have been given, are playing on the common musical instruments of the day, and hovering round the Virgin and her Son in the act of serenading them. The head of Christ

* Il Vaticano descritto ed illustrato, vol. vi. Tav. 71.

is much inferior in form and expression to its style in his later works, while the Apostles who stand round the open sarcophagus are graceful but juvenile and wonder-struck men. Some of them have well-formed heads, but smooth inexpressive cheeks, deficient in that mental life and character which accompany well-formed and active brains.

In the Doria Gallery, in the Corso of Rome, there is (No. 26) a "Deposition from the Cross" by Raphael, said to have been painted when he was twenty-four years of age, and to be the first of his works "in which an historical subject is dramatically developed." It bears evident marks of a mind that had not attained its full vigour. The colouring, though soft and harmonious, is rather feeble, and the grouping is defective in ease. The expression of nervous life and energy is deficient, and, consequently, there is a want of thought and emotion in the characters. The figure clothed in blue drapery supporting the shoulders of Christ, and another with a light-yellow fold over his right shoulder, standing between the female figures, are the highest in point of mental energy.

To proceed with a minute criticism of Raphael's works would far exceed both the space allowed me, and my own ability. The object of the remarks now and to be subsequently offered, is merely to illustrate the principles of criticism in the fine arts which were stated in my letters from Rome, referred to in the commencement of this article; and I shall confine my future observations to some of his greater works.

II. *On the Circulation within the Skull.**

The circulation within the cranium possesses several peculiarities, which not only excite the attention of the anatomist, but are constantly referred to by the physiologist and pathologist, in their discussions upon the functions and diseases

* This article is extracted from a review of Dr George Burrows' recent work *On Disorders of the Cerebral Circulation, and on the Connexion between Affections of the Brain and Diseases of the Heart*, in the *Edinburgh Monthly Journal of Medical Science* for August 1846.—The reviewer says that "this work, as a whole, reflects credit upon the author, and exhibits considerable talent and much professional information. If, therefore," he adds, "in any of the strictures we shall have occasion to make upon his views of the circulation within the cranium, we should criticise sharply particular statements, and should make use of any expressions which may appear depreciatory of his judgment or his reasoning powers, we beg our readers to attribute this to no want of personal

of the important organ there contained, viz. the encephalon. The derangements of the circulation within the cranium are so often followed by such serious consequences, that it becomes an object of the highest practical importance to endeavour to ascertain the nature and cause of these derangements; and, of course, the first and indispensable step, in an investigation of this kind, is to obtain an accurate knowledge of the manner in which the circulation is carried on in the healthy state. There is no one organ in the body, upon the healthy or diseased states of which the medical man is so often required to decide, as the encephalon, and there is none upon which more serious errors are committed in this respect—errors not only involving the reputation of the practitioner, but, what is of infinitely more importance, exercising an influence upon the momentous consequences of innocence or guilt, of acquittal or punishment.

There are certain peculiarities of the circulation within the cranium, connected with the distribution and structure of the arterial and venous systems, which are passed over by Dr Burrows; and he proceeds at once to a close and searching examination of that peculiarity of the circulation within the cranium first pointed out by *Monro Secundus*, tested experimentally by Dr Kellie of Leith, and ably illustrated by the late Dr Abercrombie. The views adopted by these able men were, that the cranium forms a spherical bony case capable of resisting the atmospheric pressure, and the only openings into it are the different foramina, by which the vessels, nerves, and spinal cord pass. The encephalon and its membranes, the blood contained within the vessels, the serous fluid secreted from the inner surface of the arachnoid, and a small part of the cerebro-spinal fluid placed between the outer surface of the arachnoid and the *dura mater*, fill up completely the interior of the cranium, and no part of these substances can be dislodged from the interior of the cranium without some equivalent taking its place. For example, since the walls of the cranium resist perfectly the effects of atmospheric pressure, not a drop of blood would flow out from it through the internal jugular veins, unless a corresponding quantity passed into it through the arteries, or some other fluid by another channel, or unless there was an expansible substance

respect, nor to any intention of parading his shortcomings, but to our desire to inculcate stricter habits of thought, and more accurate methods of investigation, than are commonly found among our professional brethren. In analysing closely the matter contained in most treatises on practical medicine, facts and opinions are with difficulty separated from each other, and no satisfactory evidence can be found of the existence of truths upon which important inferences are founded."

within the cranium to occupy the room of the fluid expelled (but there is none such); for the pressure of the external atmosphere, acting upon the soft parts which cover the jugular veins, would effectually prevent its escape. It is perfectly impossible to empty a jar, or any vessel similar to the cranium, with unyielding walls, filled completely with water, or any other fluid or solid material, without the atmospheric air or some other substance taking its place. This is a law in pneumatics so familiar to all, that it stands in need of no illustration. We believe that the same kind of reasoning applies to the spinal canal; in fact, we may consider the spinal canal and cranium as forming one large cavity, which cannot be diminished by atmospheric pressure. Admitting that a quantity of the cerebro-spinal fluid can be forced from the spinal canal within the cranium, by an accumulation of that fluid within the spinal canal, or by an increase of the blood either in the spinal arteries or veins, a proportionate quantity of blood must be pressed out of the vessels within the cranium, and the result would be the same as if serum had been effused from the cerebral vessels themselves. Since the substance of the brain and its membranes are incompressible, at least by any force which may be exerted upon them by the heart, and as the blood contained within the vessels must also be incompressible by the same force,—it follows, that at every stroke of the heart, when a certain quantity of blood is driven into the interior of the cranium along the arteries, an equal quantity must be dislodged through the veins, provided that no change has, in the mean time, occurred in the quantity of the other parts placed within this cavity. We may here state, that, though fluids are not absolutely incompressible, yet it requires the weight of one atmosphere, or fifteen pounds on the square inch, to produce a diminution equal to $\frac{1}{30000}$ th part of the whole. Now, this is so exceedingly small a change upon a mass equal in bulk to the brain, as not to be appreciable by our senses; and as we are not reasoning as mathematicians or natural philosophers upon 20,000th parts, but as physiologists and pathologists upon sensible quantities, we may fairly proceed upon the supposition that the action of the heart can produce no change upon the quantity of fluids within the cranium; for the heart, in its most violent contractions, cannot exert a pressure equal to one atmosphere, or, in other words, produce a diminution equal to a $\frac{1}{30000}$ th part. Under ordinary circumstances, the pressure upon the inner surface of the bloodvessels may be between 3 lb. and 4 lb. on the square inch; and this may perhaps be increased to 10 lb. or 12 lb. during a very violent exertion. Dr Bur-

rows argues, in opposition to this doctrine, as follows, in page 35 :—" Atmospheric pressure is undoubtedly exerted on the blood in the vessels entering the cranium. This pressure, by a well ascertained law in hydrostatics, must be transmitted in all directions through the fluid blood, and hence to the blood and other contents within the cranium. If, in the natural state of the parts, the brain is defended from atmospheric pressure, should we not expect to find the functions of that organ disturbed in some way when part of the walls of this sphere is wanting? But in children with open fontanelles, and in adults who have lost part of the bones of the cranium, we observe no peculiar disturbance of the functions of the brain from this gap in the walls of the imaginary sphere." We, for our part, would never expect any disturbance of the circulation within the cranium under the circumstances mentioned by Dr Burrows; and we should have wished to learn the grounds on which he founds his expectations. Dr B. correctly points out how the atmospheric pressure is exerted, through the blood entering the cranium, upon all parts of the brain; and the removal of a portion of its osseous case, so as to allow the external air to press upon its outer surface, would not alter the amount of pressure upon the whole brain; it would only alter the manner of its application. Dr B. goes on to say, " But, lastly, the effects of gravitation on the fluid contents of the cranium, and the effects of the cupping glasses, which will draw blood from the vessels of the dura mater, causing ecchymosis there, assure us that the cranium is not a perfect sphere in the sense in which it has been supposed." We shall examine the effects of position on the fluid contents of the cranium in a subsequent part of our remarks on this subject; and with regard to the alleged effects of the cupping-glasses upon the circulation in the vessels of the dura mater, we must express our entire disbelief. If this statement were true, the application of cupping-glasses over the scalp in meningitis would greatly aggravate the disease; but we do not rest our denial of its accuracy upon this ground.

Dr Kellie* made several experiments on sheep and dogs to ascertain the state of the vessels within the cranium after a fatal hæmorrhage, and these were varied as much as possible to avoid sources of fallacy. Some of these animals were bled to death by opening the carotids or femoral arteries, others by opening the jugular veins; in some, the carotids were first tied to diminish the quantity of blood sent to the

* *Medico-Chirurgical Transactions of Edinburgh*, vol. i.

brain, and the jugulars were then opened, with the view of emptying the vessels of the brain to the greatest possible extent; while in others the jugulars were first secured, to prevent as much as possible the return of the blood from the brain, and one of the carotids was then opened. The inference of these carefully performed experiments we give in his own words: "That we cannot, in fact, lessen to any considerable extent the quantity of blood within the cranium by arteriotomy or venesection; and that when, by profuse hæmorrhages destructive of life, we do succeed in draining the vessels within the head of any sensible portion of red blood, there is commonly found an equivalent to this spoliation in the increased circulation or effusion of serum, serving to maintain the plenitude of the cranium."* Dr Kellie also adduced the results of experiments upon the effects of position, immediately after death, upon the quantity of blood within the cranium,—and the appearances observed within the cranium after death from strangulation or hanging,—in favour of the truth of the doctrine we are illustrating. With the view of obtaining more satisfactory evidence on this question, he first removed a portion of the unyielding walls of the cranium in some animals by means of a trephine, and then bled them to death; and the differences between the appearances of the vessels of the brain in these cases and in those where the cranium was left entire, were very great. One of the most remarkable of these differences was the shrunk appearance of the brain in those animals in which a portion of the skull was removed, and the air allowed to gravitate upon its outer surface. In describing the appearances of the parts within the cranium of the first of the three animals trephined, he says, "The brain was sensibly depressed below the cranium, and a space left, which was found capable of containing a tea-spoonful of water."

Dr Burrows, in the work before us, endeavours to shew that there is no such peculiarity in the circulation within the cranium as has been contended for by Drs Monro, Abercrombie, and Kellie; and this he attempts to do by appealing to the result of some experiments, neither so varied nor so extensive as those of Kellie, performed by himself; to various anatomical facts; and to pathological and physiological observations, collected by himself and others. The following quotation (p. 33) contains a summary of the conclusions at which he has arrived:—

"(1.) It is maintained, that when hæmorrhage takes place from the

* *Opus cit.*, p. 123.

general system, it does not affect the quantity of blood in the brain. The experiments I have performed lead me to the opposite conclusion.

"(2.) Posture of the body after death is said not to affect the quantity of blood within the head. My experiments shew that posture has a most striking influence on the quantity of blood in the cerebral vessels.

"(3.) It has been attempted to prove, that when individuals die of asphyxia or apnoea, there is no excessive congestion of the cerebral vessels. Numerous observations shew that, in the different kinds of death by apnoea, there is great congestion of the cerebral vessels, and that where it is absent it may be accounted for on anatomical and physical principles.

"(4.) It has also been attempted to prove, by an algebraical equation, that if the quantity of blood be diminished in one system of cerebral vessels, it must be increased in the other vessels. In reply to this, I have shewn that the results of experiments negative this conclusion. The error lies in the false assumption of the elements of which the equation is formed. It is also clear that there may be variations in the quantity of blood in one set of cerebral vessels without affecting the condition of the others, because the quantity of extra-vascular serum in the cranium will accommodate itself to the varying states of the bloodvessels."

The first proposition, viz. "that when hæmorrhage takes place from the general system, it does not affect the quantity of blood in the brain," stated in the above quotation to be laid down by those who contend for the peculiarity in the circulation within the cranium which we are discussing, instead of being a correct embodiment of this part of the doctrine, *is an actual misrepresentation of it*; and in proof of this averment, we need only refer to the quotation given above from the papers of Dr Kellie. It is there distinctly admitted, that we may succeed in draining the vessels within the cranium of part of their red blood; but he adds, "There is commonly found an equivalent to this spoliation in the increased circulation or effusion of serum serving to maintain the plenitude of the cranium." Besides, it is asserted by no one, as far as we are aware, that the quantity of blood in the *brain* may not undergo variation from slighter causes than extensive hæmorrhage; for, *according to the supporters of this doctrine, the relative quantities of blood in the vessels of the encephalon, and in those external to it, may and do undergo alteration*. The proposition, to be correctly stated, should have been in this form: "That when hæmorrhage takes place from the general system, it does not affect the quantity of *fluids* within the *cranium*." With regard to the criticisms made by Dr Burrows upon Dr Kellie's experiments, and the result of his own, we may make the following remarks. That the vessels within the cranium should appear to be less filled with blood, as observed by Dr Kellie in some of his experi-

ments, after the animals had been bled to death, than in those killed by a dose of prussic acid, is easily explained. It is a well known fact, that when an animal is bled to death, the blood last drawn is more serous, or, in other words, has fewer red particles in it than in that first drawn; and when means are not taken to prevent the free circulation, and, consequently, the frequent renewal of the blood within the cranium during the time the animal is bleeding to death, the vessels of the brain must necessarily appear less injected after death in an animal that has been killed by hæmorrhage from a single artery, though they may actually contain the same amount of *fluid*. Some slight differences between the relative injection of the vessels of the encephalon in a sheep bled from the carotid, and one bled from the jugular vein, may be explained in the same manner. When the carotid artery has been opened, the quantity of blood sent to the brain must be diminished, and the quantity returning from it by the veins must also be diminished; and, consequently, the blood within the cranium must be less frequently changed than when an animal is bled to death from the jugular, where there is nothing to diminish its free circulation through the vessels within the cranium, except what arises from the decreasing supply caused by the hæmorrhage. Besides, the blood flows somewhat more rapidly from the carotid than from the jugular, and the circulation of the blood is therefore more quickly arrested.

Dr Burrows admits that he found the brains of sheep slaughtered by the butchers much less depleted than the brains of rabbits which have died by hæmorrhage (p. 14). In the former, as both carotid arteries and jugular veins are generally divided, and the animals also soon bleed to death, the cerebral vessels should, according to the view we have expressed above, appear to contain more blood. Dr B., however, explains the difference, by asserting that "those sheep did not die from simple loss of blood; but partly from division of the pneumogastric nerves and cervical portions of the spinal cord." If the cervical portion of the spinal cord be divided, we presume the vertebral arteries are also divided; and if the pneumogastric nerves be divided, we presume the carotids and jugulars are also cut across; and if all the arteries and veins leading to and from the interior of the cranium be severed, what possible influence can the division of the pneumogastric and cervical portions of the spinal cord have in producing the effect assigned to it? Admitting that some of the vessels enumerated above were not divided, we deny that Dr B. could adduce physiological data to shew that

simple division of the spinal cord and pneumogastric nerves would diminish the extent of the hæmorrhage, when such large vessels are cut across, as is done in slaughtering sheep. Let him analyse the known effects of such injuries upon the heart's action, and then reflect upon their probable influence under such circumstances. In the disease termed anæmia, as the cases described by Hallè in the "Dictionnaire de Médecine," by Dr Combe and by Dr P. M. Latham, and in individuals bled to death from repeated hæmorrhages, as detailed by Dr Marshall Hall, when the blood of the body is not only deficient in quantity, but also in quality, or, in other words, contains not only absolutely, but relatively, much less of the coloured part of the blood, and is more serous than natural, the brain, when examined after death, appears paler than usual. But does the cranium contain a smaller quantity of fluid? It would appear not; for, according to all the accounts given of those dissections, the vessels of the brain were always well filled, and have been sometimes described as congested, and never presented the shrunk and pale appearance observed by Dr Kellie in the brains of animals bled to death, after a portion of the skull had been removed by a trephine.

That the bloodvessels within the cranium may appear better filled with blood, as in Dr Burrow's experiments, in an animal suspended by the heels immediately after death, than when suspended by the ears, though the quantity of blood in the vessels be the same, may also be explained. If the blood remain for some time fluid after death, the red particles being heavier than the liquor sanguinis, will gravitate to the depending parts, and, consequently, the vessels within the cranium will contain a larger proportion of red particles, and will be more distinctly seen, than when filled with a blood less abundant in red particles. It must further be remembered, that there is a great deal of vagueness in the use of such terms as "congestion of the bloodvessels within the cranium," and that we have no certain methods of ascertaining the normal quantity of blood in any of the organs of the body in individual cases. Every one must be satisfied, who has been much engaged in *post-mortem* examinations, that the organs of the body contain naturally more blood in some individuals than in others, and this cannot always be explained by any particular kind of constitution or form of body. The difference in the quantity of blood found in the vessels of the encephalon, is sometimes very considerable in different persons, who had apparently died under nearly the same circumstances. There being a greater quantity of blood in certain vessels within the

cranium, is of course no proof that there is actually an increase in the whole; for suppose that the vessels on the surface were more injected with blood than usual, there may be less in some of the other vessels within the cranium,—a condition of the circulation which is quite in accordance with the doctrine, that the external surface of the encephalon is exempt from the influence of atmospheric pressure, as long as its osseous case remains entire. Besides, it ought to be remembered, that, in attempting to judge of the quantity of fluids within the cranium, the venous sinuses ought invariably to be examined. When, therefore, there are so many sources of fallacy in judging of the quantity of fluids within the cranium, we would, with all submission, suggest to Dr Burrows a doubt, whether the few experiments he performed entitle him to dogmatize so positively on this question; the more especially as they are at variance with the carefully conducted experiments and observations of other competent investigators.

We are very far from being satisfied of the truth of the remarks already quoted from Dr Burrows, that “numerous observations shew, that in the different kinds of death by asphyxia or apnoea, there is great congestion of the cerebral vessels, and that where it is absent it may be accounted for on anatomical and physical principles;” and we feel convinced that this conclusion is not justified by the facts adduced by Dr B. himself in support of it.

Certainly, if any circumstance could produce congestion of the vessels within the cranium, it would be that of death by hanging; for then the vessels, more especially the veins going to and coming from the brain, are compressed and then obstructed, except the vertebrals, which are protected by the peculiarity of their course through the foramina of the transverse processes of the cervical vertebræ. Those two arteries must continue for a time to force their blood upon the brain, while a comparatively small quantity only can escape by the veins; for the greater quantity of blood carried to the encephalon by the vertebrals, returns by the internal jugulars, and not by the vertebral veins; and the anastomoses between the cranial and vertebral sinuses could carry off a small quantity of the blood only, transmitted along such large arteries as the vertebral. The vertebral veins are filled with blood from the occipital veins and veins of the spinal cord. Notwithstanding this, many accurate observers have declared that there is no congestion of the vessels within the cranium after death by hanging, however gorged the external parts of the head may be by blood and serum. We, ourselves, had an opportunity of examining the head of a stout muscular man of

middle age, and previously in vigorous health, who committed suicide by hanging. The encephalon was not more vascular than usual, and the sinuses contained little blood, though the external parts of the head were gorged with blood and serum.

Dr Burrows very ingeniously attempts to get rid of such troublesome facts, by supposing, that "in making such examinations, all the great vessels of the neck are usually cut across, and the thoracic organs removed from the body, before the head is examined; while the head is elevated during the operation of removing the skull-cap, and examining the brain, the fluid blood gravitates from the cranium," (p. 27.) He further supposes that the blood may gravitate downwards and diminish the quantity of blood within the cranium, when the head is placed in an elevated position, even when no incisions have been made into the body. The gravitating of the blood downwards from the vessels within the cranium, here assumed, is so obvious a *petitio principii*, a begging of the whole question at issue, that we need not dwell upon it. The other supposition, that the large vessels in the neck were cut previous to the opening of the cranium, will certainly not serve his purpose. The bodies of the criminals examined by Drs Munro and Kellie, and in the case examined by ourselves, were intended for dissection, and were too valuable, at that period, to permit of such incisions being made in the neck, and the removal of the thoracic viscera.

Dr Burrows is obliged to admit (p. 23) that "the appearances in the brains of those persons who die by hanging, would appear to support the opinion, that the cerebral vessels are not congested or overloaded in those cases where such a condition might be fairly expected;" but he immediately adds, "In opposition to such a conclusion, it would not be difficult to cite numerous well authenticated instances of death by hanging, where the brain and its membranes have presented all the usual appearances of congestion, and even of apoplexy to a striking extent." He accordingly proceeds to cite such cases, and the first mentioned are examples of sanguineous apoplexy, which had occurred during the process of hanging, presenting all the usual appearances observed in the encephalon in that disease. That a bloodvessel should give way within the cranium, and that blood should escape during hanging, when the vessels are preternaturally weak, is nothing more than what we should expect; for as it is more difficult to obstruct the passage of blood along the arteries than along the veins, and as it has been proved by experiment that in asphyxia, as the blood passing along the arteries becomes more venous, there is an increased pressure upon

their inner surface, if there be any tendency to sanguineous apoplexy, it is apt to occur at this particular time. These cases, therefore, stated by our author, have no bearing upon the question in dispute. The next and last case brought forward in proof of the statement cited above, is that of the Duke of Bourbon, the last of the Condés, alleged to have committed suicide by hanging. On examining the head, the vessels on the surface of the brain, especially on the anterior lobes, were gorged with dark *fluid* blood, and three ounces of serum were found in the lateral ventricles. Now, though the highly respectable and most intelligent medical men who examined the body, gave it as their belief, that death was induced by the accumulation and stagnation of blood in the brain and lungs, we cannot, we think, be chargeable with presumption in expressing our dissent from this opinion, as far as it relates to the brain. It is evident that there was atrophy of the brain in this case, as is proved by the presence of three ounces of serum in the lateral ventricles, without flattening of the convolutions (for if these had been flattened, this fact would surely have been mentioned); and if a part of the solids within the cranium had been removed, an increased quantity of fluid, either of blood or serum, would be present to maintain the plenitude of the cranium. We are, therefore, entitled to express doubt, that during the act of dying, if he did die by strangulation, any increase of fluid had taken place within the cranium. Besides, the reporters do not, in our opinion, state that there was an increased quantity of blood within the cranium; for the terms, accumulation and stagnation of blood, refer, we presume, only to the particular vessels mentioned, viz., those on the surface of the brain. Were not the appearances observed in the brain signs of chronic disease of that organ, which led to the committal of suicide, if really he died by his own hands, and in the manner mentioned; for it, at least, was a matter of doubt at the time? Considering that these are the only examples adduced by our author (for we throw aside mere opinions in the decision of a matter of fact), we were not a little startled to find him hazarding the following statement—"Enough has been said on this point of the pathology of the brain to prove, that in the majority of instances, when death takes place by strangulation, hanging, suffocation, drowning, and other means of causing apnœa, a congestion of the cerebral vessels is found after death."

