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OBSERVATIONS
ON THE
PHRENOLOGICAL DEVELOPMENT
OF
BURKE, HARE,
AND
OTHER ATROCIOUS MURDERERS;
MEASUREMENTS OF THE
HEADS OF THE MOST NOTORIOUS THIEVES
CONFINED IN THE EDINBURGH JAIL AND BRIDEWELL,
AND OF VARIOUS INDIVIDUALS,
ENGLISH, SCOTCH, AND IRISH,
PRESENTING AN EXTENSIVE SERIES OF FACTS SUBVERSIVE OF
PHRENOLOGY.

READ BEFORE THE ROYAL MEDICAL SOCIETY OF EDINBURGH,
By THOMAS STONE, Esq.
PRESIDENT OF THE ROYAL MEDICAL SOCIETY.

Testor utrumque caput.

VIRG. Æneid, iv.

"Assail our facts, and we are undone ; Phrenology admits of no exceptions."
Phrenological Journal, vol. iii. p. 258.

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THE circumstance of a regular course of lectures on Phrenology being yet publicly delivered in this city, and the acknowledgment that some individuals, not aware of the extent of the Phrenological delusion, yet hesitate to pronounce any opinion, either favourable or unfavourable to its pretensions, must alone plead my apology for directing the attention of a scientific Institution to an hypothesis which has been decidedly rejected by the most enlightened men in Europe, and which, from its earliest existence, has appealed rather to the credulity of the vulgar, than to the judgment of men of science. Astrologers, Metoposcopists, Physiognomists, and Chiromancers, have in every age arrogated to themselves a peculiar and superior insight into human nature ; and, by pretending to predicate, by external signs, the faculties and dispositions

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which influence the destiny of mankind, they have not failed to impose repeatedly on the understanding of the ignorant, and by appealing to accidental contingencies, which for a moment seem to favour their empirical speculations, they have occasionally taken by surprise the judgment of better educated individuals, who, after receiving the grossest fictions, in the belief that they are the soundest facts, become prepared to listen with a kind of religious gravity to the most ludicrous and incongruous assertions.

To trace the history of such conceits through the darker ages, in which they were first professed, is unnecessary ; I simply maintain, that the Phrenological indications by which it is at present pretended that the human character can be interpreted, are in every respect as unfounded, and can as little be relied on, as any of those old physiognomical superstitions, of which they originally formed a part, and to which they are still essentially allied. In confirmation of this assertion, I shall not enter into any psychological or physiological arguments, but proceed to communicate to the Society an induction of facts, on which alone I challenge the Phrenologists to peril the alleged veracity of their system.

The following are the enquiries which I have accordingly instituted.

I. *Does the Phrenological development of the murderer Burke correspond with his acknowledged character ?*

II. *Does the Phrenological development of his*

infamous accomplice Hare correspond with his acknowledged character?

III. *Is it possible to distinguish the crania of murderers from other crania, by the Phrenological indications attributed to them?*

IV. *Do the most notorious thieves possess the organ of Acquisitiveness larger, or that of Conscientiousness smaller, than individuals of exemplary character?*

The attention of the public has for some time past dwelt with painful interest on the atrocities that have lately been perpetrated by Burke, and his miserable confederate Hare; and although the hand of humanity would willingly draw a veil over the recollection of their enormities, yet, as they have been guilty of iniquities almost unexampled in the annals of crime, there can be little doubt that they will long rank among the most notorious and execrable murderers that ever disgraced the history of human nature. The cruelties repeatedly committed by them were indeed of the most deplorable and appalling description. They were not prompted by the excitement of provocation, or suggested by any frenzied desire of vengeance;—they were not committed in moments of sudden or impetuous passion, but all, on the contrary, was cold-blooded, selfish calculation; and no savage in the remotest wilds of Africa ever heard more unmoved, or exulted more deliberately, over the repeated death-groans of their victims.—“After they ceased crying and making resistance,” says the Confession of Burke, “we

left them to die of themselves, but their bodies would often move afterwards, and for some time they would heave long breathings before life went away."

As it is stated by Phrenologists, that deliberate and selfish murderers possess always a large endowment of the alleged organ of destructiveness, and as the atrocities of Burke and Hare are certainly of as great, or even greater magnitude, than any of those which were perpetrated by the criminals who supplied Gall and Spurzheim with the evidence by which they pretended not only to discover, but subsequently to establish this organ,—so in the cases of the West Port murderers, each should, on Phrenological principles, possess it exceedingly well developed.

I.

Does the Phrenological development of Burke correspond with his acknowledged character?