Our author has entered at some length into details relative to the cerebro-spinal fluid, and the influence which it exerts upon the cerebral circulation (p. 50 to 58). This fluid, he

says, "is removable by pressure or absorption ; at one time giving place to an increased quantity of blood in the cranium ; at another making up for a deficiency of blood in the vessels in the head." That the cerebro-spinal fluid can, and does, pass between the spinal canal and cavity of the cranium, there can, we think, be no doubt ; and this admission does not invalidate the accuracy of the doctrine of the unvarying quantity of *fluids* within the cranium, as long as the solid parts remain the same. No doubt the propounders of this doctrine did not take this cerebro-spinal fluid into account in their illustrations of it, as at that time the existence of this fluid was almost entirely forgotten ; for it was not until Magendie had again described its extent and position that modern anatomists fully understood its anatomy. We feel confident that our author has magnified the amount of influence which this fluid exercises upon the quantity of blood in the vessels within the cranium ; at least there can be no question that he can adduce no proof of many of the statements he has advanced. It is well known that there is found very little of this cerebro-spinal fluid,—in fact, in general, little more than what is sufficient to moisten the surface of the membranes,—in the interior of the cranium, in healthy persons, up to the middle period of life. Under these circumstances, the quantity of cerebro-spinal fluid that could be displaced from the interior of the cranium must be trifling. Suppose, on the other hand, a quantity of this fluid were to be forced up from the spinal canal into the interior of the cranium, from any morbid action going on in the former, a quantity of blood, equal to that of the fluid forced into the interior of the cranium, would be displaced from the vessels in that cavity. We are not, however, aware of any ascertained facts which prove, or even render it probable, that mere alterations in the distribution of the blood in the vessels of the cranium and spinal canal are of themselves sufficient to effect any very decided change in the relative quantities of the cerebro-spinal fluid that may at the time happen to be present in the interior of the cranium, and within the spinal canal ; and the *onus probandi* rests upon those who assert that these do so. With regard to the movements observed in the encephalon, when the osseous case surrounding it is imperfectly formed, or when a portion of it has been removed—discussions upon which have been mixed up with the question we are now considering—we would make the following remarks. One of these movements is synchronous with the pulse ; the other with expiration. The first depends upon an elevation of the entire brain, by the fresh stream of blood driven into the large arteries at its

base by each stroke of the left ventricle. The second depends upon the difficulty which the blood encounters in its free passage to the heart during expiration, especially during forcible and prolonged expiration, when the parts within the thorax are compressed, and there is consequent retardation and accumulation of blood (not reflux of blood, as Dr B. asserts), in the veins leading from and within the interior of the cranium itself, when a portion of the skull is deficient.

Can there be any such movements of the brain when the skull is entire? We think not; and for the following reason:—If we were to remove a portion of the cranium, and carefully observe these motions, we would be convinced that they do not depend upon any recession of the brain from the inner wall of the cranium and its subsequent application; for the brain remains constantly in contact with the inner surface of the cranium; and its motion actually consists of a slight protrusion through the opening in the parietes of the cranium, and a return to its former level. To us it appears obvious, then, that if there were no opening in the walls of the cranium, there would be no movement. These facts, however, sufficiently shew the effects which long continued efforts, and the contractions of the heart, have upon cerebral circulation. When the heart acts violently, the blood must be driven with greater force into the vessels at the base of the brain, and exert a greater pressure on the inner surface of the vessels, and, consequently, also upon the substance of the brain. And during a violent exertion, when the glottis is closed, and the parts within the chest violently compressed, the retardation of the flow of blood along the cerebral veins must increase the pressure upon the brain, and may assist in deranging the balance of the circulation, or causing rupture of the bloodvessels; though, as we have attempted to shew, it may not, from certain physical conditions of the parts within the cranium, increase the quantity of blood there.

III. *Dr WEIR's Concluding Address to his Phrenological Class in Anderson's University, Glasgow, 8th April 1846.*

I have now, Gentlemen, brought this course of lectures to a close, and, agreeably to the announcement at the beginning of the session, I have endeavoured to give you a view of "the Anatomy and Physiology of the Brain and Nervous System, in connection with Phrenology," and have detailed to you the

“ practical application of its principles and facts to the treatment of mental diseases, to criminal jurisprudence, and to education.” How far I have performed the duties required of me, it is for you to judge. I have at least done my best to bring before you a correct analysis of the various organs and faculties, with the proper and legitimate use of all the mental powers of man, as explained by Phrenology ; and also the difference between that legitimate *use* and the *abuse* of the faculties, which the general public, who know little of the minutiae of the subject, appear continually to confound. Indeed, if the true phrenological doctrines were properly understood, and always recollected, viz., that none of the faculties, according to the phrenological system, are bad in themselves ; that all are good when properly used and exercised, and all are bad only when improperly directed ; that the three orders of faculties—the impulses or propensities, the sentiments or moral feelings, and the intellectual powers—may act independently of one another ; that every sane person possesses them all, but that men are originally very differently endowed with the whole of them ; that the two former classes are mere feelings, blind in themselves, but intended to be controlled and directed by the intellect ; that the appearance of the head indicates *general* powers only, and that these are capable of being directed in a vast variety of ways by education, moral training, and other external circumstances ;—if these few simple facts were known, and always recollected, almost the whole of the objections which have been brought against the science would disappear. The time I trust is not far distant when this will be the case. One thing is quite certain, that just in proportion as the true principles of the science become accurately known, the objections and hostility to it will disappear, and it will be universally acknowledged as the most correct representation of human nature that has ever been depicted.

Allow me at parting, as I did in the opening lecture, to impress upon your minds the close connection which this science has with the profession of many of you—*Medicine*. It is acknowledged by all the best anatomists of the present day, that the phrenological mode of examining and explaining the minute structure of the brain is infinitely superior to every other ; and this method is now almost universally adopted by anatomical teachers throughout the empire. It is also allowed that Gall taught this mode at a time when a very defective one was followed in the schools ; and that he is justly entitled to immortal honour for this reformation, and for many anatomical discoveries connected with the nervous system.

The connexion between the nervous centres and the various individual parts of the cerebral hemispheres—in other words, the phrenological organs,—has been traced and described by various anatomists ; and I have endeavoured to shew you this connexion in recent and prepared brains, and in drawings and engravings. The connexion also by distinct nervous fibres between the *motor tract* of the spinal cord, and many of the organs of the lower propensities, has been so satisfactorily traced as to go far to explain the *rationale* of the many irresistible actions (often treated as criminal) arising from the too energetic or diseased excitement of these organs ; to explain them in the same way as we explain the irresistible muscular movements, convulsions, cramps and spasms, arising from disease, or from the absorption of certain poisonous substances. In like manner, it is now acknowledged by many physiologists, that the science of Phrenology comprehends the true physiology of the brain ; and some physiologists who do not acknowledge this openly, do so indirectly, by taking advantage of many of the discoveries of the phrenologists in regard to the functions or uses of the different parts of the nervous system. The structure and functions, or the anatomy and physiology of the brain, then, are closely connected with Phrenology, or rather form part of Phrenology ; and neither can be properly understood or explained unless the phrenological doctrines are comprehended. When to all this I add that Phrenology, even as a theory, and independent altogether of the cerebral organs, is a most practical system of mental philosophy, explaining, as it does, in a more satisfactory manner than any other, the desires, emotions, and intellectual faculties of man, and elucidating the connexion of mind with matter, as clearly and correctly as the present state of our knowledge will enable us to do ; and when I, moreover, call to your recollection that all diseases are more or less influenced by the brain and nervous system, and a very great proportion of them spring directly from irregularities in the functions or actions of these organs, it will appear very evident of what great importance a knowledge of Phrenology must be to you as medical men, and how much advantage the study of its doctrines will afford you in the treatment of disease. It was chiefly to make known this importance and these advantages to the medical students attending this Institution, that these lectures were instituted. If I have properly succeeded in fulfilling the intentions of the founders, it is to be hoped that the fruit will appear in abundance not many years hence.

IV. *Memoir of the late Mr James De Ville.* By JAMES P. BROWNE, M.D., London.

James De Ville was born at Hammersmith, in the county of Middlesex, on the 12th of March 1777. His grandfather was a native of Berne in Switzerland. At an early age, he, with some other Protestants, quitted his country to avoid religious persecution. He arrived in London some time previous to the middle of the last century, and there married, in 1749, Margaret Blundell, a native of Guernsey. They had several children, all of whom died in infancy except James Louis De Ville, who was born in February 1751. The son had not attained his sixteenth year when the father died. His prospects were then very unpropitious; but, being an honest, industrious youth, he soon acquired friends. In February 1776 he married Mary Bryant, whose family dwelt for several generations in the capacity of husbandmen, at what was called the *Farm House*, at Shepherd's Bush, in the parish of Fulham. He now took a house at Hammersmith, and continued to prosper in his business as a hairdresser, till by an injudicious speculation he lost all that he had been for years struggling to acquire. At this crisis the parish authorities, in consideration of the uniform correctness of his conduct, appointed him overseer of roads and collector of rates for their repair, in that district. The emolument arising from this source being insufficient for the proper maintenance of his numerous family, he was obliged to remove his eldest child James, then about eight years old, from the humble day-school which he was attending, in order to place him with a maternal uncle, who was an extensive brickmaker in that neighbourhood. From that time the boy never had an hour's instruction in what Cobbett designated book-learning.

Such an occupation as this was but ill calculated to awaken his yet slumbering faculties. Two very important qualifications, however, were likely to accrue from it, namely, habits of early rising, and of laborious industry. And it is certain that all through life these formed salient points in his character.

After spending four or five years with his uncle, he repaired to London to seek some other employment, and soon obtained the situation of assistant at the Edinburgh Castle Tavern in the Strand. How it was he came to know anything of such a place, or by whom he was prompted to accept of it, I have now no means of ascertaining. If this place afforded a wider scope for the exercise of his intellectual faculties than

he had as yet enjoyed, it was more calculated to impair the growth of the moral sentiments, especially in one of his tender age, he being then little more than thirteen years old. But the native goodness of his disposition was proof against the temptations to which he must necessarily have been exposed.

He had not been long in this place when his attention, propriety, and intelligence, won the approbation of his employer, to whom his strong natural power as a mental calculator rendered him, even at that early period of life, a valuable auxiliary. Among the frequenters of that house whose goodwill he had gained, there was one Mr Harris, a statuary and worker in plaster of Paris, who was then carrying on a large business at the opposite side of the street. Young De Ville's duty sometimes called him to the house of this excellent man, and, on those occasions, he evinced a strong desire to learn the mode of using plaster. Mr Harris, one day, perceiving that he was closely observing one of the men at work, said to him, "You seem to like my business better than your own. Have you any objection to become my apprentice?" Delighted with the generous proposal he consented; and he immediately began his new occupation. He remained in this situation till the death of his kind master in 1796.

Here an incident occurred, while he was yet a mere boy, which is so characteristic of the man, that I cannot forbear mentioning it. When the workmen required drink they were in the habit of sending him, being the youngest, to fetch it; and, by way of recompence, would insist upon his taking some. On one occasion, after drinking more than was his custom, he was called to the parlour by a gentleman then residing in the house, in order to be sent on a special message. This person, who had always been exceedingly kind to him, observing an alteration in his manner and appearance, looked at him with a sorrowful expression of countenance and said, "I am very anxious to have this done; but I regret that I cannot send you to-day." Young De Ville left the room with a heavy heart. When he had recovered a little from his confusion, he in anguish of soul exclaimed, "What have I to gain by following the example of these men? I am afraid that I have for ever lost the confidence of this gentleman who has always been so good to me. They may jeer and laugh at me; but never again shall they prevail on me to go for their beer, or join them in drinking it." And he kept his word. In relating this anecdote to me himself many years ago, he said that to the day of his death, whenever the subject should cross his mind, he would feel a painful humiliation at having

done, even once, anything to offend or disappoint the kindest and best friend he ever had. If this circumstance affords a strong proof of his forethought, good feeling, and moral fortitude, the following, which has been communicated to me by his brother, is indicative of disinterested and enduring gratitude. Upon the death of Mr Harris, his widow retired to the country, where she died at a very advanced age. She had been kind to De Ville in his boyhood; and he did not forget her in her old age. He was aware that she possessed a sufficiency to procure the ordinary comforts of life, but not to obtain those delicacies of the seasons to which he knew she had been accustomed. These he took care to supply to her as long as she lived. Mrs Harris was reduced in circumstances, yet such was her estimate of Mr De Ville's character, that she left him a legacy of five pounds; in her own words,—“to little James De Ville, he was always such a good boy.”

In 1797 he married Jane Smith, who was an extremely industrious and frugal young woman. She carried on a retail business at home, while he was engaged elsewhere as a journeyman moulder in plaster. In this way things continued until the year 1803, when the stock and moulds of Flaxman's father being for sale, he resolved to begin business on his own account. He had been long acknowledged to be without a superior in the management of plaster; and with his active industrious habits, there could scarcely be a doubt as to his success. Besides, his uncle, whom I have already mentioned, was prepared to lend him fifty pounds; but he had the mortification to find that this sum was not enough for the purchase of the stock he required. Feeling that he might never again meet with so advantageous an offer, he in despair consulted with his wife, who, upon learning the amount of the additional sum required, went to her box and brought him the money, saying, at the same time, “I have always tried to keep our expenses within our earnings;—the savings I put by, thinking a time would come when it might be of use to you.”

Surprised and rejoiced at such a signal mark of prudence, he bought, from the sister of the celebrated John Flaxman, the stock of moulds, &c., which were left to her by her father; and immediately opened a shop in Little Pultney Street, Soho, for the sale of plaster figures. He now laboured early and late without assistance. He afterwards called to his aid his younger brother, Mr Elijah De Ville, a man of very active habits, and possessing an aptitude for mechanics. He continued some time without further aid. At length, the ele-

gance of his casting and the novelty of his patterns attracted so much attention, that, in about two years, he found it necessary to remove to larger premises in Great Newport Street, Leicester Square; and so rapidly did his business now increase, that ere long he had eight workmen employed, besides a modeller in clay.

Subsequently, he commenced the casting of metal, which led to his becoming a lamp-manufacturer. In this he was so highly successful that he obtained the contract for furnishing the new Drury Lane Theatre with lamps, &c. Some time after this, he, amongst others, had several actions at law brought against him, under an old act of Elizabeth, for following a trade to which he had not served an apprenticeship. At this menacing juncture his good fortune did not forsake him; for the late Mr Whitbread, Alderman Matthew Wood, and others, who were on the committee of that theatre, obtained an act to remove those restrictions which the system of apprenticeship imposed upon the manifestations of genius and talent, and thereby quashed the numerous pending actions against him and other persons.

In 1814 he removed to the Strand; and in 1816 began to construct lamps for lighthouses. The oil-gas apparatus at Holyhead Lighthouse, being the first of that kind applied to a lighthouse, was fitted up by him in 1818. Many other works of the same nature followed.

At an early period, Mr De Ville was convinced of the value and importance of the Society of Arts, of which he became a member; and so highly did the members of the section of mechanics esteem his acquirements, judgment, punctuality, and tact as a man of business, that they elected him chairman of their committee. He was also elected one of the early associates of the Institution of Civil Engineers.

Among the most eminent of that body was Mr Bryan Donkin. This gentleman, formerly one of Gall's auditors in Vienna, was one of Dr Spurzheim's earliest disciples in this country, and soon became his steadfast supporter and friend; and did all in his power to induce others to follow in the same path. But, effectually to disseminate a taste for the new philosophy, Mr Donkin, with his friends Dr Moore, Dr Elliotson, Mr Willis, and some others, had determined upon the necessity of forming a collection of casts, as records of observed phrenological facts, which should be sufficient for the verification of the statements of Drs Gall and Spurzheim. Mr Donkin immediately turned his thoughts to Mr De Ville as the man best adapted to effect their object.

It was in the month of January 1817 that he was first

employed by Mr Donkin in his new capacity. The order was for a few masks. And in July of the same year, he took a *post mortem* cast of a man's head. It appears from Mr De Ville's books, that Mr Donkin employed him during that and the three following years to mould skulls and casts. But at that time Mr De Ville looked upon the moulding and casting of heads as a mere matter of business. He knew nothing of Phrenology. Indeed, he does not seem to have then bestowed a thought upon the subject. It was, I believe, about the close of the above period that Phrenology was brought under his notice. Mr Donkin, accompanied by Mr, now Dr, Willis, brought him some skulls to have moulded; and, upon being asked by him what his object could be in going to so much trouble and expense about "such things," Mr Donkin explained his motive; and then urged him to lose no opportunity of procuring casts of remarkable persons. "I will give you," said he, "some of my own to begin with; and I am certain, from my knowledge of your active and persevering habits, and the peculiar fitness of your situation, that you cannot fail to succeed."

With his characteristic ardour, Mr De Ville from that day forth began to collect casts as records of facts in evidence of Phrenology. For this purpose he spared neither time nor money; and so great was his success, that, as early as the year 1826, Dr Spurzheim said to his class in London, "You have a finer collection of casts belonging to Mr De Ville than I have ever seen in any other place." And so highly were his exertions estimated by Gall, that he made a dissection of the brain, and had a wax model of it executed at Paris, which he presented to him. Mr De Ville much valued this evidence of Dr Gall's consideration of his services to Phrenology.

About the commencement of the year 1821, soon after his initiation, he began to take casts from the life.* To do this with the greatest celerity, and with the least possible inconvenience to his sitters, he invented a new method of moulding from the living head. By this process he was enabled to remove the plaster from the face in four or five minutes. In any case this was a great advantage, especially in casting the timid; and his large and peculiarly valuable collection of casts from children, probably, could not have been made but for his improved method of moulding.

Among the earliest of his sitters were Mr Donkin and

* In June of this year Mr De Ville published a marked bust, with a *Manual of Phrenology*; a third and greatly improved edition of which *Manual* appeared in 1841. [Short notices of the first and last edition will be found in this *Journal*, i., 625, and xiv., 281.—ED.]

some of his friends and pupils, Mr Tulk,* Dr Elliotson and his family, and some other well-known persons.

In 1823 he visited Paris, taking with him a letter of introduction from Mr Donkin to Dr Spurzheim. On that occasion, in order to induce the Doctor to deliver a course of lectures on Phrenology in London, he guaranteed that he should receive L.100, clear of expenses. The offer was accepted, and the course given at the Crown and Anchor to a very numerous auditory. Dr Spurzheim realized about L.150. This success was owing, in a great measure, to the exertions of De Ville.

There can be no doubt that Mr De Ville profited by the instruction he received while listening to that admirable course of lectures; for we soon find that his zeal in the cause of Phrenology was not to be limited to the mere accumulation of casts and skulls. He now began to turn his attention to the manipulation of heads; and soon became so expert a head-reader (to use a phrase of my respected friend, Dr Caldwell), that Spurzheim, not long afterwards, said that he possessed more quickness and tact as a manipulator than any one he had yet seen. His success in elucidating the characters of one hundred and forty-eight convicts on board the ship *England*, about to sail to New South Wales, in 1826, when he specified the kind of dangers during the voyage to which their several organizations would tend (see the account by Mr Simpson, *Phren. Journ.*, vol. iv., p. 467), is a convincing attestation of his skill.†

Not the least valuable and interesting result of his remarkable adroitness as a "head-reader" is the presence, in his great collection, of some of his most precious casts and skulls. The heads he was allowed to mould, and the skulls were presented to him, after he had with surprising exactness delineated the features peculiar to the character of each.

About this period he began to give gratuitous demonstrations on Phrenology, twice a-week at his own house; and also to examine heads; but he invariably refused payment for his trouble and advice. So indefatigable did he now become in forwarding the cause he had so much at heart, that much of his valuable time was withdrawn from his more legitimate calling, to the manifest detriment of his business. Dr Combe, who visited and published an account of Mr De Ville's Phreno-

* I find by a recent note, in Mr De Ville's handwriting, on the same page which records the taking of "a cast of the head of C. A. Tulk, Esq.," that that gentleman was the first to point out to him the *regions* of the head; and that he also taught him to mark out the organs on the bust.

† In vol. vii., p. 610, will be found an account of Mr De Ville's examination of the skull of Peter Pass, a criminal.—Ed.

logical Collection in the autumn of 1830 (*Phren. Jour.*, vi., 569), says :—

“I may add, that, for the last two or three years, the number of applicants to have their heads examined has been so great, that Mr De Ville has been at last obliged to demand a fee for his trouble ; and he now abides by this rule. I doubt how far the indiscriminate examination of ignorant as well as instructed applicants is likely to prove beneficial to the advancement of Phrenology ; but every one must of course be left in this respect to the regulation of his own judgment ; and if Mr De Ville thinks it right, no one has any title to find fault with him.

“In the course of my conversation with Mr De Ville, he told me, that, although a stranger to medical science and pursuits, he was nevertheless occasionally consulted in cases of insanity, from a growing conviction which was getting abroad, that a knowledge of Phrenology was more useful in its treatment than mere professional science without Phrenology ; and that he had done good where the medical attendants had failed. In his lectures he is in the custom of mentioning this fact, and warning the medical gentlemen to take care of themselves, as ignorance is likely to be doubly injurious to them, by leading to diminished confidence in their other knowledge, in proportion as the public mind opens to the importance of Phrenology, and perceives their deficiency in it. It will be well for them to take the hint ; for, ere long, it will be forced upon their notice less pleasantly than if acted upon at their own hands.”

In London, and elsewhere, Mr De Ville subsequently delivered lectures at several public institutions. On such occasions his want of a literary education was very perceptible ; and many persons have thought that, in essaying to be a lecturer, he had unwisely turned aside from the sphere of his usefulness. This want of wisdom, however, must be shared by many men of rare acquirements both in London and in the country, at whose invitation those lectures were given. Mr De Ville was well aware of this deficiency ; but strong in the truth of the cause he had to advocate, rich in the abundance of materials calculated to impress others with a like conviction, and endowed with great tact in his mode of applying them ; possessing, moreover, a clear and vigorous judgment, with a memory in a high degree powerful and retentive, that supplied him on the instant with the aptest anecdotal illustrations ; and being, also, gifted with great fluency ; he, with that resoluteness so natural to him, determined to set at nought whatever amount of ridicule he might have to en-

counter, in order to accelerate the progress of a science upon the diffusion of which he conscientiously believed the future welfare of the human race would mainly depend. It is only justice to say that his exertions in this way were extremely useful. The springing up of several societies was the result; and many charitable institutions have been benefited by his gratuitous demonstrations.

It is true he made blunders in grammar and also in pronunciation that would sometimes raise a smile when he began to lecture. But this soon wore away; and the attention of his audience became riveted to his subject, from the interest with which he invested it. Mr De Ville was not ashamed of his humble origin. He generally disarmed criticism, by stating at the outset of his discourse that he had not received a literary education.* But his intellect was of a high order; and, as man's strongest faculties point out the path he is to pursue with a view to obtain individual happiness, so we find that all Mr De Ville's pursuits were intellectual. Considering his indefatigable attention to business, he read a good deal; and it was surprising to find him so well informed upon so wide a range of subjects. The tendency to study principles was a leading feature of his intellect; and to his power in discovering these must be attributed much of his success. That was his first qualification; his being eminently a practical man, the second; his energy, punctuality, and perseverance, did the rest. It was these qualities that enabled him to establish a large manufacturing business without having previously seen how such a trade ought to be conducted, and also to manage both departments—the mechanical in the manufactory, and the commercial in the counting-house. As a mental arithmetician he possessed considerable ability. This power manifested itself at a very early age, and greatly tended to smooth the rugged path he had to tread when he first visited London. He was fond of music; and had a taste for beautiful forms and proportions in sculpture. The picturesque in scenery afforded him a high degree of pleasure. He had a passion for gardening, and possessed much skill in the management of fruit-trees. He was at one time an enthusiastic angler, and was very expert at making a fly.

In his social and domestic relations, Mr De Ville was wor-

* Judging from the extremely loose, inaccurate, and ungrammatical language of some of his written sketches of the dispositions and talents indicated by heads which he manipulated, we presume that frequently he had not leisure to express his thoughts even so well as his defective education allowed. In vol. xiii., p. 340, Mr Hewett Watson published an estimate of Mr De Ville's character as a phrenologist. With this our own opinion corresponds.—Ed.

thy of the love and affectionate regard in which he was held by his family and friends. And, in summing up his character, it may with truth be said, that in his friendships he was warm, sincere, and enduring ; in his resentments open, manly, and extremely placable. He possessed a brave humanity, that was displayed on some very trying occasions. There was in his disposition an uncommon blending of bold resolution and far-seeing circumspection. But his circumspection never merged into timidity, nor his resolution into stubbornness. He loved praise, and was ambitious of distinction. Endowed with great self-reliance and courage, he would not submit to undue domination from any quarter, however exalted ; and yet he was imbued with feelings of unfeigned deference for those whom the accidents of birth, fortune, and education, had placed above him in the scale of society. Strong in religious feeling, he was yet entirely free from any tincture of cant or bigotry. His sense of property was just sufficient to act as a spur to industry : and it would not be surprising if a man, inured to such hardships as he in early life had suffered, and, moreover, endued with an ambitious spirit, should contemplate with pleasure the amassing of wealth. But Mr De Ville had no parsimonious tendencies. On the contrary, he was eminently generous and charitable, and often inclined to be lavish where the interests of science required to be upheld and advanced.

That the above is not an exaggerated statement of Mr De Ville's moral and intellectual qualities, the whole tenor of his life will shew. Could he, with a minor endowment of them, have earned the high commendation of two great philosophers, by having reared a temple in which the great discovery of one, and the important original contributions of the other, are seen as if in a mirror ? or could he, as an artizan, have enjoyed the favour of many eminent men of science ; or, as a citizen, been twice raised to the highest position that his fellow-parishioners could bestow ? In his domestic relations he was equally commendable. To his aged father, who had seen more than ninety summers, he manifested a dutiful tenderness ; having maintained him a great many years in a comfortable and happy independence. He was a husband of exemplary fidelity, an affectionate and indulgent father, a fond and considerate brother, a highly-esteemed and respected master ; and the tears of his grandchildren over his grave proved the uniform kindness of his behaviour to them. As a friend, he was steadfast and warm, inclined to overrate whatever merit he might find in those whom he esteemed, and always ready to use his influence in their behalf.

He died suddenly, though not quite unexpectedly, on the 6th of May 1846. He was then in the seventieth year of his age. He had been out on business all the morning, and came home about eleven o'clock, when he complained of fatigue, and retired to his apartment. He soon afterwards observed that he felt as if he had been pierced through the side; and, upon his daughter saying that he had had that sensation once before and recovered, "Ah!" said he, "there is a change; I did not then feel the sickness that now oppresses me." He then walked from his easy chair to the sofa, where, half an hour after, he expired without the slightest struggle, sitting up with his head and arm resting on the pillow that supported his back.

Mr De Ville had five children; two sons and three daughters. His younger son was drowned while bathing in the Seine at Charenton, near Paris, in 1825; and, by a rare coincidence of misfortune, his eldest son was drowned in the Thames by the upsetting of a boat at Hammersmith in 1835.

Mr De Ville was much respected by his workmen, as was evinced at his funeral, when about forty of them, clad in mourning, met the procession at Hammersmith Churchyard.

The moral and intellectual attributes which have been—it is presumed, justly—ascribed in the preceding pages to Mr De Ville, would ensure his memory a high place in the esteem of every right-thinking man; but they afford no reason why his name should be held in special remembrance. Fame awaits him only who surpasses all his competitors in the accomplishment of some undertaking of great importance. Mr De Ville's vast collection of casts and skulls in illustration of Phrenology, is, then, the platform upon which his reputation will stand. There are many ardent admirers of our science, who have never seen this great repertory of cases in evidence of its truth, and to whom a succinct, and, it is hoped, sufficiently perspicuous narrative of its varied contents may not be uninteresting. To those who have seen it, and wondered at its magnitude, and been made acquainted with much of what must be considered the most valuable part of it, the brief description to which I am constrained to confine myself on the present occasion, will not, it is presumed, be uninterestingly scanty.

It consists of about 2450 specimens, nearly 200 of which are skulls. The rest are, with very few exceptions, all *original* casts. Upwards of 1500 have been taken from the life at his own house. Of the skulls, about 14 are of men remarkable chiefly for their atrocity. The remainder, except a few which are in themselves very interesting, belong to the

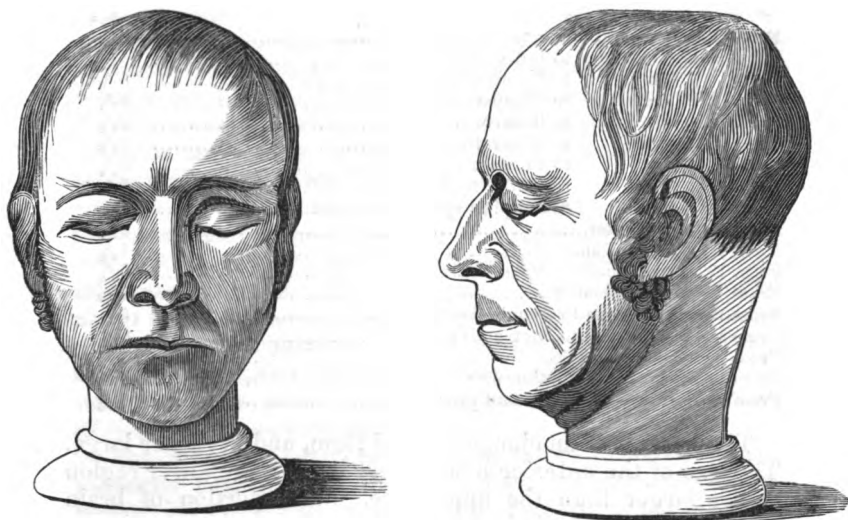
aborigines of various parts of the globe. Among the casts there are about 300 that have been taken from *original* moulds made upon skulls. A few of these are from the skulls of some of the most extraordinary men recorded in history, Descartes for instance. There are many from those of executed criminals, and a large portion from the crania of aboriginal tribes. About 30 of these are of the ancient Peruvian stock. There is a very interesting series of casts from the heads of remarkable characters, together with casts of the exterior and interior of their skulls. Some of these were insane and idiotic, some of them poets, and the others desperate highwaymen. There is likewise a set, about 30 in number, from persons who died insane, from Esquirol's collection. The casts of young persons from the age of seven to eighteen are nearly 80 in number. These are interesting in the extreme. They serve to illustrate various degrees of endowment from imbecility to brilliant capacity. In some cases the shades of difference as to form would not, except to a practised eye, warrant the conclusion that there existed much diversity of power. There is a vast deal of information to be acquired in this department. A large number of these are accompanied by second casts (not duplicates), which were taken at intervals of two, three, and four years. The growth of the head after the age of thirteen is very considerable. Of this there are some very remarkable instances. There are some of precocious musical talent, some of arithmetical, some of mathematical, and some who were extraordinary linguists. About 170 casts have been taken to illustrate changes of form. The change is, in many cases, remarkably striking.* In many instances, measurements have been made by me over various parts of the head; but it will not be necessary to mention more than one case now. A cast was taken at the age of sixteen, and another of the same youth one year and ten months after. The first measured from ear to ear over the perceptive organs $11\frac{1}{2}$ inches, over reflectives $12\frac{3}{8}$; the second measured $12\frac{1}{4}$ inches over the perceptive, and 13 over the reflectives. The statement is confined to two measurements, because there can be no objection made on the score of hair. It should be added that the increase occurred chiefly in the frontal region; and that the growth was in the site of the organs that had been, during those two years, assiduously exercised. The series of 72 casts illustrative of the large and small developments of each organ is very instructive.

* This subject is treated of by Dr Combe in vol. vi., p. 573, and x., 417, in connexion with Mr De Ville's casts. See also vol. vii., p. 373, and vol. xiv., pp. 19, 32, 99.—Ed.

These are from known characters, many of them being public men of distinction. There are about 80 casts of poets, novelists, and other literary men. Several of these are from amongst the peasantry. The casts of mathematicians and engineers are numerous; and their intellectual development forms a striking contrast to those I have last mentioned. Of dramatists, actors, musicians, painters, and sculptors, there is an extensive series, embracing the most celebrated modern ones; men eminent in different departments of art. There is a large series of casts (about 50), from persons devoted to religious pursuits. There are about 30 casts of the most eminent travellers and navigators of modern times. Some of these possess uncommon interest. There are also several casts of men who have obtained celebrity as prize-fighters. There is an extensive series of original masks, many of them being casts (chiefly posthumous) of some of the greatest statesmen and orators that this country has produced. And it is interesting to see how completely the developments correspond to the peculiarity of intellect displayed by each of them. There are also casts of men eminent in the learned professions. There are a few casts of Chinese, New Zealanders, and Esquimaux. There are several wax models of the dissected human brain, illustrating its anatomy after the manner of Gall, Spurzheim, and Reil.

Mr De Ville collected also about 3000 crania of animals for the study and illustration of Comparative Phrenology. This part of his museum was but partially arranged, and never exhibited to visitors.*

* At the session of the Phrenological Association held at Glasgow in 1840, Mr De Ville read an account of his Collection, and "Cases in which a change has been produced on the form of the head by education and moral training." Reports of these communications, drawn up from Mr De Ville's manuscripts, appeared in our 14th volume, pp. 19, 32. On this occasion, Professor Gregory having remarked on the importance of a published *Catalogue Raisonné* of Mr De Ville's Collection, Mr D. replied, that he "was actually preparing a catalogue, which he trusted would be ready for publication next spring. In reference to a hope expressed by Mr Combe and other members present, that in no future circumstances should so valuable a collection run the risk of being dispersed, Mr De Ville mentioned, that in his will he had strictly provided for its preservation in an entire state after his death." (xiv., 22.) The catalogue has never been published; and no will is extant that contains the clause here mentioned.—At the session of the Association held in London in 1841, Mr De Ville "read a paper on Insanity, illustrated by a number of casts shewing the extraordinary forms of head met with in cases of that disease, and the correspondence which, he stated, exists between the diseased mental manifestations and the phrenological development. He also exhibited a few casts taken from the same individuals at different periods, shewing the changes of form of the head which resulted from disease of the brain." (xiv., 285.)—At the session of 1842, "Mr De Ville illustrated the correspondence between the forms, sizes, and proportions of the brain, and both the inside and outside of the skull, by a series of casts which were taken by him at the suggestion of Drs Gall and Spurzheim, by



The drawings for the above woodcuts were made by Mr George Lance, at the request of his friend Mr Cull.* They were made from a cast of Mr De Ville, for which he was moulded when fifty years of age. The subjoined measurements were taken from the same cast:—

Tape Measurements.

	Inches.
Circumference of head on Individuality in a horizontal plane to the lower part of Philoprogenitiveness,	23 $\frac{1}{8}$
Circumference of head on Individuality in a horizontal plane to the centre of Philoprogenitiveness,	23 $\frac{3}{8}$ †
Circumference of head on Comparison in a horizontal plane to the lower part of Philoprogenitiveness,	23 $\frac{1}{8}$
From root of nose over the head to occipital spine,	14 $\frac{3}{8}$
From meatus externus over the head to the opposite meatus externus,	15 $\frac{1}{8}$

whom notes of the diseased specimens were in part supplied to him." (xv., 325.) —When Tiedemann was in London a few years ago, he visited Mr De Ville's museum, and is said to have acknowledged that he acquired much new and valuable information by inspecting the national crania. (xiv., 102.) In 1841 his collection was visited by Sir George Mackenzie, who, in the same volume, p. 341, published some remarks on it, and on Mr De Ville as a phrenological practitioner. —In a note just received from Dr Browne, he mentions that there exists a manuscript catalogue of *every object* contained in the museum—a catalogue embracing not merely the names, and places whence procured, of the objects, but, in a majority of instances, interesting descriptions of the qualities manifested by the individuals whose skulls or casts are in the collection.—ED.

* It is proper to mention that, as works of art, Mr Lance's drawings are much superior to the woodcuts.—ED.

† Greatest circumference of head during life, 23 $\frac{1}{4}$.

Calliper Measurements.

	Inches.
From Philoprogenitiveness to Individuality,	8 $\frac{3}{8}$
From meatus externus to Individuality,	5 $\frac{1}{8}$
From do. to Eventuality,	5 $\frac{1}{8}$
From do. to Comparison,	5 $\frac{1}{8}$
From do. to Benevolence,	6 $\frac{1}{8}$
From do. to Veneration,	6 $\frac{1}{8}$
From do. to Firmness,	6 $\frac{1}{8}$
From do. to Self-Esteem,	5 $\frac{1}{8}$
From do. to occipital spine,	4 $\frac{1}{8}$
From Order to Order,	4 $\frac{1}{8}$
From Number to Number,	4 $\frac{1}{8}$
From Constructiveness to Constructiveness,	5 $\frac{1}{8}$
From Ideality to Ideality,	5 $\frac{1}{8}$
From Acquisitiveness to Acquisitiveness,	5 $\frac{1}{8}$
From Destructiveness to Destructiveness,	6 $\frac{1}{8}$
From Secretiveness to Secretiveness,	6 $\frac{1}{8}$
From Cautiousness to Cautiousness,	6 $\frac{1}{8}$
From mastoid process to mastoid process,	5 $\frac{1}{8}$

The head is of an elongated oval form, and is rather large. The size of the anterior lobe is very large; the lower region is not larger than the upper one. The portion of brain above Cautiousness is large. The portion above Causality is very large. The temperament was bilious-nervous. Mr De Ville was below the middle stature. He was at one time robust, but never bulky; and in the prime of life was capable of enduring great physical exertion. The habitual expression of his countenance was thoughtful and grave; but occasionally his large grey eyes wore a look of searching penetration.

The following is an estimate of the relative proportions of the cerebral organs:—

Amativeness, moderate.	Ideality, moderate.
Philoprogenitiveness, large.	Mirthfulness, full.
Inhabitiveness, rather large.	Imitation, rather large.
Adhesiveness, very large.	Individuality, large.
Combativeness, large.	Form, rather large.
Destructiveness, full.	Size, large.
Secretiveness, full.	Weight, rather large.
Acquisitiveness, full.	Colour, moderate.
Constructiveness, rather large.	Locality, large.
Self-Esteem, full.	Number, large.
Love of Approbation, large.	Order, large.
Cautiousness, full.	Eventuality, rather large.
Benevolence, very large.	Time, full.
Veneration, large.	Tune, full.
Firmness, large.	Language, large.
Conscientiousness, large.	Comparison, large.
Hope, moderate.	Causality, rather large.
Marvellousness, large.	Alimentiveness, moderate.

This scale of proportions is pretty accurate, but there are shades of difference perceived by the observer which cannot be adequately expressed by our technical language. And as

in a well formed head of this size, the dimensions, according to actual measurements, must, in every part, be considerable, it might be inferred, that certain feelings had sway which were only subordinate. The organs of Acquisitiveness, Secretiveness, and Destructiveness, measure, respectively, $5\frac{1}{10}$, $6\frac{1}{10}$, $6\frac{1}{10}$; these, however, are not salient points; and it is certain that the feelings which depend on them were not at all leading features of his character.

After the careful and, it is hoped, dispassionate view that has been taken of the career and character of Mr De Ville, it will not perhaps be considered necessary formally to draw inferences from the above estimate. It will be seen that his moral and intellectual manifestations are strictly in accordance with the superior development of the sincipital and frontal regions, and the peculiar talents and traits of character with the several predominating organs, as the following points of disposition and organization evince.

His large Adhesiveness and Philoprogenitiveness, with moderate Amativeness, and very large Benevolence, are in perfect keeping with his admirable conduct in his domestic relations; the first and last organs with the warmth and kindness of his friendship. His enduring gratitude accords with his very large Benevolence, aided by Conscientiousness; his intrepid humanity with these and large Combativeness. A large intellectual region, with good but not predominant Self-Esteem and Firmness, produced the self-reliance for which he was so remarkable; and these, combined with large Combativeness, were the source of his resoluteness, which sometimes amounted to pertinacity. They also prevented his large Veneration and paramount Benevolence from leading to subserviency, or an undue yielding of his judgment. A fair development of Cautiousness, with large reflective organs, gave him that foreseeing prudence for which he was distinguished. The organ of Destructiveness is not prominent; he could not bear to witness injury or destruction. It was, however, sufficient to add energy to Combativeness. His open and confiding disposition is in strict accordance with his relatively moderate organ of Secretiveness and very large Benevolence. His large Veneration and Marvellousness are indicative of the sense of religion which he possessed; but the organ of Hope is not salient. He looked more to the essentials than to the forms of religion; and his Benevolence, Conscientiousness, and judgment, led him to repudiate cant, and to abhor bigotry. Mr De Ville never indulged in visionary speculations, although the character of his intellect was sufficiently speculative. Will the moderate organ of Hope in

part account for this? Neither did he indulge in pecuniary speculations. The organ of Acquisitiveness is not prominent. It is not in the remotest degree characteristic of a money-loving man. And those who have had the best opportunity of knowing him believe that he never indulged in any pleasurable anticipations as to the amassing of riches. The organ of Gaiety is full, and that of Imitation is large. He was fond of pleasantries, and could tell a story with much humour and expression. It would be idle to treat of each intellectual organ. His organ of Number was large; and he was a mental calculator and self-taught arithmetician.

It will be seen that the talents which were evinced are in strict accordance with his cerebral organization. But it may be asked how it was that with so fine a forehead, and so large an organ of Language, he was yet unable to communicate his ideas with clearness in writing; and that in speaking he never could divest himself of certain phraseological peculiarities. It has been stated that he was fluent: that depended on his organ of Language; the incorrectness depended on other causes. Mr De Ville was avowedly an uneducated man. In early life he was placed in situations which were but ill calculated to afford illustrations of grammar or of the graces of language. Other men, however, of far less intellect, whose early education was equally neglected, have mastered the difficulties of grammar, and expressed themselves with clearness and strength; but then they carefully studied grammar. Mr De Ville, on the contrary, continued to study other things to the neglect of grammar, and his conversations and writings suffered in clearness and accuracy.

LONDON, *August 1846.*

V. *Remarks on Insanity, the result of Injury to the Head.*
By C. LOCKHART ROBERTSON, M.D., Resident Physician
in the Cumberland Provisional Lunatic Asylum at Dunstan
Lodge, Gateshead-on-Tyne. (Read before the Medico-
Surgical Society of Edinburgh, 1st April 1846, and
originally published in the Northern Journal of Medicine
for May 1846.)

Severe injuries of the head, whether producing, in the first instance, concussion, or compression, are occasionally, though rarely, followed by permanent mental alienation.

Thus, of 1220 cases, reported by Mons. Esquirol,* 18 or 1·4 per cent. only were caused by blows or falls upon the head.

Every variety of insanity may result from this exciting cause. Thus, of 482 cases of melancholia† (Lympémanie ou Mélancholie), 10 or 2·0 per cent. were the result of injury to the head. Of 588 cases of mania,‡ 13 or 2·5 per cent. were caused in the same manner. Of 235 cases of dementia,§ 3 or 1·2 per cent. had the same origin.

Injuries of the head likewise produce moral insanity, *i.e.* perversion of the active and of the moral powers of the mind, the intellectual powers being sound. "There are instances," says Dr Prichard,|| "in which a slight peculiarity of character, not amounting to insanity, has remained long, and perhaps through the life of the individual, who has sustained a severe injury of the head. Sometimes this constitutes a kind of moral insanity; the temper is more irritable, the feelings are less under restraint than previously." The case of Robert Driver, below related, is one of moral insanity, the result of injury to the head.