On the morning after the execution of this criminal, his body was at an early hour conveyed to the anatomical rooms in the College, and our distinguished and popular Professor Dr Monro, gave the same morning a public demonstration of the brain. In the course of this dissection nothing remarkable was observed, excepting a certain degree of softness of the cerebral substance, which has been noticed by the learned Professor in the brains of other criminals also examined under similar circumstances, and which he is inclined to attribute to the lowness of the prison

diet some weeks previous to execution.* It has been falsely and ignorantly stated to the public, that the lateral cerebral lobes were unusually developed, and the skull in that region rendered in consequence remarkably thin. Having made particular enquiries on this subject, I am enabled, on the best authority, to state positively, that no such remarkable development was observable. The attenuation of the bone alluded to refers to the squamous portion of the temporal bone, which is generally thinner than any other part of the cranium; and were the statement, therefore, even admitted to be correct, it would constitute no peculiarity in the skull of Burke. I may add, that I have examined many crania, in which, although the bones were much thinner generally, yet over the region of destructiveness they were much thinner and more diaphanous, than in this murderer, without the slightest external protuberance. The effect of any unusual fulness of the cerebral convolutions, seems indeed not to produce any elevation on the external table of the cranium, but simply to attenuate the internal, which is observable in the indentations of the *glandulæ Pacchioni*, which never produce any corresponding eminences on the external cranial surface.†

* *Monro's Morbid Anatomy of the Brain*, p. 37, and 160.

† The relation which the external table of the skull bears to the internal is very ably and satisfactorily explained by Dr Milligan, in the *Appendix* to his valuable translation of *Majendie's Physiology*.

"The inner or *vitreous table*," says he (page 566), "performs uniformly one office; it closely follows and embraces the figure of the brain, receiving the impression of every convolution, and penetrating

The organ of destructiveness in Burke has been called *large*. I proceed to enquire into the correct-

into every fissure with as much exactness, though not quite so deeply, as the membranes themselves. Meanwhile, the *external table* is no more a mere organ of defence than the muscles which cover it; it is an organ of *coaptation* or *articulation*, and accordingly is found to be impressed, elevated, and configured, entirely, according to the necessities of this adaptation. Hence that line of it which corresponds to the transverse suture of the face is exactly adapted to the bones of the opposite margin of this suture, being thick where they are thick, thin where they are thin, serrated where they are serrated, and harmonic where they assume this appearance. It exhibits no relation to the internal table, till, being again turned inwards along the roof of the orbit, it re-approaches and coincides with it to form the thin edge, which, like another squamous portion, is to ride upon the *ala minores* of the sphenoid bone. *The external table, then, of the frontal bone is in reality a bone of the face. Hence its development—or growth depends entirely on the growth of the bones of the face; for it has never been seen narrower or broader than the distance from the external orbital process of the one malar bone to the other, nor placed so close to the internal table and crista galli, that it was overlapped by the bones of the nose, or by the superior maxillary and malar bones. It follows, then, from what is said above, that the development of the internal table, and consequently of the frontal bone, follows the development of the brain; but the development of the external table of the frontal bone follows the development of the bones of the face. Now the brain, we have seen, arrives at its full size in the seventh year, which, therefore, is the period for completing the development of the internal table of the frontal bone; but the bones of the face continue growing to the twenty-first year, and hence anatomists find the dimensions of the frontal sinus go on increasing to that year; and the same authors generally find the sinus commence at the seventh year, because that is the time at which the nutritious arteries cease to do more than support its vitality.*

The learned author then continues (page 598) to explain very

ness of this report, and shall compare it, both in its absolute and relative size, with the same organ in two series of crania.

1st, With 50 crania, principally British, collected by Sir William Hamilton, with the measurements of which he has kindly favoured me.

2d, With the 50 crania collected by Dr Spurzheim, and at present in the Edinburgh Museum; of which 37 are male, 13 female. These also form a part of Sir William Hamilton's extensive induction, and being a closed collection, which may be appealed to at any time, I refer to them with confidence.

To ascertain the size of the cranium, I have had recourse to two methods:—

1st, I have taken its lineal dimensions, including its length, breadth, and height; the latter being obtained by measuring, with the callipers, from the anterior edge of the foramen magnum to the bregma.

2d, I have referred to the capacity of the cranium, or the weight of encephalon contained in each, which is ascertained by filling the skull with

clearly the formation of the *frontal sinuses*, and wherefore, in some cases, they are altogether wanting. His explanation of the relation of the external to the internal cranial table applies not to the bones of the skull only, but to all the flat and cylindrical bones of the body; and certainly Dr Milligan is entitled to much praise for having been the first to perceive, and satisfactorily expound, a law which appears to influence the whole osseous system.

sand, weighing the quantity each contains, and reducing the specific gravity of the sand to the specific gravity of the brain.