Injury to the head may act either as a predisposing or as an exciting cause of insanity. "Les chutes sur la tête,¶ même dès la première enfance, prédisposent à la folie, et en sont quelquefois la cause excitante." "A fall or blow may predispose to maniacal excitement.** . . . In some cases of slowly advancing insanity which I have met with, connected with general paralysis, there has been reason to suspect that a predisposing cause was a violent fall on the head some years previous to the appearance of the mental disorder."

Many years may elapse between the receipt of the injury and the decided manifestation of the mental disorder. "Un enfant de trois ans fait une chute sur la tête;†† depuis il se plaint de céphalalgie; à la puberté le mal de tête augmente, et la manie se déclare à l'âge de dix-sept ans."

In all cases of insanity, the result of injury to the head, the *prognosis* will be very much influenced by the existence or non-existence of a depressed portion of skull. In the latter

* Des Maladies Mentales, considérées sous les Rapports Médicaux Hygiéniques et Médico-légaux, tom. i., pp. 62, 64. Paris, 1838.

† Esquirol, op. cit., tom. i., p. 435. ‡ *Ib.*, tom. ii., p. 144. § *Ib.*, p. 235.

|| A Treatise on Insanity and other Disorders affecting the Mind, p. 202. London, 1835.

¶ Esquirol, op. cit., tom. i., p. 68.

** Dr Conolly's Clinical Lectures on the Principal Forms of Insanity, delivered at the Middlesex Lunatic Asylum at Hanwell. *Lancet*, Nov. 29, 1845.

†† Esquirol, op. cit., tom. i., p. 68.

instance we must be guided by the variety and extent of the mental alienation. In the former, a reasonable hope may be entertained that, by the removal of the predisposing or exciting cause, namely, the depressed portion of bone, the patient may once more be restored to the use of his faculties. In stating this opinion, I am fully aware that I differ from Dr Conolly, who says* "that a depression existing even to a small extent, often appears to induce incurable insanity." I have not met with any other notice in works on insanity regarding the influence of a depressed portion of skull on mental alienation.

The following is a well marked case of moral insanity, the result of an attack of acute mania, complicated during its progress, as is frequently the case, with monomania, and cured by the removal of the exciting cause.

A Case of moral Insanity caused by a Depression in the Skull, and cured by the operation of Trephine.

Robert Driver, æt. 23, a sailor, was admitted into the Dunstan Lodge Asylum on the 10th of February 1845.

Ten years since he fell from the mast of a ship; which accident was followed by an attack of acute mania.

On his return home he became more and more ungovernable in his temper, and violent in his conduct.

He also suffered from frequent pains in the part of the cranium on which he fell, and which he imagined were caused by his mother beating him.

After being some time in this asylum, this delusion gave way, and the intellectual powers of his mind remained sound, but his conduct continued ungovernable, and his language abusive, and kind words made no impression on his wayward temper. He still complained of pains in the injured part. On examining his head, I discovered a very distinct depression on the posterior superior margin of the right parietal bone, the situation to which he referred the pains.

In consultation with Mr Furness of Newcastle, consulting surgeon to this institution, it was decided that the depressed portion of skull be removed by the trephine.

On the 3d of January, the operation was skilfully performed by Mr Furness. The patient bore it well, and the wound healed, without a bad symptom. The portion of the cranium removed was healthy in appearance on both of its surfaces. It adhered very firmly to the dura mater, requiring considerable force for its removal. It was altered considerably in

* Loc. cit.

form, appearing to have been indented, rather than fractured, which is not improbable, seeing the accident occurred to the patient when only thirteen years of age.

His conduct is now, and has been since the operation, in every way improved. He has had no bursts of passion; answers civilly when spoken to, and is grateful for the relief afforded him. He looks forward with pleasure to his return home, which will take place as soon as the weather improves. He has, for the last fortnight, been working on the farm, and states, that since the operation, he has been free from pain in the head, under which he formerly laboured.*

Sir A. Cooper, in commenting on a case of Mr Cline's, in which, by the operation of trephine, a man had been restored to health, who had passed 13 months in a "state of perfect oblivion, deprived of all powers of mind, volition, or sensation," in consequence of a fall from the yard-arm, which had caused a slight depression on the head, says,† "It appears therefore, that in cases of depression we should not be prevented from trephining, however distant the period may be at which the accident occurred; and the patient may, after any interval, be restored to the powers of body and mind." The case I have related corroborates this opinion of Cooper.

It would appear, that injuries to the head, instead of producing insanity, may even occasionally improve the mental powers. Dr Cox mentions‡ that a son of the late Dr Priestley is said to have been restored to reason from idiotcy by a fall from a window. "In other instances," says Dr Prichard,§ "there has been, after injury to the head, greater energy and activity, more of excitement in the general character, which has been thought a change for the better, rather than a morbid alteration."

"Cases of this description are sometimes very remarkable. I have been informed on good authority, that there was, some time since, a family, not far from this city, consisting of three boys, who were all considered as idiots. One of them received a severe injury of the head: from that time his faculties began to brighten, and he is now a man of good talents, and

* ["If, during some of the 'fits of passion' to which he was formerly subject, this man had committed homicide, the law would have prescribed, not the removal of a particular piece of bone, but public strangulation. In a large proportion of the cases in which capital punishment is inflicted, the culprits are known to have received severe wounds of the head; and, indeed, the frequency of these statements has led to the matter being considered by some of that class who write upon criminal law for the *Times* and the *Examiner*, as a sort of standard joke to which no attention should be paid."]—*Popular Record of Medical Science*, June 27, 1846, p. 408.]

† Lectures on the Principles and Practice of Surgery, p. 135. London 1835.

‡ On Insanity, p. 104.

§ Op. cit., p. 202.

practises as a barrister. His brothers are still idiotic or imbecile. Van Swieten* mentions the case of a girl who was imbecile till she received an injury of the head, and underwent the application of a trephine for the removal of a depressed portion of skull: she recovered and became intelligent. Haller has reported the case of an idiot, whom a wound in the head restored to understanding."

"A somewhat similar case is that of father Mabillon,† who is said to have acquired, after the operation of trepanning, a sudden increase of his intellectual faculties."

DUNSTAN LODGE, 1st February 1846.

P. S.—The patient, Robert Driver, was dismissed cured on the 20th March, having shewn no symptom of his previous malady since the performance of the operation on the 3d of January.

II. NOTICES OF BOOKS.

I. *Report of an Educational Tour in Germany, and Parts of Great Britain and Ireland; being part of the Seventh Annual Report of* HORACE MANN, Esq., Secretary of the Board of Education, Mass. U. S., 1844. With Preface and Notes by W. B. HODGSON, Principal of the Mechanics' Institution, Liverpool. London: Simpkin, Marshall, and Co., 1846. 12mo, pp. 272.

We briefly noticed this volume in our April Number, p. 194, and now revert to it with increased interest after a more careful perusal.

Mr Mann's history adds value to his work. He was trained to the bar in the State of Massachusetts, and rapidly rose to eminence in his profession. While yet under forty years of age, he was chosen President of the Senate of Massachusetts (equivalent to the House of Peers in Britain), and might have aspired to the highest political offices of the state; but a severe domestic bereavement having affected his health and spirits, he took a dislike to the turmoil of public life, and retired for a season into the private circle. In this condition he was earnestly solicited by his friends to accept of the office of secretary to the Board of Education for the State,

* Comment. in Boerhaavii Aphorismos, tom. i.

† Dr Cox, loc. cit.

then instituted for the first time, and was induced to undertake its duties. Possessed of a large anterior lobe of the brain, a high well-developed coronal region, and an active temperament, Mr Mann was an acquisition of the highest value to his countrymen. Suffice it to say, that he has encountered and overcome obstacles before which a man of less talent, sagacity, tact, perseverance, and reliance on the unconquerable power of reason and truth, would have fallen prostrate in despair. He has given life and energy to the Common Schools of Massachusetts, and rendered them objects of interest and imitation to all the other states of the North American Union. It is only justice to him to mention also that, relinquishing the career of worldly ambition, he has devoted to the education of his countrymen the whole energies of his able and accomplished mind, and every moment of his life, for the moderate remuneration of 1500 dollars per annum—scarcely more than L.300 sterling. In addition to his other qualifications, Mr Mann is intimately acquainted with Phrenology and its applications. Its principles constitute part and parcel of his elements of thought. He views human affairs through the medium which it supplies; and from this source the work before us derives no small portion of its value.

Mr Mann states that, early in the spring of 1843, he applied to the Board for permission to visit Europe at his own expense, during the then ensuing season: permission was granted, and, in consequence, he visited England, Ireland, and Scotland; thence proceeded to Hamburgh, Berlin, Leipzig, Dresden, Frankfort-on-the-Maine, the Rhenish provinces of Prussia, with the Grand Duchies of Nassau, Hesse-Darmstadt, and Baden; and passed through Holland and Belgium to Paris. The work before us contains his observations and reflections during the tour. "I have visited countries," says he, "where there is no national system of education at all, and countries where the minutest details of the schools are regulated by law. I have seen schools in which each word and process, in many lessons, was almost overloaded with explanation and commentary; and many schools in which 400 or 500 children were obliged to commit to memory, in the Latin language, the entire book of Psalms and other parts of the Bible,—neither teachers nor children understanding a word of the language which they were prating. I have seen countries, in whose schools all forms of corporal punishment were used without stint or measure; and I have visited one nation, in whose excellent and well-ordered schools scarcely a blow has been struck for more than a quarter of a

century. On reflection, it seems to me that it would be most strange, if, from all this variety of system and of no-system, of sound instruction and of babbling, of the discipline of violence and of moral means, many beneficial hints, for our warning or our imitation, could not be derived; and as the subject comes clearly within the range of my duty, 'to collect and diffuse information respecting schools,' I venture to submit to the Board some of the results of my observations." (Pp. 3, 4.)

The work is so replete with interesting matter, that there is some difficulty in making selections, where the temptation to exceed our limits is so strong. We shall, however, state generally its contents, and endeavour to refrain from culling too many of the striking passages as we proceed.

Mr Mann defends the Prussian system of education against the charges with which it has been assailed, both in Great Britain and in America. In reference to the assertion that Prussia has perverted the benign influences of education to the support of arbitrary power, he remarks that—

A national spirit of liberty can be cultivated more easily than a national spirit of bondage; and if it may be made one of the great prerogatives of education to perform the unnatural and unholy work of making slaves, then surely it must be one of the noblest instrumentalities for rearing a nation of freemen. If a moral power over the understandings and affections of the people may be turned to evil, may it not also be employed for the highest good?

Besides, a generous and impartial mind does not ask whence a thing comes, but what it is. Those who, at the present day, would reject an improvement because of the place of its origin, belong to the same school of bigotry with those who inquired if any good could come out of Nazareth; and what infinite blessings would the world have lost had that party been punished by success! Throughout my whole tour no one principle has been more frequently exemplified than this, that wherever I have found the best institutions,—educational, reformatory, charitable, penal, or otherwise,—there I have always found the greatest desire to know how similar institutions were administered among ourselves; and where I have found the worst, there I have found most of the spirit of self-complacency, and even an offensive disinclination to hear of better methods. (Pp. 7, 8.)

In his introductory section Mr Mann notices, at some length, "the mode of teaching the Deaf and Dumb to speak, by the utterance of articulate sounds." In the deaf and dumb schools of Prussia and Saxony, says he, "I have often heard pupils read with as much distinctness of articulation and appropriateness of expression, as is done by some of the children in our own schools who possess perfect organs of speech, and a complement of the senses." He attaches great importance to this accomplishment.

The next section, entitled, "WHAT ARE THE CONSEQUENCES TO A PEOPLE OF HAVING A UNIVERSAL OR ONLY A PARTIAL SYSTEM OF EDUCATION?" is extremely valuable. "Where government," says Mr Mann, "has not established any system of education, the whole subject, of course, is left to individual enterprise. In such cases, a few men,—always a small minority,—who appreciate the value of knowledge, will establish schools suited to their own wants. The majority will be left without any adequate means of instruction, and hence the mass will grow up in ignorance. Here the foundation of the greatest social inequalities is laid. Wherever this social inequality is once established, its tendency is to go on increasing and redoubling from generation to generation. And this is but a part of the evil. Suppose, after the existence, though only for a short period, of such a state of things, some more philanthropic or more statesman-like class of the community attempts to substitute a universal for the partial system. Their wise and benevolent project immediately encounters the opposition of those who are already provided for. Why should we, say the latter, after having incurred trouble and expense in erecting schools suited to our wants, not only abandon them, but incur new trouble and expense in erecting schools for you? Thus the better educated classes of the community, who ought to be the promoters of knowledge and refinement among their inferiors, stand as a barrier against improvements. The private teachers form another obstacle. In such a state of things as I have supposed, they stand towards each other in the relation of competitors; but their interest prompts them to unite against the introduction of a new class of schools which would diminish the patronage bestowed upon their own. When the 'Central Society of Education,' in England, were lately prosecuting their inquiries in regard to the relative numbers of children in school and out of school, in different towns, they were obliged to proceed with the greatest caution, lest they should alarm the fears of the private teachers, and obtain either no answers or false answers to their questions; and in some instances, these teachers combined and sent out forged lists of schools and scholars, in order to diminish the force of the argument for a national system, by shewing that schools enough already existed. This fact was communicated to me by a gentleman engaged in the inquiry. Another evil is, that the partial system, or rather the absence of system, so far from being attended with less expense than the universal, is always attended with greater." (Pp. 28-30.)

He observes that, among the most highly civilized and

conspicuous nations of Europe, the kingdoms of Prussia and Saxony, together with some of the western and south-western states of the Germanic Confederation, undoubtedly stand pre-eminent, both in regard to the quantity and the quality of instruction.

After these should come Holland and Scotland,—the provision for education in the former being much the most extensive, while in the latter perhaps it is a little more thorough. Ireland, too, has now a National system, which is rapidly extending, and has already accomplished a vast amount of good. The same may be said of France. Its system for National education has now been in operation for about ten years; it has done much, and promises much more. During the very last year, Belgium has established such a system; and before the revolution of 1830, while it was united with Holland, it enjoyed that of the latter country. England is the only one among the nations of Europe, conspicuous for its civilization and resources, which has not, and never has had, any system for the education of its people. And it is the country where, incomparably beyond any other, the greatest and most appalling social contrasts exist,—where, in comparison with the intelligence, wealth, and refinement of what are called the higher classes, there is the most ignorance, poverty, and crime, among the lower. (Pp. 31, 32.)

Mr Mann then adverts to the Charitable Bequests for educational purposes in England, the enormous amount, and, in many instances, disgraceful perversion of which are strikingly exhibited by him. Too frequently, where a large endowment exists, it has been appropriated by unprincipled selfishness as a fund of individual emolument; and just so much duty has been performed in the way of teaching, as sufficed to afford a colourable pretext for drawing the annual revenue of the institution. Where *small* sums have been bequeathed, they seem to have attracted only benevolent and efficient minds, and great educational advantages have been reaped from the scantiest pecuniary endowments. Mr Mann cites a number of examples of the misapplication of these charitable bequests, and altogether presents such a vivid picture of the dereliction of duty by the English nation, and more especially by the aristocracy and Established Church, in reference to the education of the people, as should bring the blush into every countenance on contemplating it. We are loud and eloquent (and on good grounds) in our denunciations of American slavery and repudiation; but there is no vehemence of declamation, and no amount of moral indignation, which might not be justly retorted upon England by most of the States of the American Union in regard to her neglect of the education of her common people.

The next section is devoted to **SCHOOLHOUSES**. In Scotland, and in some parts of England, says Mr Mann, “the

schools for the poorer classes were crowded to a degree of which we have never seen an example, and of which we can hardly form a conception." In Prussia and the other states of Germany the schoolhouses are of a very humble character; but one most valuable feature belongs to those of the large kind. They are uniformly divided into class-rooms, and an entire room is appropriated to each class, so that there is no interruption of one class by another. In no single public school in all Germany did Mr Mann see an instance in which each scholar or each two scholars had a desk to themselves. Backs to the seats, too, were almost as rare as single desks. In many places in Holland arrangements have been made on scientific principles for warming and ventilating the school-rooms, but in Germany never. "In the schools of the latter country, whether high or low, there was an astonishing degree of ignorance or inattention to the laws of health and life, so far as they depend upon breathing pure air. The atmosphere of the rooms was often intolerable. . . . Were one to attempt a philosophical explanation of that lethargy of character, that want of activity and enterprise, for which the Germans are so proverbial, I think he would fail of a just solution of the problem, if he left out of the account the errors of their physical training. . . . What benefits, then, must flow to mankind from a universal knowledge and practice of the principles of the beautiful and noble science of physiology!"

The next section relates to READING-BOOKS. "A great proportion of the pieces which make up our (American) compilations, consist of oratorical, sentimental, or poetical pieces. The foreign reading books, on the other hand, partake more largely of the practical or didactic. Ours savour more of literature or belles lettres; theirs of science and the useful arts." Mr Mann gives the contents of some of the reading books used in Germany and in Britain.

In the next section, the APPARATUS, &c., used in schools is adverted to. Mr Mann notices in particular the infant schools of England and Scotland as being admirably supplied with abundant and appropriate apparatus. "*In Holland*," says he, "*I saw what I never saw elsewhere, but that which ought to be in every school,—the actual weights and measures of the country.*" These were used not merely as means of conveying useful knowledge, but of mental exercise and cultivation." The italics are Mr Mann's, and are employed to indicate the importance which he attaches to this apparatus. We may take credit to ourselves for having, so long ago as 1831, pointed out the absurdity of the method in which weights and

measures have hitherto been generally taught, and strongly urged the desirableness of substituting the weights and measures themselves for the words by which they are called. (See vol. vii., p. 234). In Holland, large sheets or cards, containing fac-similes of the inscription and relief—face and reverse—of all the current coins of the kingdom, are hung upon the walls of the room. The great Burger and Real schools are generally supplied with fine instruments for lessons and practice in natural philosophy, chemistry, and mechanics. “In Germany, where everything (excepting war and military affairs) is conducted on an inexpensive scale, the walls of the schoolrooms were often adorned with cheap engravings and lithographs,—of distinguished men, of birds, beasts, and fishes; and, in many of them, a cabinet of natural history had been commenced. And throughout all Prussia and Saxony, a most delightful impression was left upon my mind by the character of the persons whose portraits were thus displayed. Almost without exception, they were likenesses of good men rather than of great ones,—frequently of distinguished educationists and benefactors of the young, whose countenances were radiant with the light of benevolence, and the very sight of which was a moral lesson to the susceptible hearts of children. In this respect, they contrasted most strongly with England, where the great always takes precedence of the good, and there are fifty monuments and memorials for Nelson and Wellington to one for Howard or Wilberforce.” (P. 56.) Dr Hodgson adds to this part of the text a note, enforcing the remark, that “it is not easy to overrate the importance of this suggestion for the *useful ornament* of schools.”

The next section is entitled “SCOTCH SCHOOLS.” “There are some points in which the schools of Scotland are very remarkable. In the thoroughness with which they teach the *intellectual* part of reading, they furnish a model worthy of being copied by the world. Not only is the meaning of all the important words in the lesson clearly brought out, but the whole class or family of words, to which the principal word belongs, are introduced, and their signification given. The pupil not only gains a knowledge of the meaning of all the leading words contained in his exercise, but also of their roots, derivatives, and compounds; and thus is prepared to make the proper discriminations between analogous words whenever he may hear or read them on future occasions.” (P. 59.)

Mr Mann remarks also that the Scotch schools exhibited specimens of extraordinary activity both in the scholars and

teachers. He then describes very graphically several *scenes* in a Scotch school, illustrative of this remark. Dr Hodgson adds at the bottom of the page the following note, in which we entirely concur:—"This description of *certain* Scotch schools is most accurate; but it would be a very serious error to suppose that it is applicable to *all*, or even to a majority of the schools in Scotland."

Mr Mann next proceeds to treat of the PRUSSIAN AND SAXON SCHOOLS, SUBJECTS TAUGHT, MODES OF TEACHING, GOVERNING, &c. The section on these subjects is particularly rich in practical instruction, and we regret the impossibility of presenting as much of it as is desirable. After noticing the schools and orphan-houses of the German States, Mr Mann remarks that—

Another class of institutions should challenge the admiration of all civilized people, and be imitated in every nation. I refer to schools established in connexion with prisons. When a Prussian parent has forfeited his liberty by the commission of a crime, and is therefore sequestered from society and from his family, his children are not left to abide the scorn of the community, nor abandoned to the tender mercies of chance. The mortification of having a disgraced parent seems enough, without the life-long calamity of a neglected youth. Hence such children are taken and placed under the care of a wise and humane teacher, who supplies to them that parental guidance which it has been their affliction to lose. Indeed, such care is taken in selecting the teachers of these schools, that the transfer into their hands generally proves a blessing to the children. Thus society is saved from the depredations and the expense of a second, perhaps of a third and fourth generation of criminals, through these acts of foresight and prevention,—acts which are as clearly connected with sound worldly policy as with those higher moral and religious obligations, which bind the conscience of every citizen and legislator.

Prussia and Saxony have still another class of institutions, of the most beneficent description ever devised by man. These are reformatory establishments for youthful offenders; or, as they are most expressively and beautifully called in the language of the country, "Redemption Institutes." The three principal establishments of this class which I visited, were, one at Hamburgh, under the care of Mr Wichern; one just outside the Halle gate of the city of Berlin, superintended by Mr Kopf; and one at Dresden, under Mr Schubert. (Pp. 75, 76.)

An account of the institution in the neighbourhood of Hamburgh, under Mr Wichern, called the Rauhe Haus, will be found in this Journal, vol. xviii., p. 205. "One peculiar feature," says Mr Mann, "of this institution is, that the children are not stimulated by the worldly motives of fame, wealth, or personal aggrandisement. When I put to Mr Wichern the question in what manner he produced these

transforming effects upon his charge, his answer was, 'By active occupations, music, and Christian love.'" Mr Mann continues:—

During the ten years of the existence of this institution, there have been one hundred and thirty-two received it. Of these about eighty were there on the 1st July 1843. Only two had run away, who had not either voluntarily returned, or, being brought back, had not voluntarily remained. The two unreclaimed fugitives committed offences, fell into the hands of the civil magistrates, and were imprisoned.

Who can reflect upon this history, where we see a self-sacrificing man, by the aids of wisdom and Christian love, exorcising, as it were, the evil spirits from more than a hundred of the worst children whom a corrupted state of society has engendered;—who can see this, without being reminded of some case, perhaps within his own personal knowledge, where a passionate, ignorant, and perverse teacher, who, for the sake of saving a few dollars of money, or from some other low motive, has been put in possession of an equal number of fine-spirited children, and has, even in a shorter space of time, put an evil spirit into the bosom of them all? When visiting this institution, I was reminded of an answer given to me by the head master of a school of a thousand children, in London. I inquired of him, what moral education or training he gave to the scholars,—what he did, for instance, when he detected a child in a lie? His answer was literally this:—"I consider," said he, "all moral education to be a humbug. Nature teaches children to lie. If one of my boys lies, I set him to write some such copy as this,—'Lying is a base and infamous offence;'—I make him write a quire of paper over with this copy; and he knows very well that if he does not bring it to me in a good condition, he will get a flogging." On hearing this reply, I felt as if the number of things, in the condition of London society, which needed explanation, was considerably reduced!

What is most remarkable in reference to the class of institutions now under consideration, is the high character of the men—for capacity, for attainments, for social rank—who preside over them. At the head of a private orphan-house in Potsdam is the venerable Von Turk. According to the laws of his country, Von Turk is a nobleman. His talents and acquisitions were such that at a very early age he was elevated to the bench. This was, probably, an office for life, and was attended with honours and emoluments. He officiated as judge for fourteen years; but in the course of this time, so many criminal cases were brought before him for adjudication, whose only cause and origin were so plainly referable to early neglect in the culprit's education, that the noble heart of the judge could no longer bear to pronounce sentence of condemnation against the prisoners; for he looked upon them as men, who, almost without a paradox, might be called *guiltless offenders*. While holding the office of judge he was appointed school inspector. The paramount importance of the latter office grew upon his mind as he executed its duties, until, at last, he came to the full conception of the grand and sacred truth,—how much more intrinsically honourable is the vocation of the teacher, who saves from crime and from wrong, than that of the magistrate who waits till they are committed, and then avenges them.

He immediately resigned his office of judge, with its life-tenure and its salary; travelled to Switzerland, where he placed himself under the care of Pestalozzi; and, after availing himself for three years of the instructions of that celebrated teacher, he returned to take charge of an orphan asylum. Since that time he has devoted his whole life to the care of the neglected and destitute. He lives in as plain and inexpensive a style as our well-off farmers and mechanics, and devotes his income to the welfare of the needy. (Pp. 89-91.)

The next section is on CLASSIFICATION; following which is one on THE METHOD OF TEACHING YOUNG CHILDREN ON THEIR FIRST ENTERING SCHOOL. "About twenty years ago," says Mr Mann, "teachers in Prussia made the important discovery that children have five senses,—together with various muscles and mental faculties,—all which, almost by a necessity of their nature, must be kept in a state of activity, and which, if not usefully, are liable to be mischievously employed. Subsequent improvements in the art of teaching have consisted in supplying interesting and useful, instead of mischievous, occupation for these senses, muscles, and faculties. Experience has now proved that it is much easier to furnish profitable and delightful employment for all these powers, than it is to stand over them with a rod and stifle their workings, or to assume a thousand shapes of fear to guard the thousand avenues through which the salient spirits of the young play outward. Nay it is much easier to keep the eye and hand and mind at work together, than it is to employ any one of them separately from the others. A child is bound to the teacher by so many more cords, the more of his natural capacities the teacher can interest and employ." (Pp. 94, 95.) He describes graphically the manner in which able teachers command the attention, and draw forth the affections of the children. "This," says he, "is the result of talent, of attainment, and of the successful study both of men and of things; and whoever has a sufficiency of these requisites will be able to command the attention of children, just as a powerful orator commands the attention of men. But the one no more than the other is the unbought gift of nature. They are the rewards of application and toil superadded to talent." (P. 100.)

Mr Mann introduces a powerful demonstration of the absurdity of beginning the teaching of children to read, by instructing them in the *names* of the letters of the alphabet. In all the Prussian schools, "the uniform statement was that the alphabet, as such, has ceased to be taught *as an exercise preliminary to reading*, for the last fifteen or twenty years, by every teacher in the kingdom." He observes that the *name* given to the letter A in teaching the alphabet, in-

dicates only one long sound. "In an edition of Worcester's Dictionary before me, I find more than three thousand words whose initial letter is *a*; and yet amongst all these there are not an hundred words in which this initial letter has the long or alphabetical sound;—that is, the cases are more than thirty, where the young reader would be wrong if he followed the instruction given him, to onewhere he would be right." (P. 107.) He shews that the same remark applies to the names of all the other letters.

This subject (he continues) might be further illustrated by reference to other languages,—the Greek, for instance. Will the names of the letters, *kappa*, *omicron*, *sigma*, *mu*, *omicron*, *sigma*, make the word *kosmos*? And yet these letters come as near making that word as those given by Mr Ottiwell Wood, at a late trial in Lancashire, England, did to the sound of his own name. On Mr Wood's giving his name to the court, the judge said, "Pray, Mr Wood, how do you spell your name?" to which the witness replied;—"O double T, I double U, E double L, double U, double O, D." In the anecdote it is added, that the learned judge at first laid down his pen in astonishment; and then, after making two or three unsuccessful attempts, declared he was unable to record it. Mr Palmer, from whose Prize Essay this anecdote is taken, gives the following account of the manner in which children were taught to read the first sentence in Webster's old spelling-book;—*En-o*, no, *emm-ai-en*, man, *emm-ai-wy*, may, *pee-you-tee*, put, *o-double-eff*, off, *tee-aitch-ee*, the, *ell-ai-double-you*, law, *o-eff*, of, *gee-o-dee*, God. (P. 111.)

The section on GRAMMAR AND COMPOSITION is interesting and instructive; as is also that on WRITING AND DRAWING. Mr Mann found drawing taught in all the schools of Germany; and he thinks that it forms an admirable introduction to the art of writing.

The section on GEOGRAPHY contains striking illustrations of the use made of the accomplishment of drawing in teaching and learning geographical science.

The next section is entitled EXERCISES ON THINKING; KNOWLEDGE OF NATURE; KNOWLEDGE OF THE WORLD; KNOWLEDGE OF SOCIETY. "In the study-plan," says the author, "of all the schools in the north of Prussia, I found most, and in some of them all, of the above subjects of lessons. To each was assigned a separate hour and place in the routine of exercises." He gives a variety of instructive details. The Prussian children are not taught the mere technical names in science.

For years (says he) their lessons are free from all the technicalities of science. The knowledge they already possess about common things is made the nucleus around which to collect more; and the language with which they are already familiar becomes the medium through which to communicate new ideas, and by which, whenever necessary, to explain

new terms. There is no difficulty in explaining to a child, seven years of age, the distinctive marks by which nature intimates to us, at first sight, whether a plant is healthful or poisonous ; or those by which, on inspecting the skeleton of an animal that lived thousands of years ago, we know whether it lived upon grass, or grain, or flesh. It is in this way that the pupil's mind is carried forward by an actual knowledge of things, until the time arrives for giving him classifications and nomenclatures. When a child knows a great many particular or individual things, he begins to perceive resemblances between some of them ; and they then naturally assort themselves, as it were, in his mind, and arrange themselves into different groups. Then, by the aid of a teacher, he perfects a scientific classification among them, bringing into each group all that belong to it. But soon the number of individuals in each group becomes so numerous, that he wants a cord to tie them together, or a vessel in which to hold them. Then, from the nomenclature of science, he receives a name which binds all the individuals of that group into one, ever afterwards. It is now that he perceives the truth and the beauty of classification and nomenclature. An infant that has more red and white beads than it can hold in its hands, and, to prevent them from rolling about the floor and being lost, collects them together, putting the white in one cup and the red in another, and sits and smiles at its work, has gone through with precisely the same description of mental process that Cuvier and Linnaeus did, when they summoned the vast varieties of the animal and vegetable kingdoms into their spiritual presence, and commanded the countless hosts to arrange themselves into their respective genera, orders, and species. . . . But the Prussian teacher has no book. He needs none. He teaches from a full mind. He cumbers and darkens the subject with no technical phraseology. He observes what proficiency the child has made, and then adapts his instructions, both in quality and amount, to the necessity of the case. He answers all questions. He solves all doubts. It is one of his objects, at every recitation, so to present ideas, that they shall start doubts and provoke questions. He connects the subject of each lesson with all kindred and collateral ones ; and shews its relation to the everyday duties and business of life ; and should the most ignorant man, or the most destitute vagrant in society, ask him " of what use such knowledge can be ? " he will prove to him, in a word, that some of his own pleasures or means of subsistence are dependent upon it, or have been created or improved by it.

In the mean time the children are delighted. Their perceptive powers are exercised. Their reflecting faculties are developed. Their moral sentiments are cultivated. All the attributes of the mind within, find answering qualities in the world without. Instead of any longer regarding the earth as a huge mass of dead matter,—without variety and without life,—its beautiful and boundless diversities of substance, its latent vitality and energies, gradually dawn forth, until, at length, they illuminate the whole soul, challenging its admiration for their utility, and its homage for the bounty of their Creator. (Pp. 146-150).

In all the Prussian Protestant schools, Luther's Catechism is regularly taught ; and in all the Roman Catholic schools, the Catechism of that communion. Mr Mann says—

So far as the Bible-lessons are concerned, I can ratify the strong statements made by Professor Stowe, in regard to the absence of sectarian instruction, or endeavours at proselytism. The teacher being amply possessed of a knowledge of the whole chain of events, and of all biographical incidents; and bringing to the exercise a heart glowing with love to man, and with devotion to his duty as a former of the character of children, has no necessity or occasion to fall back upon the formulas of a creed. It is when a teacher has no knowledge of the wonderful works of God, and of the benevolence of the design in which they were created; when he has no power of explaining and applying the beautiful incidents in the lives of prophets and apostles, and, especially, the perfect example which is given to men in the life of Jesus Christ; it is then, that, in attempting to give religious instruction, he is, as it were, constrained to recur again and again to the few words or sentences of his form of faith, whatever that faith may be; and, therefore, when giving the second lesson, it will be little more than a repetition of the first; and the two hundredth lesson, at the end of the year, will differ from that at the beginning only in accumulated wearisomeness and monotony. (Pp. 152, 153.)

The next sections are entitled MUSIC, and SEMINARIES FOR TEACHERS. Music is universally taught in the German schools, and with the best effects. During the whole period of Mr Mann's tour, says he, in reference to teachers, "1. I never saw a teacher hearing a lesson of any kind (excepting a reading or spelling lesson) *with a book in his hand*. 2. I never saw a teacher *sitting* while hearing a recitation. 3. Though I saw hundreds of schools, and thousands—I think I may say, within bounds, tens of thousands—of pupils, *I never saw one child undergoing punishment, or arraigned for misconduct. I never saw one child in tears from having been punished, or from fear of being punished.*" (Pp. 162, 163.) "In Prussia and in Saxony, as well as in Scotland, the power of commanding and retaining the attention of a class is held to be a *sine qua non* in a teacher's qualifications. If he has not talent, skill, vivacity, or resources of anecdote and wit, sufficient to arouse and retain the attention of his pupils during the accustomed period of recitation, he is deemed to have mistaken his calling, and receives a significant hint to change his vocation." (Pp. 167, 168.)

Mr Mann makes the following remarks on the interesting question, whether female teachers should be employed in schools. "In former reports, we have dwelt at length upon the expediency of employing female teachers, to a great extent, in our schools. Some of the arguments in favour of this change have been, the greater intensity of the parental instinct in the female sex, their natural love of the society of children, and the superior gentleness and forbearance of their dispositions,—all of which lead them to mild-

ness rather than severity, to the use of hope rather than of fear as a motive of action, and to the various arts of encouragement rather than to annoyances and compulsion, in their management of the young. These views have been responded to and approved of by almost all the school committeemen in the State ; and, within the last few years, the practice of the different districts has been rapidly conforming to this theory." (P. 173). Mr Mann remarks in a foot-note, that, "in the admirably conducted school of the Messrs Hill at Bruce Castle, near London, much of the instruction, even of boys, is entrusted to ladies, and, I believe, with the best results." Dr Hodgson, in a note appended by him to the same page, quotes a report on the Mechanics' Institution of Liverpool, dated in August 1845, in which it is mentioned that the female teachers in the girls' school attached to that Institution, "have an abundant reward in the success of their instructions, and in the entire removal of every doubt that may have anywhere existed as to the policy of committing the main branches of regular instruction to ladies."

In some of the German states, the law requires apprentices to attend school a certain number of evenings in every week. In one of these states, I was informed that complaint had been made by the apprentices, because they were deprived of the disposal of their own time, and were obliged to defray the expense of tuition at school out of their pocket-money. To obviate this complaint, the law was changed. All apprentices were still obliged to pay a tuition fee, but the government remitted the payment in favour of those who attended it, exacting it only of the absentees.

In most, if not in all the German cities which I visited, I found Sunday Schools in active operation. These are established, not, as with us, for the purpose of giving moral or religious, but secular instruction. Their exercises consist mainly in reading, writing, composition, arithmetic, geography, drawing, and so forth. They are attended principally by apprentices, labourers, and others, whose age for attending the elementary schools has passed, and who are engaged, during the week days, in their respective industrial employments. (P. 196).

Mr Mann answers the objections of Mr Laing the traveller against the Prussian system of education, founded on its apparent results. He justly remarks, that this system has been in practice for scarcely more than one generation, and that a much longer period is necessary to change the character of a people ; farther, that the political institutions of Prussia, and of Germany generally, after having prepared the youthful mind for a life of intelligent thinking and moral action, deny him all scope for mental activity beyond the domestic circle ; the effect of which is, to render fruitless a great portion of the education which has been bestowed, and to reduce the faculties to a state of indolence and torpor through want

of adequate fields of exercise. These reasons we consider well-founded and satisfactory. But we go a step farther in answer to Mr Laing. We have resided in Germany and know something of the spirit and condition of the people; and it appears to us that although, when compared with the Americans and British, the Germans may be said to be inert, passive, and deficient in enterprise and practical talent, yet, compared with their ancestors before this system of education was instituted, their improvement is indescribably great. We have lived in some of the neglected spots of Germany, where, from the smallness and poverty of the principedom, education has been almost wholly overlooked; and the ignorance, inactivity, and actual stupidity of the people were so great, as almost to make us believe that they belonged to a different race. On the other hand, wherever the schools have been in full operation for fifteen or twenty years, we found the young generation alert, intelligent, conversable, docile, and ready to be carried forward in the march of improvement to the full extent of their natural capacities (which, in the German race, are high in both the moral and the intellectual departments), whenever external circumstances shall permit their advance.

The next two sections of Mr Mann's work are on CORPORAL PUNISHMENT and EMULATION. He is adverse to emulation as a stimulus in schools. It is now discountenanced in Prussia and Saxony, but is vigorously plied in Scotland, and still more so in France.

Who (says Mr Mann) that is conversant with the history of France does not see how much of her poverty, her degradation and her suffering, even in the proudest periods of her annals, is directly attributable to this inordinate love of praise; and especially, how much of the humiliation of later times,—when the charm of her invincibility was broken, and she was obliged to ransom herself from the grasp of her conquerors by the gold wrung from her toiling millions,—is directly traceable to the predominance in her character of this love of applause? It was this blind passion for glory which created Bonaparte, and which sustained him not less faithfully in all his vast schemes of wickedness than in his plans for improvement. “Had the Romans not been sheep, Cæsar had not been a wolf.”

Among all the nations of Christendom, our own is perhaps second only to France in the love of approbation as a prompter and guide to action. Ought we, then, to cultivate this passion, already of inordinate growth, by the use of emulation in our schools?

On a former page, (ante, 64,) when speaking of modes of instruction in the Scotch schools, I have incidentally described the skill and power with which their teachers wield the lash of emulation. I recur to the subject again, only to observe, that this motive is not confined, in

Scotland, to the lower grades of schools, but bears equal sway in colleges and universities; that it is not employed in imparting secular education only, but is an instrument equally welcome, and made equally efficient, in giving religious instruction. (P. 216.)

Mr Mann then gives an example of what he saw and heard in a Scotch school, where emulation was liberally employed in teaching the most solemn articles of religion.

Teacher. What sort of death was denounced against our first parents for disobedience?

1st Pupil. Temporal death.

T. No, (and pointing instantaneously to the second.)

2d P. To die.

The teacher points to the third, crying, "Come away!"—and then to the fourth,—a dozen pupils leap to the floor, a dozen hands are thrust out, all quivering with eagerness.

4th P. Spiritual death.

T. Go up, *Dux*, (that is, take the head of the class.)

And so of the following, from the Westminster Catechism, which, with all the proofs, is committed to memory.

Teacher. What is the misery of that estate whereunto man fell?

Pupil. All mankind, by their fall, lost communion with God, are under his wrath and curse, and so made liable to all the miseries of life, to death itself, and to the pains of hell for ever, (giving the proofs).

T. What sort of a place is hell?

P. A place of devils.

T. How does the Bible describe it?

1st P. (Hesitates).

T. Next. Next. Next.

5th P. A lake of fire and brimstone.

T. Take 'em down four.

And thus, on these awful themes, a belief and contemplation of which should turn the eyes into a fountain of tears, and make the heart intermit its beatings, there is the same ambition for intellectual superiority as on a question in the multiplication table. There is no more apparent solemnity in the former case than the latter.

Nor is this mode of treating sacred themes confined to the schools. In the universities, money is employed to stimulate theological effort; and a sordid, financial aspect is given to the holiest subjects. For instance, in looking over the published list of prize questions, in the Glasgow University, for the last two or three years, I find the following offers:—

"The University Silver Medal, for the best Essay on the Analogy of the Mosaic and Christian dispensations."

Other prizes of various values are offered for the best essay on such subjects as the following:—

"For the best Lecture on 1 John, ch. iii. 1-6. All students of divinity in this University, during the session 1843-4, may be competitors."

"For the best Essay on 'the Goodness of God,' by students of the third and fourth year."

" For the best Discourse on John xiv. 27."

" For an Essay on the character of Christ."

" For the best specimen of reading the Holy Scriptures."

" For the best Lecture on the 35th chapter of Isaiah."

" Prize for Essay from students of the second year; subject, ' The Personality of the Holy Ghost.' "

Thus the sordidness of worldly motives is for ever mingled with the purity of sacred themes; men are addressed as though piety dwelt in the purse and not in the heart; and the holiness of God's nature and the sanctity of the divine commands are flung wantonly into the ring, to be fought for with dialectic weapons, by hired wrestlers and prize-fighters. What value would the New Testament retain in our eyes, had the Gospels and Epistles been prize essays, penned by money-loving disciples and apostles, for so many Jewish shekels or talents! (Pp. 217-220.)

There is a valuable section on MORAL AND RELIGIOUS INSTRUCTION. " In Holland, all doctrinal religious instruction is excluded from the schools. The Bible is not read in them. Children are permitted to withdraw at a certain hour to receive a lesson in religion from their pastors, but this is not required. It is optional to go or remain." In England, as there is neither law nor system on the subject of education, each teacher, with some exceptions, does as he pleases. In Scotland, " although there is no law prescribing the quality of religious instruction to be given, yet there is a public opinion not less authoritative than law;—a public opinion, indeed, whose peremptory demands are more sure to be obeyed without the sanctions of law, than a law would be without the exactions of this public opinion. After the particular attention which I gave to this subject, both in England and Scotland, I can say without any exception, that, in those schools where religious creeds, and forms of faith, and modes of worship were directly taught, I found the common doctrines and injunctions of morality, and the meaning of the preceptive parts of the Gospel, to be much less taught, and much less understood by the pupils, than in the same grade of schools, and by the same classes of pupils, with us." (P. 226.)

The remainder of this section is so important, that an attempt to do it justice within our present limits would be hopeless; we therefore here conclude, with the intention of resuming the subject in a subsequent Number. In the mean time we trust that enough has been said to induce many of our readers to peruse and disseminate the work itself, which has been handsomely reprinted by Dr Hodgson. In saying that his notes and appendix are worthy of the text, we bestow on them the highest commendation which can be given.

II. *The Power of the Mind over the Body: An Experimental Inquiry into the Nature and Cause of the Phenomena attributed by Baron Reichenbach and others to a "New Imponderable."* By JAMES BRAID, M.R.C.S.E. London: J. Churchill. Edinburgh: A. & C. Black. 1846. 18mo, pp. 36.

In lately giving an account of Baron Reichenbach's researches (see No. lxxxvii., p. 188), we remarked, that while that philosopher conceives the phenomena of the class called mesmeric to be excited by an influence analogous to magnetism, and supposed to be "a new imponderable," passing from the operator to the subject, Mr Braid explains them without the aid of such a theory, and in what he considers to be a more simple and natural way. In his present interesting little work, reprinted from the *Medical Times*, he sets forth in detail the reasons which dispose him to reject the conclusions of Reichenbach. In perusing Dr Gregory's "Abstract" of the researches in question, says he, "I had not proceeded far when my experience with hypnotic patients enabled me to perceive a source of fallacy, of which the Baron must either have been ignorant, or which he had entirely overlooked. From whatever cause this oversight had arisen, I felt confident that, however carefully and perseveringly he had prosecuted his experiments, and however well-calculated they had been for determining mere physical facts, still no reliance could be placed upon the accuracy of conclusions drawn from premises assumed as true, where especial care had not been taken to guard against the source of fallacy to which I refer—viz., the important influence of the *mental* part of the process, which is in active operation with patients during such experiments.* I therefore re-

* "Let it not be supposed that I intend by these observations to impute to Baron Reichenbach any want of ordinary caution, or even the strictest desire to guard against sources of fallacy of every sort. From what is recorded at pp. 13, 50, and 81, of the 'Abstract,' it is obvious that he had taken great precautions, and such, indeed, as would have been quite adequate to effect such purpose under ordinary circumstances. Moreover, I most cordially admit that a better devised series of experiments, or a more laborious and painstaking effort, for determining the question on strictly inductive principles, I have never met with in any department of science. Nor is small praise due to Professor Gregory, for the masterly manner in which he has performed his part of the task. Still, when the extraordinary acuteness of the organs of special sense is taken into account, to which reference is made at p. 2 of the 'Abstract,' where it is admitted that 'smell and taste become astonishingly delicate and acute;' vision so irritable that patients 'are able, in very dark rooms, to distinguish not only the outlines, but also the colours of objects, where healthy people cannot

solved to repeat his experiments, paying the strictest attention to this point; and, as I had anticipated, the results were quite opposed to the conclusions of Baron Reichenbach. It is with considerable diffidence that I venture to publish an opinion opposed to such high authority; but I shall briefly state the grounds of my own opinion, and leave it to others to repeat the experiments, and determine which opinion is nearer the truth." (P. 4.)

Mr Braid accounts it unfortunate that the only test of the alleged new imponderable (with one solitary exception, that of the daguerreotype, from which, on trial, he failed to obtain the results detailed by Reichenbach) is the human nerve; "and not only so, but it is further admitted that its existence can only be demonstrated by certain impressions imparted to, or experienced by, *a comparatively small number of highly sensitive and nervous subjects*. But it is an undoubted fact that with many individuals, and especially of the highly nervous, and imaginative, and abstractive classes, a strong direction of consciousness to any part of the body, especially if attended with the expectation or belief of something being about to happen, is quite sufficient to *change the physical action of the part, and to produce such impressions from this cause alone, as Baron Reichenbach attributes to his new force*. Thus every variety of feeling may be excited from an *internal* or

distinguish anything at all; and that 'patients hear and understand what is spoken three or four rooms off;' I say, when these facts are taken into consideration, coupled with the excitable state of their minds, it will readily be admitted, that with all the precautions resorted to by Baron Reichenbach, various ideas may have been conveyed to his secluded patients, through the ordinary channels, of which he had no suspicion. For example, slight sounds in conducting the experiments, may have been overheard by the patients, and indicated to them changes in the arrangements, of which the operator had no notion; tones of voice, in proposing questions, may have had an equally certain and unintended influence; and it is an undoubted fact, that, with such subjects, the slightest change in the concomitants always suggests a change in the fundamental or previously existing idea. Such being the case, I can imagine no satisfactory mode of determining the subject with such patients as the Baron experimented with in the stair-case, but having them placed beyond the range of hearing, even to their quickened ears. The conducting wires should be securely fixed by thumb-screws near their distal ends, so as to prevent any vibration taking place beyond, when changing arrangements, which should be performed with the least possible noise; and a single sound of a bell should be the only answer, unless the patient should wish voluntarily to express some intelligence as to impressions, which he ought to be at liberty to do at any time. I would also suggest that there ought to be no regular order in the experiments; and that changes should be made without sounding the bell; and occasionally, that the bell should be sounded repeatedly without any change having been made. On no account should the experiments be conducted where the patients can have ocular observation of the features or gestures of the investigators, even in apartments apparently dark. Such are the rigorous conditions I should consider requisite in the investigation of this subject, so as to guard against all obvious sources of fallacy."

mental cause—such as heat or cold, pricking, creeping, tingling, spasmodic twitching of muscles, catalepsy, a feeling of attraction or repulsion, sights of every form or hue, odours, tastes, and sounds, in endless variety, and so on, according as accident or intention may have suggested. Moreover, the oftener such impressions have been excited, the more readily may they be reproduced, under similar circumstances, through the laws of association and habit. Such being the fact, it must consequently be obvious to every intelligent and unprejudiced person, that no implicit reliance can be placed on the human nerve, as a test of this new power, in producing effects from *external* impressions or influences, when precisely the same phenomena may arise from an *internal* or *mental* influence, when no external agency whatever is in operation." (P. 6.)

In order to guard against this source of fallacy, Mr Braid threw into the "nervous sleep" certain patients whom he knew to have, in that state, no use of their eyes. He then drew over their hands, and other parts of the body, without contact, a magnet capable of lifting fourteen pounds; but "in no instance was the slightest effect manifested, unless when the magnet was brought so near as to enable the patient to feel the abstraction of heat (producing a sensation of cold), when a feeling of discomfort was manifested, with a disposition to move the hand, or head, or face, as the case might be, *from* the offending cause. This indication was precisely the same when the armature was attached, as when the magnet was open; and in both cases, if I suffered the magnet to *touch* the patient, instantly the part was hurriedly withdrawn, as I have always seen manifested during the primary stage of hypnotism, when the patients were touched with any *cold* object. Now, inasmuch as patients in this condition, generally, if not always, manifest their perceptions of external impressions by the most natural movements, unless the natural law has been subverted by some preconceived notion or suggested idea to the contrary, and as I have operated with similar results upon a considerable number of patients, we have thus satisfactory proof that there was no real attractive power of a magnetic or other nature, tending to draw the patient, or any of his members, so as to cause an adhesion between his body and the magnet, as between the latter and iron, as Baron Reichenbach had alleged." (P. 7.)

The phenomena described by Reichenbach as having occurred in his patients under the influence of the magnet, of crystals, of the human hand, &c., and the luminous appearances which those objects presented to them (see p. 183–5

of our 87th Number), are quoted by Mr Braid, who is "struck with the remarkable discrepancy in the descriptions given by the patients of what has been alleged as a physical fact." All expected, he presumes, to see light about the magnet, "and they saw light or flames accordingly;" but different patients saw flames of different colours and sizes, and even to the same patient they did not always appear alike. "Now to my mind," says he, "these discordant statements, as to the colour and size of the flames, are quite fatal to the notion of such representations proving a physical fact; and in an especial manner is that remark applicable to the statement of Mdlle. Reichel, who not only saw the colour different which was emanating from a *straight* bar magnet from that of the horse-shoe variety, but also described the *size* of the flame as larger from the *north* pole of the straight bar magnet than from the other end, whereas it was always seen by her, as well as by others, to be the same size at *both* poles of a *horse-shoe magnet*. If there be a physical reality in these alleged flames and colours, there ought to be no discrepancies of this sort; and the fact of such discordant statements having been made will tend to prepare the mind of the reader for the solution of the problem which I have now to submit." (P. 12.)* Mr Braid's solution is thus enunciated:—

I have already stated the wonderful power of the human mind, when consciousness is strongly directed to any part of a sensitive person, in changing physical action, and leading the subject to attribute to an *external* cause what may have arisen entirely from an *internal* or *mental* cause. It has also been stated that, when I resorted to a mode of operating which rendered the subjects more highly sensitive to external influences, and at the same time was calculated to obviate any source of fallacy, as to mental emotion or expectation being directed to the part from their seeing what was being done, the results were in direct opposition to what was represented as having been realised by the Baron. I have particularly adverted to this, in respect to the alleged attraction of the magnet for the human frame; I have proved it to be equally so in respect to the human hand, and crystals, &c., *where all sources of fallacy are guarded against*. In my experience, moreover, with such cases, no light or flames have been perceived by patients either from the poles of a magnet, crystals, the points of the fingers, or other substances, unless the patients have been previously penetrated with some idea of the sort, or have been plied with such questions as were calculated to excite no-

* It should be remembered that the same physical objects may vary in appearance, in consequence of differences in the state of the observer's organism; a colour, for instance, has an unusual appearance to a person who has just been gazing or some other bright colour. In answer to this remark, Mr Braid urges that there are discrepancies in the accounts of *size* as well as *colour*, given by Reichenbach's patients, and that it is highly improbable that perverted perception of *two* qualities of real physical objects of observation should occur.

tions, when various answers were given accordingly; and when in the sleep, there appeared an equal aptitude to see something, *when neither magnet nor fingers were in the direction indicated, as when they were*—a clear proof that the impressions were entirely imaginary, or mental in their origin. (P. 13.)

He proceeds to detail the results of experiments with patients when wide awake and when they had an opportunity of observing what was done, and expected to see something happen; and also when the same patients, prevented from observing the proceedings, and fancying that he was operating, expected something to occur, and consequently had the perception of phenomena of which there was no actual or outward existence.

The reports of these cases are highly interesting, and shew the powerful influence of suggestion on the mind. For instance, several patients whom he took into a dark closet could perceive nothing, until told that, on looking steadily at a certain point, they would see flame and light of varying colours, proceeding from it; which prediction was speedily realized, while they were wide awake, and with nothing but bare walls towards which to direct their eyes. Even in broad daylight, a strong mental impression is found by Mr Braid adequate to produce such delusions with certain individuals of a highly imaginative and concentrative turn of mind. A gentleman, twenty-four years of age, who had suffered severely from epilepsy for eleven years, was taken into the closet, "where he saw nothing till I suggested that he would see flame and light, after which predication he very speedily saw it accordingly, not merely where the magnet was, but also from other parts of the apartment. Now, this patient, and the last two referred to, when taken into the closet *after* the magnet had been a long time removed to a distant part of the house, still saw the flames and changing colours as before—a clear proof that the whole was a mental delusion, arising from an excited imagination, on the point under consideration, changing physical action." (P. 21.) Such patients, says Mr Braid, readily become the dupes of suggestions, without the least desire to deceive others, or the most distant idea that they are themselves deceived. He has tested all that he has advanced by so many concurrent examples, with individuals of the utmost probity, and competency to describe their feelings, that he thinks there can be no doubt of the facts. His patients, in the waking state, have been made to believe, not only that they saw various forms and colours, and perceived variable sensible impressions and irresistible powers, drawing, repelling, or paralyzing them; but that

they heard particular tunes, smelt particular odours, discriminated particular tastes, and felt heat or cold.

In repeating Baron Reichenbach's experiment with magnetized water, Mr Braid was careful to guard against all vitiating circumstances, "such as the varied tone of voice or look of the experimentalist, when investigating the subject, and trying to elicit from the patient his candid opinion as to the qualities of each glass of water. The results were, that none of the patients tried could detect, either by smell, taste, or any other sensible effect, any difference between the magnetized and the *unmagnetized* water. At each trial I made use of four similar glasses, filled to the same height, two of which, by the contact to the glass of a powerful magnet for a minute or two, were magnetized, the other two not magnetized. The patients were all first tested in this way when awake, and then when asleep. Magnetizing by passes, or breathing on the water, I should not consider a fair experiment, and for this reason, that the *halitus* of the breath, or from the skin, might very readily be detected by a highly sensitive patient, by *smell*, and *probably also by taste*. I have met with a patient who could very readily detect water so treated from that which had not; and I ascertained that she did so by *smell*. * * * * I feel confident that there are many, who, from their excited and concentrated state of mind, and quickened senses, will catch ideas far more quickly than in the ordinary condition, who may be thus imposed upon, and excited to act by means of impressions received through the senses, which would entirely escape them in the ordinary condition." (Pp. 24, 25.)

Baron Reichenbach speaks of the tranquillizing effect of placing sensitive patients with the head towards the north, and the discomfort of other positions of the body in reference to the magnetic meridian. In the only case tried by Mr Braid, he has found no such effect from change of position; but he has no doubt that sensitive patients, who have adopted the idea that one position will be more agreeable and beneficial than others, will straightway find their expectations realized. The light seen over graves, by some of Reichenbach's patients, is ascribed by Mr Braid to the phosphorescent and suggestively fetid products of the decomposition of animal substances. And from experiments with the daguerreotype, which are detailed on pages 27 and 28, he thinks himself "warranted to conclude, that no light, capable of affecting an iodized plate, is given out at the poles of magnets, as alleged from the experiments referred to by Baron Reichenbach."

Notwithstanding, however, the conclusions at which he has arrived, Mr Braid admits, that from the exalted sensibility of particular individuals, and their highly concentrative state of mind, they may be competent to detect electric, calorific, and physical qualities of objects, which would escape the observations of themselves and others, when in the ordinary and less sensitive condition; and whilst he denies that we have any satisfactory proof of this new imponderable passing from the operator to the patient, as alleged, during the process of the mesmerists, still he readily concedes that the operator, for the reason already assigned (of mental impression changing physical action), is very likely to feel an *aura* in his finger-ends,—the position, action, and mental direction, all tending to excite in them turgescence and increased sensibility.

Inasmuch as patients can throw themselves into the nervous sleep, and manifest all the usual phenomena of Mesmerism through their own unaided efforts, as I have so repeatedly proved by causing them to maintain a steady fixed gaze at any point, concentrating their whole mental energies on the idea of the object looked at; or that the same may arise by the patient looking at the point of his own finger, or as the Magi of Persia and Jogi of India have practised for the last 2400 years, for religious purposes, throwing themselves into their ecstatic trances by each maintaining a steady fixed gaze at the tip of his own nose; it is obvious that there is no need for an external influence to produce the phenomena of Mesmerism. The agency may be entirely personal or subjective, and in such cases as I have illustrated by extracts from Ward's History of the Hindoos and the Dabistan, through certain associations of ideas, such self-mesmerised patients can see and imagine as great, or indeed far greater wonders than are recounted by our most successful mesmerists of modern times, with the additional aid of their alleged mesmeric fluid. In proof of this I beg to refer to my paper in the *Medical Times*, page 272, vol. xi. The great object in all these processes, is to induce a habit of abstraction or concentration of attention, in which the subject is entirely absorbed with one idea, or train of ideas, whilst he is unconscious of, or indifferently conscious to, every other object, purpose, or action. (Pp. 30-31.)

Though opposed to the *theory* of Reichenbach and of such mesmerists as believe in animal magnetism, Mr Braid points out that, in all the more important respects, his own experiments and observations "directly confirm the reality of the facts, as to the power which we possess of artificially producing certain phenomena by certain processes; as also of intensifying effects which arise in a minor degree spontaneously, or by the patient's own unaided efforts."

To this brief account of Mr Braid's publication, we are happy to be able to subjoin the following observations by Professor Gregory, who, we may add, has transmitted a copy of it to Baron Reichenbach himself. After mentioning that his time

is so much occupied in the preparation of several chemical works for the press, that he cannot do more at present than make a very few remarks, he proceeds:—

"Mr Braid has certainly shewn, that in some cases the power of suggestion is very great; but in all these cases the suggestion was distinct, and was employed. It seems to me unreasonable to attribute to this power the phenomena observed where suggestion was carefully avoided.

"I have myself seen a boy who, being shut up in the dark, with a wire in his hand, without the remotest hint of what was expected, described a green vaporous light rising from the wire as often as he placed the other end in effervescing mixture. When I attached it to a magnet, he no longer spoke of light; except at the first moment, and then described a hot current or thrill proceeding into his hand. Afterwards, when I repeated the first experiment he saw no light, although he now knew what was expected. This may have been owing to some change in the wire.

"The same boy could distinguish the poles of a large crystal of rock-salt, by touch, as alternately warm and cold. I marked the poles, and repeated the experiment frequently, but he never varied, although he did not use his eyes.

"I know a lady, who has been in feeble health for a long time, and has had for years many sensations which she recognised in Reichenbach's description. She particularly mentioned the strange influences of the sun and moon described by him, as being familiar to her; and she is quite sensitive to the discomfort of a position at right angles to the magnetic meridian.

"This lady, and six other individuals, all saw, with perfect distinctness, in a totally dark room, what I could not see, a bright light from a crystal of fluor-spar. I can see perfectly the phosphorescence of fluor-spar when heated, but not this light. I tried the experiment in every possible way; I hid the crystal, and brought it out in any part of the room, &c.; they all, without hesitation, placed their hands on it.

"Of about sixty persons whom I have tried, at least nine-tenths perceive an aura, hot or cold, or a pricking, or a pain, when certain crystals are drawn along near the hand. The remainder, in spite of suggestion, feel nothing.

"I have only seen one sensitive person, a female, who felt severe pain and heat from most crystals. When the fluor-spar was tried, she declared she felt nothing; and after repeated inquiries, she still declared the same, although she must have understood what I thought likely. But, on removing the crystal, which I had held over her hand for some minutes, there

appeared what I did not at all expect. The hand was paralyzed, both in regard to motion and sensation, and this accounted for her not feeling anything. The effect lasted a few minutes. This same individual could not endure, for half a second, the effect of my crossing my hands, and holding her right in my right, and her left in my left hand.

"My occupations have not permitted me to make more than a few trials, but I am satisfied that much remains to be learned as to these obscure influences. Meantime, Reichenbach has been pursuing his researches with great success. He tells me that he has had forty-five sensitive subjects in all, of whom *fifteen are in perfect health*; so that he now never thinks of making use of diseased subjects of any kind. This is an important step, inasmuch as it excludes the objection of hysteria, &c. In my opinion, the evidence derived from hysterical and cataleptic patients is equally valuable with that obtained from persons in health; because, in both cases, we observe the results of the same natural laws. It is only necessary that the facts should be well observed. The phenomena in healthy persons, says Reichenbach, have confirmed his earlier observations; and it is well that objectors must now give up the objections founded on the morbid state of the subjects, even although these objections have no force against well-observed facts."

We look forward with interest to the arrival of farther accounts of Baron Reichenbach's proceedings, and shall return to the subject as soon as any new facts of value can be laid before our readers.

III. *The Popular Record of Modern Science: A Journal of Philosophy and General Information.* London: Miles Coe, 67 Strand. Nos. 40 to 75;—Jan. to Sept. 1846.

The *Popular Record* is one of those cheap weekly periodicals which now issue so abundantly from the press, and the higher class of which—including the *Record* itself—are doing so much for the improvement and enlightenment of the masses. It is conducted with great ability, liveliness, and independence; and, although not free from the influence of prejudices of its own, it is, from its general tone and matter, well calculated to foster in its readers the habit of close and deliberate thinking, and a tendency to bring every proposition and action to the test of *principle*, without respect to the prevailing opinions of the day. Notwithstanding the freedom with which doctrines and men and measures are criticised, in the departments of morals, medicine, mesmerism, law, politics, literature, phi-

losophy, and human affairs in general, there is seldom anything offensive in the style of treatment; and even when we differ from the views propounded, it is impossible not to feel that benevolence, justice, and love of truth, are presiding qualities in the conductors of the work. Every kind of invention or suggestion for advancing the physical, moral, and intellectual welfare and enjoyments of mankind falls within its scope; and among the topics most largely introduced, we are happy to find Phrenology and its practical applications. There is a series of excellent papers on the principles of the science, and articles on the treatment of the insane are occasionally given. Criminal jurisprudence, however, is, of all others, the most frequent and favourite subject of discussion; and the comprehensive spirit in which it is treated may be judged of by referring to an article entitled "*Popular Impulses versus Criminal Law*," which was reprinted at page 227 of our last Number. We shall now select a few extracts on phrenological subjects.

Cautiousness.

Mr Combe says, in relation to this organ, and with the view of shewing that the manifestations attributed to it do not result from a mere deficiency of Combateness, that "it is a principle in Phrenology, that absence of one quality never confers another. Every feeling is something positive in itself, and is not a mere negation of a different emotion. Fear, then, is a positive sentiment, and not the mere want of courage; and it appears to me, that the faculty now under discussion produces this feeling. The tendency of the sentiment is to make the individual apprehend danger; and this leads him to hesitate before he acts, and to trace consequences, that he may be assured of his safety. Dr Spurzheim names it '*Cautiousness*,' which appellation I retain, as sufficiently expressive, although the primitive feeling appears, on a rigid analysis, to be simply fear."

With regard to this statement, it is to be remarked, that although fear is undoubtedly a positive emotion, arising from the action of the organ of Cautiousness, it cannot be regarded as the primitive feeling to which this organ is intended to give rise; because it is the function of each organ of the mind, when acting within its proper limits, to impart, by its activity, an emotion of pleasure; and as fear can never, in any shape, or under any circumstances, be considered a *pleasant* emotion, it seems to be quite obvious, that the sensation of fear can arise only when the organ of Cautiousness is subjected to *undue* excitement—just as pride is a positive feeling, resulting from the over-activity of Self-esteem, but not the primitive emotion belonging to that organ.

The opposite view would lead us to suppose, that we are possessed of an organ which can never be productive of any other than disagreeable emotions; and as, in a well-regulated mind, every organ is at all times [?] in a pretty nearly equal state of activity, the consequence must be, that,

in such minds, there could be no cessation of the distress arising from this source. So far from this being the case, it is evident that the Creator has decreed that the proper gratification of every faculty shall be a means of pleasure to its possessor, and that Cautiousness, therefore, like all the other faculties, produces intrinsically emotions of an agreeable kind.

We are all conscious of the delight which is experienced when we imagine that we have made secure provision against any impending danger. Those who, in youth, provide against the contingencies of old age, are actuated by this faculty; and the complacency with which those who are sitting at home in good company, before a cheerful fire, listen to the storm from which they are protected, arises probably from a similar cause. The difference between a proper exercise of Cautiousness, and the morbid state to which it gives birth when it is unduly developed, may be illustrated in a very simple way. Suppose, for instance, that a person about to make a journey, had satisfied himself that the vehicle in which it was to be made was of sound construction, and that the horses by which it was to be drawn were accustomed to their duty, and of quiet temper, he would not only have derived pleasure from the task of taking these precautions, but, in proceeding upon his route, he would feel conscious of agreeable emotions, arising from the knowledge that, while he is enjoying rapid motion, breathing fresh air, and looking upon the beauties of the country, he need not entertain the slightest apprehensions for his personal safety, since it is highly improbable, after the precautions which he has taken, that any accident could befall him. This would be the natural action of *gratified* Cautiousness;—but suppose that after all his precautions his mind should continue full of apprehensions—that he should start whenever the carriage swerved half an inch to the right or to the left, or when the horses happened to prick up their ears—this would then amount to *fear*, and would be merely the unpleasant result of the over-activity of a faculty which, in its natural and subordinate action, is given to us only for our contentment. (No. 51, p. 181.)

Firmness.

This faculty gives the tendency to hold to any opinions that we may have formed; and those persons in whom it is well developed, having once decided upon their course in any given matter, pursue that course to its termination with unshaken constancy. The primary function of the organ has never been very clearly defined, but it appears to admit of explanation thus:—When a question is submitted to a person for the first time, and he is required to come to a decision respecting it, it is necessary that all the faculties of the mind should operate upon it—to some of them acquiescence may be distasteful, and to others, again, it may be agreeable. He allows each to act, and at length, by the operation of the intellect, decides as to the course which will, upon the whole, be most agreeable to him. Having thus made his decision, it is the province of Firmness to impart pleasure in maintaining it. It is obvious that a provision of this kind is necessary, as, if it were absent, he would at once depart from the course which he had chosen, whenever the slightest momentary temptation was presented for him to do so, and when there would

be no time for him to suffer all his faculties to act upon the point, and to let the reason decide upon its aggregate advantages. This may be illustrated in a few words. Let us suppose that a person is called upon for the first time to choose his profession in life. The church is presented to him—the army—law—or trade. He immediately begins to weigh his prospects. Acquisitiveness suggests the most profitable pursuit, Destructiveness the most active, Self-Esteem the most dignified, Benevolence the most useful, and so on with all the other faculties. His intellect takes cognizance of all these motives, and, having decided in which way they preponderate, makes a selection accordingly.

His mind is thus made up, after time has been given to weigh the promptings of each faculty. If unable fully to gratify them all, he will have yielded to the action of those which are most powerfully developed. Acquisitiveness may have prompted to one pursuit, but in obedience to the higher faculties, he may have chosen a profession in which gratification may be denied to that propensity. After this, if Firmness were absent, whenever Acquisitiveness might be roused to activity, he would be prone to yield to its promptings, and to abandon his former choice; and when its action should subside, and the higher faculties again come into play, he would, when too late, have to repent his vacillation. This is, in fact, what takes place when the organ is deficient. "When it is small," says Mr Combe, "the individual is prone to yield to the impulses of his predominating feelings. When Benevolence assumes the sway, he is all kindness; when Combativeness and Destructiveness are excited, he will be passionate and violent, and thus afford a spectacle of habitual weakness and inconsistency. If Love of Approbation and Benevolence be large, and Firmness small, solicitations will with great difficulty be resisted."

The organ of Firmness, therefore, induces its possessor to persevere steadily in his chosen course. When it is equally developed with the other moral sentiments, it enables him to resist the various temptations that may surround him, and to pursue truth, through evil report and good report, with unshaken constancy. When, however, it is united with predominant propensities, it gives only that reckless hardihood in crime, that indifference to every warning, which shuts him from all means of help, and ensures his doom. In all cases where it is the largest organ of the head, it gives a blind dislike to change of any sort. It stands upon the old ways, merely because they are the old ways, and leads the individual studiously to shun and exclude every light that would render a change of opinion unavoidable. "Nothing shall ever make me believe this—nothing shall ever make me believe that"—is the constant cry of such persons; and if at last you demonstrate their error, they will make some remark, immediately after they have acknowledged your success, shewing that they are of the same opinion still, or, at least, that the old belief is still affectionately regarded as something that it is extremely unpleasant to part with. They do not rejoice at throwing aside error, and substituting truth, but regard the one as an ill-used friend, and receive the other as an intruder. . . . The evils arising from a deficiency of this organ, although not so frequently witnessed, are sufficiently obvious. In such cases, the individual is a mere creature of impulse, yielding to the dictates of whatever faculty may be active for the moment. If Love of

Approbation is also large, it is impossible for him to say "no" to any solicitations; but his promises are rarely to be depended on. He requires to be constantly watched, and reminded of his duty. If he undertake, after due deliberation, to vote in a particular manner, his friends must sit by his side, or he is sure, with the utmost enthusiasm, to hold up his hand in favour of the "last speaker." He puts an important letter into the post, and as soon as it is out of his hand, steps into the shop, to ask if he can have it back again; he makes a declaration of love, and writes to the lady next day, doubting, after mature reflection, if they are in any way suited to each other; and finally, after having during his life made a hundred different dispositions of his property, he puts a codicil to his will, revoking all former wills, and leaving everything to his lawyer, his nurse, or his physician.* (No. 57, pp. 276-7.)

Conscientiousness.

When Conscientiousness is unduly developed, it leads to serious abuses. Its possessor is then

So absolute in justice,
As to forget what human frailty is.

He fancies that the voice of conscience exerts in every breast the same sway as in his own; that all men have equally the same power to resist temptation; and he, therefore, makes no allowance for natural infirmities. When Benevolence and Intellect are deficient, and Destructiveness large, acting upon his own imperfect light, he will visit offenders with the severest penalties, and he may even fancy himself authorized to remove unjust men from the earth by any means within his reach. Some men of weak minds, in whom this faculty has been predominant, have thus deemed themselves called upon to commit assassination for their country's good, and to offer themselves as martyrs in her cause. The case of Felton, who assassinated the Duke of Buckingham, is an instance of this kind. It is stated of him, that he was persuaded that the murder of the duke would be a meritorious and conscientious act. When it was committed, it kindled a tumult of joy throughout the nation, and after his apprehension, as it was known that it had been performed on public grounds, the passage of Felton to London seemed a universal triumph, so that he was nearly sainted before he reached the metropolis. But while his name was echoing through the kingdom, Felton himself was exhibiting a piteous spectacle of remorse. The assassination with him was a sort of theoretical one, depending on certain doctrinal propositions; so that when the king's attorney had furnished him with an unexpected argument, which appeared to him to have overturned his, he declared that he had been in a mistake; and lamenting that he had not been aware of it before, from that instant his conscientious spirit sank into despair. In the open court he stretched out his arm, offering it as the offending instrument, to be first cut off (and here we see his Destructiveness still active, though in a different direction), he requested the king's leave to

* The writer says that some casts are extant of the head of George III., which shew an enormous development of Firmness. Where are they? *En.*

wear sackcloth about his loins, to sprinkle ashes on his head, to carry a halter about his neck, in testimony of repentance; and that he might sink to the lowest point of contrition, he insisted on asking pardon not only of the duchess, the duke's mother, but even of the duke's scullion boy; and a man naturally brave was seen always shedding tears, so that no one could have imagined that Felton had been, as described during his life, 'a stout and intrepid soldier.' (No. 63, pp. 378, 379.)

Hope.

Persons in whom this organ is large are remarkable for cheerfulness of disposition, and a tendency to see everything in the brightest colours. They always find some comfort, whatever may be their situation; and the more heavily misfortunes press upon them, the greater becomes their certainty that the time is approaching when matters will come right. Very often they can give no good reason for their buoyancy; they admit that everything looks as black as possible, but still they cannot help feeling that these dismal appearances are only the forerunners of a brighter day.

The primary function of this faculty admits of easy explanation. In the government of the world events constantly take place, which, to our limited view, appear fraught with evil. The tempest spreads desolation over fertile fields—an epidemic ravages and depopulates a thriving city—war, famine, accidents, and disease, are permitted to threaten us on every side; and as we cannot grasp anything beyond the little span of our mortal existence, and are incapable of understanding the laws by which these events are rendered necessary, they would present to the intellect only the idea of a moral chaos, were it not for the action of this faculty, which imparts a belief that, although much of what is passing may seem to be threatening, inexplicable, or unnecessary, it is tending nevertheless to our ultimate happiness, and that "all things are working together for good." (P. 379.)

Suggested Uses of the Daguerreotype.

Those who have not seen any specimens of photography since the introduction of Mr Beard's method of colouring, would hardly recognize the process in the agreeable pictures now presented. Other improvements have also been introduced, so that sitting to the sun is no longer a nervous affair, sure to terminate in an appalling production (the more appalling on account of its truthfulness), to which, as in the case of publication by young authors, people can only be driven by the "solicitations of friends." This change is satisfactory in more respects than as an advance in art, or as a means of gratifying and keeping alive the tender recollections of personal affection. It would be a good thing if it were a habit for people to have their portraits taken, not merely once in their lives, but at frequent intervals, say five or ten years, and hence any process by which the operation can be simplified and rendered more agreeable is to be welcomed. The face alters with the mind, imperceptibly to casual observers as well as to ourselves, while we are without the means of instituting a comparison with some fixed period of earlier life, but sufficiently when, as with the daguerreotype, we possess the means of esti-

mating it, to indicate not imperfectly the moral changes that have passed over us. Many a man would be startled and warned, after a long misdirection of his energies, by a glance at his own features as they appeared before he had entered upon his vain and headlong course—a course perhaps unthinkingly pursued, and which may yet have so far failed to subdue his entire being, that reflection being once stimulated, he may still have resolution to draw back. On the other hand, and this, after all, is probably what is most frequently to be expected, many might derive comfort in their course, by observing that the years which have done the work of destroying worldly comeliness, have made them sadder and wiser, and that with grey hairs and relaxed muscles, traces have also come of a milder spirit and nobler resolutions. And not merely would the advantage of these physiognomical evidences be gained. An index of mental progress would be afforded by the changes occurring in the form of the head. Those who have not given attention to the fact that these changes take place in individuals to a very striking extent, even in a comparatively short term of years, in cases where the brain has been constantly active, cannot sufficiently estimate the importance of preserving, from time to time, a memorial of its configuration. It is true, the daguerreotype would only achieve this to a certain extent, and, except in cases of baldness, only as regards the forehead or intellectual region, but the record is one so interesting, and the trouble of procuring it by casts or other means so great, that any approach to it by a simple method may be considered advantageous. Even, however, if the definiteness which characterizes daguerreotype portraits should not prove sufficiently minute to indicate the gradual changes in the heads of adults (with young persons these changes are so rapid and striking, that they would certainly be observable), there can still be no question that the process will furnish, in all cases, a more accurate delineation of their general form, than can be arrived at by any other pictorial means. In this respect, therefore, the daguerreotype portraits of public men will prove invaluable. In another generation, when mental science shall be more extensively understood, they will throw light upon many disputed points of character, and save a world of argument. (P. 518.)

The articles on the organs of Wonder and Ideality (Nos. 63 and 75) contain some views with which we are unable to concur: as, for example, that the former (which is said, not quite accurately in our opinion, to be “at the present day almost universally in a low state of development”) imparts “an intuitive belief in the existence of the soul, and faith in its power over matter;” and that persons in whom Ideality is small, are, by reason of its deficiency, “insensible to the moral relations of objects; and as it is impossible that they can themselves be operated on except in a literal way, they never suppose that it may be necessary to guard their remarks so that they should not indirectly wound the feelings of others.”—The discussion on the difficult subject of Beauty also, is, on the whole, unsatisfactory to us; but from this judgment the following passage must be excepted:—

When once we recognize that the mind consists of a certain number of faculties, and that all these faculties are capable of simultaneous activity and gratification, we find no difficulty in understanding that that which constitutes true beauty must be the power which any object or idea possesses of appealing harmoniously to the whole; and just in proportion to the natural harmony of development of the various organs in the head of each individual, will be his readiness to perceive beauty in its fullest sense. Good Taste consists in the appropriate manifestation of each and all of the faculties in their proper season and degree; and this can only take place from persons in whom they are so balanced that there is no tendency for any one of them unduly to assume the mastery. When such a mind is prompted by some high theme to its fullest action, each organ contributes to the emotion of the moment, and words are uttered of such condensed meaning, that a single sentence will touch every fibre of the heart, or, what is the same thing, arouse every faculty of the hearer. The power is known as Inspiration, and the medium in which it is conveyed is called Poetry. (P. 564.)

IV. *Atlas zur Erläuterung der Lehre von den Verrichtungen des Gehirns. (Zwölf von Gall's Tafeln.) Mit Deutschem, Französischem, und Englischem Texte.* Herausgegeben von GUSTAV VON STRÜVE und Dr EDUARD HIRSCHFELD. Heidelberg: Karl Groos. 1844. Folio.

Atlas illustrative of the Doctrine of the Functions of the Brain (Twelve of Gall's Plates). With explanations in German, French, and English. Edited by GUSTAV VON STRÜVE and EDWARD HIRSCHFELD, M.D. Heidelberg: Charles Groos. 1844.

In their preface the Editors say:—"The want of cheap engravings illustrating the doctrines of the functions of the brain has been felt repeatedly. The Atlas of Gall, forming a part of his great work on the 'Anatomy and Physiology of the Nervous System in general, and the Brain in particular,' contains, indeed, the most excellent engravings to that effect; but this voluminous work, separate parts of which are not to be procured, is of course very expensive, and is therefore accessible only to the few. The undersigned have, therefore, come to an understanding with Mr Charles Groos, bookseller at Heidelberg, to have the most indispensable engravings of the Atlas of Gall lithographed, to which we have prefixed a short explanatory discourse in English, German, and French. We hope to be useful to the public in facilitating, in that manner, the studies relating to the functions of the brain." The plates, twelve in number, are excellently lithographed by Mr Würmell of Manheim; and the whole are sold at the

astonishingly low price of five florins, twenty-four kreutzers, or nine shillings. Plate I. contains, 1. The nervous system of a caterpillar; 2. Brain, cerebellum and nervous system of the vertebral column of a hen; 3 and 4. Nervous substance of the vertebral column of a calf. Plate II., 1 and 2. Anterior and posterior surface of the nervous substance of the vertebral column of man; 3. Nervous substance of the spine, seen in profile; 4, 5, and 6. Sections of the substance of the cervical nerves of a child of four years. Plate III., Base of the brain of a calf. Plate IV., Base of the brain of a woman. Plate V., The cerebellum, and part of the brain of a man. Plate VI., The brain of a man placed on its base. Plate VII., The brain of a sheep placed on its base. Plate VIII., The skull of a man sawn vertically through the middle of the forehead (shewing the brain, &c.) Plate IX., The skull of a man sawn horizontally (shewing the brain.) Plate X., The skull of a man sawn on the left side (shewing a section of the brain, &c.) Plate XI., The skull, cerebellum, and brain of a man, separated vertically through the mesial line. Plate XII., The skull of a man sawn longitudinally through the middle of the frontal bone (shewing the brain, &c., mostly in section.)

We strongly recommend this useful publication to our readers. To phrenological societies and lecturers it will be particularly serviceable.

III. INTELLIGENCE, &c.

Sheffield Phrenological Society.—The following are the principal portions of a Report read before the members of the Sheffield Phrenological Society, at the fourth annual meeting of members, held on 23d April 1846:—On a review of the Fourth Session of the Sheffield Phrenological Society, the council has the pleasure to report that it has been one of gradual progress, and that the present position of the society is in every respect as favourable as the most sanguine of its originators could have anticipated, or the most ardent of its members have desired. The lectures of the session have been of a character creditable to the society, and the attendance of members, though not so numerous as is desirable, has been improved. The following has been the order of the lectures and papers delivered during the past session:—1. The opening lecture, by our esteemed president, Corden Thompson, Esq., M.D., being the fourth of his series “On the simultaneous Rise, Progress, and Decay of the Physical and Mental Powers.” 2. A paper by Mr Roper, surgeon, on “The Temperaments”—their influence on cerebral development. 3. A lecture by Mr Geo. Jessett, surgeon, “On Criminal Jurisprudence, enlightened by Phrenology.” 4. A paper by Mr W. C. Corsan, on “The Philosophy of Education.” 5. Five popular lectures “On Practical Phrenology,” by Mr E. T. Craig, honorary member, delivered on the occasion

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of his second visit to Sheffield for professional practice in Practical Phrenology. 6. A lecture by Mr John Rhodes, "On Music, in connection with Phrenology," accompanied by interesting illustrations. The present number of members is 83, honorary members included. A comparison of the present list with that of last year shews a decrease of four members; but if we add the names of several ladies who have subscribed to the society, the members will be about the same as last year. On a more minute analysis of the present list with that of 1844-45, we find that 22 individuals, included in that roll, have dismembered themselves, while 21 new members have been added during the session. This result is almost invariably found to take place in all newly-established societies, whether of a political or of a scientific character, and, though matter of regret, it need not produce discouragement. The new members added during the past session, include the names of medical gentlemen and others, of well-known and justly appreciated merit, by whom science is pursued as a matter of *investigation*; whilst those who have left the society, were most of them attracted by the novelty of the name, which time has now nearly effaced, or by some mere private influence, which has since ceased to produce its effect upon them. Assuming the leading objects of the society, as laid down in its first Report, to be "to investigate and spread abroad the facts and system of Phrenology," the greater the publicity given to the various branches of the subject brought before the members, the more extended the range of success. With these views, notices of all the lectures have been secured in the press, and the proceedings of the society have been kept constantly before the public eye, and have had the advantage of the utmost available diffusion. . . . Phrenology has made rapid advances within the last few years. Formerly it was treated more as a matter of amusement than of science; and the man who, after examination of the subject, had become convinced of the correctness of its deductions, was regarded as the victim of intellectual credulity. But we now discern the traces of its progress in all circles and among all classes. Those who had treated it with indifference begin to examine with attention, and those who had entirely neglected it, to apprehend the culpability of their course. The Andersonian University of Glasgow has led the way, during the past year, for the introduction of Phrenology, as the only true theory of mental philosophy, into our seats of learning, whence it has hitherto been excluded by a blind and antiquated prejudice.

The Report was approved of and ordered to be printed; thanks were voted to the gentlemen who had lectured or read papers before the society during the past session; and a petition to Parliament against Capital Punishments was adopted, and signed by the chairman in behalf of the society. It urges, that long and careful observation of the effect of our criminal code on the morals of society, has shewn that severe punishments in general, and the punishment of death in particular, instead of diminishing crime, has the tendency of increasing those serious offences for which it is inflicted;—that punishment as a retribution should be discarded;—and that restraint, with such remedial measures as shall tend to develop the moral and intellectual faculties and religious feelings, and to keep in abeyance the propensities of the criminal, till such a change is effected in his mental condition as shall justify his liberation, is all that

the interests of society require for its protection, and all that the Government is justified in inflicting. The petitioners, therefore, pray that Parliament will take the present criminal code into serious consideration, with a view to the further and extended application of those wise ameliorations in the administration of the criminal law, which have taken place within these late years, and to the entire abolition of capital punishments.

The officers for the ensuing year are,—Corden Thompson, M.D., *President*; S. Eadon, M.A., *Vice-President*; Henry Bach, *Honorary Secretary*; R. Roper, surgeon, *Financial Secretary*; Henry Atkin, *Treasurer*; W. C. Corsan, J. Derby, C. Wardlow, Jehoida Rhodes, T. B. Shuttleworth, J. Rhodes, R. Broadhead, F. Scott, T. Adair, G. Jesset, surgeon, A. Wynn, H. Turner, *Council*.

Peterhead Phrenological Society.—The annual general meeting of this society was held in their class-room on Monday the 8th June 1846. The society is now entered on the second year of its existence, and, to all appearance, is in a flourishing condition, its numbers being gradually on the increase, and there being a sensible improvement in the intelligence of its members. Its meetings (except on particular occasions) are held monthly, and the business of the evening consists in the reading of an essay on some particular organ, or other subject in connection with the science, and other matters of smaller importance. The office-bearers elected for the present year are:—James Mitchell, president; David Fraser, vice-president; Alexander Milne junr., secretary; John Ewan, treasurer.—*Peterhead*, June 19, 1846.

Elgin and Forres.—A friend writes from Elgin on 23d June 1846 as follows:—"What is a most unusual occurrence here, we have had a course of four lectures lately in our museum-room, and the subject was Phrenology. Mr Boyd, the lecturer, is a member of the Phrenological Society of Majorca!—a dignity which has rather amused the natives of Elgin. My brother and I attended the course, and I do not think the science will owe many converts to Mr Boyd, though in some he may awaken attention to the interesting study. All he said that was instructive seemed to me borrowed from Mr Combe, mixed up with a good deal of his own rubbish; and I think I never heard the English language so clipped and shorn of dignity and harmony as in his mouth." We may state, that the letter here quoted is not addressed to ourselves, and was written, not only without any view to publication, but, we believe, in ignorance of Mr Straton's paragraph in our April Number, about Mr Boyd. From another source on which we can rely, the expression of an equally unfavourable opinion of his qualifications as a lecturer has been received.

Under the head of "FORRES," the *Elgin Courier* of 24th July gives the following paragraph:—"Mr Boyd has been *enlightening* the lieges of Forres on the science of Phrenology during the past week. At the close of each lecture several gentlemen availed themselves of Mr Boyd's cranio-logical capabilities. It is grievous to find such attempts to destroy and render ridiculous an important science."

Ceylon.—A paper "On the character of the Singhalese, phrenologi-

cally considered," was read by Dr J. G. Davey, in August last year, at a meeting of the Ceylon Branch of the Royal Asiatic Society of Great Britain. The Committee of Management having decided that it should not appear in the Society's Transactions, the author has published it in the *Ceylon Overland Observer* (Colombo) of 15th April 1846. We mean to lay a considerable portion of it before our readers in an early Number.

Anthropological Museum at Paris.—In the Parisian Museum of Natural History is about to be established a department specially devoted to comparative anthropology. The great object of this addition to the collection will be to illustrate all the varieties of the human race scattered over the globe.

A collection of this kind, properly made, would be a great desideratum to many of our own museums, in which we find skulls and odd bones, or occasionally a stray skeleton of a different race, but no attempt at order or classification. The English student will in vain look for the opportunity of contrasting the physical structure of the Caucasian with the Mongolian, Negro, and American varieties of mankind.—*Medical Gazette*, June 19, 1846.

Swedenborg and Phrenology.—In an address delivered by Professor Bush at the New York University, "On the Scientific Character of Swedenborg," some extracts from which appear in the London *Mechanics' Magazine* for May 1846, p. 424, the following passage occurs:—"We may here also advert to the fact, that so far as there is any truth in the modern science of Phrenology, the authorship of which is ascribed to Gall and Spurzheim, it is found propounded not only in its general principles, but even in its specific details, in the cerebral physiology of Swedenborg. . . . And as to what is termed the science of Mesmerism, or Animal Magnetism, I shall hope to shew, in another lecture, that not only are all its grand phenomena detailed by Swedenborg, but that they are all adequately accounted for on the soundest psychological principles." We should like to see the grounds on which these statements are made.

Prize for Essay on the Pathology of Insanity.—The subject of the Fothergillian gold medal, offered for competition annually by the Medical Society of London, is, for March 1847, "The Pathology of Insanity." Practical and original facts and illustrations will, it is announced, be considered especial merits in all essays sent in for competition. Essays must be delivered at the Society's House, 3, Bolt Court, Fleet Street, on or before 1st December 1846.

Order by the Commissioners in Lunacy.—In an order issued by the Commissioners in Lunacy, directing the mode in which it is expected the "case-books," or histories of cases of patients in asylums, should be kept, we are happy to observe the following very sensible instructions:—"Secondly, That the medical case-book contain an accurate description of the external appearance of the patient, when first seen after admission—his habit of body and temperament—of the appearance of his eyes, the expression of his countenance, and any peculiarity in the form of his head," &c. &c.

Specimen of Antiphrenological Misrepresentation.—The following paragraph, extracted from a newspaper published within the last few months, is far more calculated, by revealing the ignorance of its writer, to damage the reputation of the paper in which it appeared, than to injure Phrenology in public estimation. "The phrenologists defend their doctrines, and explain away difficulties, in a most extraordinary manner. There is a celebrated divine, now living in Scotland, equally distinguished for his amiable disposition, his gigantic powers of mind, and the great moral influence he exerts upon the Christian world. This individual, it is said, has the organ of Destructiveness very largely developed, and, not having any counteracting organ very large, it is contended by those who are acquainted with the fact, that he manifests his inherent disposition to murder, by his mighty efforts to destroy vice and break down systems of error. In this way he gratifies his propensity to shed blood. By a recent examination of the skull of the celebrated infidel Voltaire, it is found that he had the organ of Veneration developed in an extraordinary degree. For him it is urged that his veneration for the Deity was so great, his sensibility of devotion so exquisite, that he became shocked and disgusted with the irreverence of even the most devout Christians; and that, out of pure respect and veneration for the Deity, he attempted to exterminate the Christian religion from the earth." Who are the phrenologists that have "explained away difficulties" in this manner?

Shakspeare's Bust at Stratford.—(From the *Athenæum*, Jan. 17, 1846.)—Some months ago you were so good as to insert some remarks of mine, with respect to the internal evidence of authenticity contained in the Stratford bust of Shakspeare. The view I took then arose only from the observation of a cast from the work in question. Since that time, however, I have been a pilgrimage to the beautiful old church in Warwickshire that contains the bust itself; and my belief in its authenticity is much strengthened by my visit. On a close inspection—which I obtained by raising myself on a table and some hassocks—the bust itself, though coarsely painted with stone colour, presents far more details than the indifferent casts from it that I have seen—particularly in the markings about the eyes and the wrinkles on the forehead; which last, though slight, are firmly shewn, and are irregular and individual. I confess I had often wondered to see the forehead of the great bard, as usually represented, so free from the furrows of thought, and had almost doubted the faithfulness of such smoothness; for transverse markings had been, in my observation, always, in some measure, the accompaniments of thought; and in the bust at Stratford, behold! they are clearly observable. I had the satisfaction of hearing from the clerk, that it was the late Sir Francis Chantrey's opinion that the bust had been executed from a cast after death. Some of the appearances, indeed, of such a mode of obtaining a likeness have, I should say, been retained, and worked out with a Dutch faithfulness (it is supposed that the sculptor was a Hollander); for that peculiar compression of the back part of the neck, immediately under the head, and the slight falling back of the cheeks, natural in a supine position resting on a bed, especially in death, appear to be retained literally on the upright bust—to the detriment, indeed, of the work, as giving to the position of the head, and to the general ap-

pearance, a stiffness that a less literal artist would have avoided. Those who are sceptics, and yet interested in this *vexata quæstio*, I would entreat to go down to the good old English town of Stratford-upon-Avon, and view for themselves. The church, besides its peculiar interest, as being the resting-place of the remains of our great bard, combines the attributes of a cathedral with the charm of a country church. At the foot of the church wall, close to the chancel, flows the Avon, roaring, at a little distance, over a weir. The locality offers many a view, distant and near, that would reward the lover of English landscape.—I am, &c.

JOHN BELL.

Marlborough Terrace, Victoria Road, Kensington, Jan. 12, 1846.

Dr Samuel B. Woodward.—The friends of Phrenology will hear with regret that Dr. S. B. Woodward, who has been for thirteen years superintendent of the State Lunatic Asylum, at Worcester, Massachusetts, is under the necessity, from continued ill-health, of resigning his post. The labours of Dr Woodward in America have been analogous to those of Dr Conolly in this country. His application of the new mental philosophy to the treatment of insanity has been uniform and avowed, and the results obtained by him have tended to promote a general and practical recognition of its principles in similar institutions throughout the United States. The intelligent annual reports of Dr Woodward have, moreover, done much to check the blind and self-defeating desire, so prevalent amongst persons ill-informed on the cause of moral defects, to inflict revenge upon all descriptions of offenders. It is satisfactory to observe, that upon his announcing his intention to retire, a committee of citizens in Worcester waited on him and obtained his assent to sit for a bust, to be wrought in marble by some able artist, and to be placed in the hospital.—*Popular Record of Modern Science*, August 8, 1846.

Study of the Skulls of different Races.—A writer in the *Quarterly Review* for last June, with reference to the researches of M. Bunsen, states a belief that the civilizers of Upper Egypt will be found to have proceeded from the primeval monarchies of Nineveh and Babylon; and after alluding to a valuable work by Dr Morton of America, shewing the configuration of the skull in different races, he expresses a conviction that much light will be thrown on this subject by similar researches, since "civilized and cultivated races will always be found to possess a craniological structure proportionate to their degree of social and intellectual development."—*Idem*, August 29, 1846.

Dimensions of the Brain.—M. Baillarger has invented a new mode of measuring the surfaces of brains, by dissecting out all the white substance from their interior, and then unfolding the exterior, and taking a cast of it. From his measurements he estimates that the average superficial extent of the human brain is 669.3 square inches; and that it is far from true that, in general, the intellect of different animals is in direct proportion to their respective extents of cerebral surface. If their absolute extents of surface be taken, the rule is manifestly untrue in many instances, and it is not more true if the extent of surface, in proportion to the volume of the brain, be regarded; for, according to M. Baillarger's measurements, the human brain has less superficial extent,

in proportion to its volume, than that of many inferior mammalia.—*British and Foreign Medical Review.*

Heads of Dissolute Females.—J. M. (Camberwell) writes, that he has observed large organs of Benevolence and Veneration in the heads of many unfortunate females perambulating the streets of London. This is very likely; but he errs in supposing that clerical teachers, legislators, and medical essayists, unanimously ascribe all cases of prostitution to “radical moral deficiencies.” He thinks that the two moral organs in question “tend, when most perfectly developed, all the more certainly to further its progress, and increase the number of its victims.” This seems to us too broad a statement; but, where the intellect is weak and uncultivated, the fact may sometimes be as affirmed.

Body of Oliver Cromwell.—There is a story current, that to guard against any further insult being offered to the body of Oliver Cromwell, it was privately buried in Naseby field, which was repeatedly ploughed and planted to secure the spot from discovery. The same account adds, that to render the scheme effectual, the body of King Charles, with the head sewed on, was buried for that of Cromwell. When, at the restoration, the supposed body of the usurper was removed from Westminster Abbey, and suspended on a gallows at Tyburn, amid the gaze and taunts of the populace, a seam round the neck was observable, and the eye of curiosity traced a likeness to the King’s countenance. The rumour quickly circulated, and having reached the palace, the body was ordered to be taken down with all possible despatch—the mob quickly dispersing, not a little amused at the mistake.—*Historic Prologues by the late Reverend John Davies.*

Dr Elliotson on Baron Reichenbach’s Researches.—In the 13th and 14th numbers of the *Zoist*, Dr Elliotson has reviewed Dr Gregory’s Abstract of Baron Reichenbach’s Researches on Magnetism, &c. He says, “My own observations in Mesmerism, made eight years ago, coincide in every point with those of the author, which are analogous. Every one of his observations I feel must be true. I formerly prosecuted the physics of Mesmerism much more than had been done by others, and I see in Baron Reichenbach’s statements of his experience, in what is really another field of the same estate, pure truth. He has only to make artificial sleep-wakers and cataleptics, and thus enlarge his means of experience, in order to be enabled to strike a rock, and pour forth a mighty stream of knowledge for our benefit. To Dr William Gregory we are deeply indebted.”

Scottish Criminals.—We extract the following interesting particulars from Mr Frederic Hill’s Eleventh Report on the Prisons of Scotland, presented to Parliament last Session :—

Of about 18,000 prisoners received during the year ending 30th June 1845, rather more than 2600 were under seventeen years of age; nearly 3700 were between seventeen and twenty-one years old; nearly 11,000 from twenty-one to fifty; and about 1100 above fifty.

As a general rule the prisoners, especially the young, are found on admission to be inferior, both in mental and physical development, and in the amount of knowledge they have acquired, to people generally; owing, no doubt, to the unfavourable circumstances of their birth and

early training, and to frequent exposure to cold and want, often alternating, as the age advances, with the effects of dissipation. Many who are committed and liberated while young, probably die before they reach manhood; but the same general inferiority is observable, to a greater or less extent, in prisoners of all ages. In many cases, indeed, the degree of weak-mindedness and the want of self-control approach the confines and even pass the boundary of sanity; and a lunatic asylum would often be a more appropriate receptacle than a prison.

The records of the state of the education of the prisoners, on their admission, as shewn by their knowledge of reading and writing, agree with what might be expected under such circumstances. Of upwards of 15,000 prisoners examined last year, only 1004, or one in fifteen, were found able to read and write well, and only 262, or one in sixty, knew more than mere reading and writing; while upwards of 3000 could not read at all, and upwards of 8000 could not write at all.

It will be found, by a comparison of the foregoing summary with that given by Mr Redgrave, in the criminal returns for England and Wales, that although the general state of education in Scotland is usually considered to be superior to that in England, the criminal population of Scotland is quite as low in education as the criminal population in England and Wales; shewing clearly that, in Scotland as well as in England, it is among the uneducated that crime abounds, potent as may be other causes than the want of education in producing crime.

Martin Luther.—In Michelet's *Life of Luther* are recounted many of his temptations by the devil; or, as rendered by Phrenology, painful revulsions between propensities and moral sentiments, undirected and undisciplined by enlightened intellect. The phrenologist may decline concurring with Luther in the supposition that his adversary was the prince of darkness; unless he consider such to have been allegorized ignorance, which, with a subjection more despotic than that of human princes, yet holds in darkness the majority of mankind. The following is an extract:—"As Dr Luther advanced in years, the devil, as he himself tells us, kept constantly at his side, even in the cloister, tormenting and tempting him. There were one or two devils in particular, who kept watch upon him, and when they could not make their way to his heart, they used to *seize hold of his head, and torment him in that quarter.*" (P. 327, "Bogue's edition.") Taken ill in January 1532, he remarked to Melancthon and Roerer, who were sitting by his bedside, "My malady, which consists of a series of *headachs, vertigoes*, and so on, is *decidedly not natural*; nothing I take remedies it in the slightest degree, though I implicitly obey my physicians' directions." (P. 329.) Dr Spurzheim, in his work entitled *Phrenology in Connection with the Study of Physiognomy*, infers, I believe, from an accompanying portrait, that Luther's organ of Constructiveness was large, which the following incidents confirm. From extreme poverty, and as a means of subsistence, Luther, in 1525, adopted a trade. "Since amongst us barbarians," says he, "there is no man of art to instruct us in better things, I and my servant Wolfgang have set ourselves to turning." In one of his letters we find him directing Wenceslaus Link to purchase the necessary instruments for him at Nuremberg. He also applied himself to gardening and building. "I have laid out a garden," he writes to Spalatin (December 1525), "and I have con-

structed a fountain, and have succeeded excellently well in both undertakings." To an abbot at Nuremberg he writes, in May 1527, "I have received the turning tools, and the dial, and the cylinder, and the wooden clock. * * * I have made considerable progress in clock-making, and I am very much delighted at it." (P. 199.) As an instance how little, generally, to be relied on, as authorities in science, are theologians and divines, take Luther's opinion, that "idiots, the lame, the blind, the dumb, are men in whom devils have established themselves; and all the physicians who heal these infirmities *as though they proceeded from natural causes*, are ignorant blockheads, who know nothing of the power of the demon." (P. 321.) If an Esquirol had remedied only one case of fatuity; if a De l'Épée, a Sicard, a Kinniburgh, a Gallaudet, and a Howe, have really made more intelligent and happy the outcasts of a lost sense, by knowledge of the "power," not of a "demon," but of nature, each, instead of being regarded with gratitude and reverence, is, on *Luther's maxim*, to be vituperated as an "ignorant blockhead." Surely the great reformer would not have been injured by some further *self-reformation*.—J. M.—CAMBERWELL, 4th April 1846.

Head of Lecomte.—It has been asserted that the head of Lecomte, the assassin who fired at His Majesty the King of the French during the month of April, presented a considerable enlargement of the organ attributed to Destructiveness, and of animal propensities in general. No opportunity has been given to phrenologists to ascertain the truth of the assertion, as the body was not given for dissection, and as no cast of the head was taken either before or after execution.—*Medical Times*, June 7, 1846.

Indian Tribes of N.-W. America.—On the 29th April 1846, there was read before the Ethnological Society a paper entitled, "Observations on the Indian Tribes inhabiting the North-West Coast of America, by John Scouler, M.D." Under this title Dr Scouler has given a classification of the various tribes found between Behring's Straits and the Columbia River, and included between the Rocky Mountains and the Pacific Ocean. They are sixteen in number, which is very considerable for the narrow district within which they are confined. To the east of the mountain range, the Algonquin race alone occupies a territory exceeding that of the sixteen families mentioned. Even if we exclude the Esquimaux, we find there is a considerable variety in the physical features of the Indians of the north-west coast of America, as well as in their intellectual and moral character. Comparing them *en masse* with their neighbours east of the Rocky Mountains, they have a more extensive range of ideas, are less inflexible in character, and more imitative, and, instead of the hard-heartedness of the Iriquois, the ferocity of the Carib, or the impassable cruelty of the Brazilian, are truly humane: the custom of scalping is unknown; prisoners taken in war are rarely put to death after the excitement of the contest has subsided, and they are never exposed to lingering tortures. The elaborate carvings of one of the sixteen families—the Haidah—is, in Dr Scouler's opinion, equal in skill to anything displayed by the Mexicans, and shews how small an amount of civilization might suffice for the construction of the monuments of Chiapa or Yucatan. The Flatheads, Cayuse, and Shahaptans, are remarkable

for their moral character and religious culture. Long before the arrival of Christian teachers among them, they had learned to observe Sunday by spending a part of it in prayer and religious ceremonies, and by setting aside their usual labours.—*Medical Times*. [We suspect that the "moral and religious" qualities of the Flatheads are more apparent than real. See some particulars bearing on this subject in our 18th volume, p. 191. Dr Scouler's paper is published, at full length, in the *Edinburgh New Philosophical Journal* for July 1846.—Ed. P. J.]

Mesmeric Infirmary in London.—An influential and numerous meeting of the noblemen and gentlemen who have satisfied themselves by investigation that Mesmerism is a fact in nature, and a power extensively applicable to the cure of disease, was held on Thursday week at the residence of the Right Honourable Earl Ducie, when the preliminary steps were taken, by the formation of a committee, for the establishment of an institution in the metropolis for the practical application of Mesmerism to the cure of disease, and performance of surgical operations without pain. Earl Ducie accepted the office of president. Many names of high station and undoubted intellect were placed upon the list of vice-presidents and committee, among which, our readers will be pleased to learn, were the distinguished ones of Lord Morpeth and Mr Monckton Milnes, M.P. A liberal subscription was entered into, and arrangements made for immediately carrying out the purposes of the meeting. It should be added, that the institution is to be strictly limited to the cure of disease and the relief of suffering.—*The Critic*, July 1846.

Exemption of the South Sea Islanders from Insanity.—Captain Wilkes, Commander of the United States Exploring Expedition, says, in a letter to Dr Brigham:—"During the whole of my intercourse among the natives of the South Sea, I met with no deranged person, and I am satisfied that insanity is a disease incidental alone to civilized life. I am confident that had any instances of mental derangement among the natives occurred, it would have been observed by us."—*American Journal of Insanity*, January 1846. [Allowing insanity to be rare among the South Sea Islanders, we cannot regard the fact that no cases were seen by Captain Wilkes, as good evidence of the entire absence of the disease.—Ed. P. J.]

African Skulls.—Extract from a paper by Dr Thomas Hodgkin, "On the Ancient Inhabitants of the Canary Islands, published in *The Edinburgh New Philosophical Journal* for October 1845:—

"Having occasion to classify a considerable collection of human skulls, including specimens from various parts of the globe, those of Africans, and their descendants, naturally formed a distinct group. This group, however, required arrangement within itself, which might either consist in subdivision or gradual transition. In some respects the latter appeared preferable, and more accordant with the facts which were before me.

"Though the African skulls, generally, may be regarded as elongated, and possessing that peculiar character which Dr Prichard has called *Steino-bregmic*, and Prognathous, as respects the form and position of the alveolar processes, there are marked differences as respects the form of forehead and other parts of the cranium. In some the os frontis rises almost vertically from the supraorbital ridges, and being comparatively flat in front, makes a more prompt and decided turn towards the temples

than is to be found in almost any other skulls. From the forehead, thus almost vertically formed, the upper part of the head recedes more horizontally than in those African skulls in which the opposite character of forehead is most conspicuous. An admirable specimen of a head thus formed had struck my attention in the cast of a Mosambique Negro, preserved in the Museum of the Garden of Plants, in Paris; and I found this form to prevail, I believe, without any exception, in the skulls which came from the same part of Africa. In some instances, the forehead, though vertical, was very low; but we see the same form elevated in the beautiful and capacious forehead of *Leo Africanus*, a learned Negro, also from the eastern part of the Continent.

"In those skulls which exhibit the type which may be regarded as the opposite to that which I have just described, the forehead recedes as it rises, and in many instances, a similar direction is continued to the posterior part of the head, producing, as Dr Knox has justly remarked with respect to some African heads, a great height from the *meatus externus* to the vertex. The forehead recedes laterally as well as superiorly, not only causing the turn of the temples to be less marked, but rendering the frontal protuberances, which are very conspicuous in the former type, little, if at all, perceptible in this. Skulls of this description belong, as far as I have been able to make out, to the natives of the western coast of Africa, and are not only remarkable for the comparatively large size of the bones of the face, but are often throughout of great thickness and weight. An example of this kind of head is, if I am not mistaken, exhibited in the antique statue of a Negro in the act of stooping, and which is commonly called the knife-grinder. The striking peculiarities of these heads are exaggerated in American caricatures, in which, contrasted with the fine foreheads given to the Whites, they seem designed to suggest the idea that they are scarcely human.

"The skulls of Caffres present a form of forehead which is intermediate between the extremes which I have now described, the lower part of the forehead being vertical, the frontal protuberances being conspicuous, and the sides of the forehead not so much bevelled off as in the Western heads. I was, therefore, induced to believe that there was a gradual transition from the most striking examples of the first type, by way of South Africa to the Western coast, where the opposite type is the most strongly marked. I communicated these views to my friend Antonius D'Abbadie, when he was preparing himself to become an African traveller, and who, whilst devoting much of his time to exact sciences, was not regardless of ethnographical characteristics. Circumstances having led him to visit Brazil, before his proceeding to Africa, he paid special attention to the African race imported into that country. The Portuguese, as is well known, have derived their slaves from the Western, as well as from the Eastern coast of Africa. The observations of my friend not merely tended to confirm the localities which I have assigned to forms, but on one occasion he was enabled to correct a mistake which referred an individual to the West coast, who, on more careful inquiry, turned out to be derived from the East, as A. D'Abbadie had insisted that he must have been. It is, however, highly probable that many exceptions may be met with, since it is well known that Africans pass from one part of the continent to another, making journeys occupying several months. Not only individuals, but groups, may possibly be found to

clash with the distribution, in the main correctly conjectured ; and the ethnography of Africa, when more completely filled up than is at present the case, may furnish examples analogous to the existence of Slavonic families in the south of Europe.

" I much regret the want of observations and information regarding the heads of Northern Africans. Independently of the northern parts of Africa having been, from a very remote period, in great measure, inhabited by Caucasian families, which, in the lapse of ages, may have sufficiently blended themselves with their African neighbours to have effected some personal changes, it seems pretty certain, from the descriptions given by modern travellers, as well as from delineations and descriptions of great antiquity, that the strictly African type which has prevailed in Northern Africa, is not precisely the same with that which is now to be found either on the east or west coast, or in Southern Africa. I shall not be greatly surprised, if, in purely physical characters, there should hereafter be discovered, as in other zoological productions of the country, an approach to those characters which are met with towards the Cape."

Books received.—British and Foreign Medical Review, No. XLIII., July 1846.—The Zoist, No. XIV., July 1846.—The American Journal of Insanity, April and July 1846.—The True Criterion of Sin, and our Treatment of Evil-doers, with reference to the American Slaveholders. By Richard Shaen, M.A. Edinburgh: R. Nelson. 12mo, pp. 16.—Annual Reports of the Belfast and Dundee Asylums for Lunatics, of the New York State Lunatic Asylum, and of the Perkins Institution and Massachusetts Asylum for the Blind. 1846.—Early Magnetism in its Higher Relations to Humanity, as veiled in the Poets and the Prophets. By ΘΥΟΣ ΜΑΘΟΣ. London: H. Bailliere. 8vo, pp. 127.—The Use of the Body in Relation to the Mind. By George Moore, M.D. London: Longman and Co. Post 8vo, pp. 431.—The Medical Times, weekly.—The Morningside Mirror, Nos. 9, 10, 11, 12.—The New Moon, Nos. 20, 21, 22.

Newspapers received.—Dumfries Standard, June 24.—The Overland Observer (Ceylon), April 15.—Manchester Examiner, July 4.—The Chronotype, June 5.—Bristol Times, May 30.—Derby Reporter, July 23.—Woolmer's Exeter Gazette, August 29.

To Correspondents.—Mr Hytche's paper will be inserted as soon as convenient.—We have acted on Mr Donovan's suggestion.—Mr A. Wilson's letter has been received.

Communications for the Editor (prepaid) may be addressed to Mr ROBERT COX, 25 Rutland Street, Edinburgh. Books or parcels, too heavy for the post, may be left (free of expense) with the London publishers, Messrs Simpkin, Marshall, & Co., Stationers' Hall Court.—Articles intended for the next following Number must always be with the Editor *six weeks before the day of publication*. Communications for the section of "INTELLIGENCE," and also Advertisements, should be in hand at least a fortnight before the same day. Charges for Advertising:—Eight lines, 6s.; twelve lines, 7s. 6d.; every additional line, 6d.; half a page 14s.; a whole page, 25s. Advertisements may be sent to the publishers in Edinburgh or London.

EDINBURGH, 1st October 1846.

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