I give, first, the *absolute* size of the several organs; secondly, their *relative* size, or the proportion which each bears to the contents of the skull, or to the weight of the encephalon. The latter, in consequence of crania being sometimes broken, it is not always possible to obtain, and in those examples the lineal dimensions are referred to. It is therefore of importance to notice, that I have found, from an induction of upwards of a hundred crania, that the proportions of the organs to the various sizes of crania, have borne a general relation to the proportions of the same organs to the same encephala. I give the result of my induction disjunctively, as well as concretely, to prevent the suspicion of any anomalous cases having affected the general average.

The size of Burke's cranium is 18 *inches*.

The weight of his encephalon 20507 *grains*.

From destructiveness to destructiveness measures 5.35 *inches*.

The proportion of destructiveness to the size of the skull is as 1 to 3.364.

The proportion to the encephalon as 1 to 3833.084.

On referring to Sir William Hamilton's General Table of adult male crania, I find, of fifty in which the measurement from destructiveness to destructiveness was taken, 8 are $\frac{1}{10}$ above Burke, 29 are still larger, 13 only are less.

The *average* size of these crania estimated by the lineal dimensions of length, breadth, and height, is 18.2 inches.

The *average* size of the organ of destructiveness is 5.5 inches.

The proportion of destructiveness to the general size, on the general average of these crania, is as 1 to 3.309.

The results of the induction from these 50 crania are—

First, 37 of the 50 have the organ of destructiveness in its *absolute* size *larger* than Burke.

Second, The organ of destructiveness in Burke is in its *absolute* size *below* the average of these 50 crania.

Third, The *relative* size of the organ of destructiveness, or its proportion to the lineal dimensions of the cranium, is in Burke also *below* the average.

I proceed next to the second series of crania to which I have adverted, the collection of Dr Spurzheim in the Edinburgh Museum, the measurements of which are given in a table presenting a view of the absolute sizes of the several organs, and their individual proportions to the encephalon.*

The average *absolute* size of the organ of destructiveness in these 37 male crania is 5.6 inches.

The average *relative* size of the organ of destruc-

* See Table I. Measurements of adult male crania.

tiveness, or its average proportion to the encephalon, is as 1 to 3634.261.

Of these 37 crania, taking them disjunctively, 34 have the organ of destructiveness in its *absolute* size *larger* than Burke—27 have it *larger* in proportion to the encephalon.

The result is that, when compared with these 37 crania, the organ of destructiveness in Burke is both absolutely and relatively *below* the average size.

Having established this fact by the most direct and conclusive evidence that can possibly be obtained, it cannot fail to illustrate, in a very striking manner, the fallacy of this phrenological indication.

This murderer, it should be remembered, was not instigated to the commission of crime by the want of those common necessities of life which have sometimes urged the victim of poverty to become the victim of guilty desperation. He was, although a stranger, and poor, when he arrived in Edinburgh, a man who had borne a respectable character, and might have procured some honest employment; but it appears that, one evening, when sitting by the fireside with Hare, they overheard a woman lodger breathing heavily in her sleep, on which Hare remarked, "Do you hear that? it would not be difficult to take her where we took Donald," a poor pensioner who had some days before expired in the same room, and whose remains they had subsequently sold. The diabolical suggestion was no sooner given utterance to, than Burke readily acquiesced, observing that they might have recourse to the method

adopted by Hazael, when he destroyed Benhadad the King of Syria, by dipping a cloth in water, and covering his mouth. The hint was immediately put in practice,* and from that night a deliberate system of murder was carried on, the aggravated horrors of which transcend all possible description, and do more than realize the most tragical scenes that "fiction ever feigned, or fear conceived." Nor does the disposition of Burke seem to have been influenced by any remarkable desire of gain, or acquisitiveness. He allowed Hare and his wife, it appears, to share the greater part of the blood-money they obtained; and Hare himself acknowledged that Burke was always very ready to give away his money, and free with it among those of his companions who were poorer than himself. On one occasion, a Student having purchased and paid him for the extremity of a subject, Burke received the price of the body to the full amount, on which he immediately sought the Student, and, of his own accord, refunded him the money.

Neither were the murders of which he was guilty committed only in moments of excitement from intoxication; it appears by the evidence that he never lost his self-possession from the effects of drinking, and the address with which he contrived so frequently to impose on his unfortunate victims, proves him to have been the very man who could "smile, and murder while he smiled;" and who took a deliberate

* This anecdote is given in the Evening Courant, February 7, 1829.

and fiendish pleasure in multiplying the number of his atrocities. Throughout his guilty career, he manifested, to a singular extent, all the attributes which are by Phrenologists referred to the supposed organ of Destructiveness, which, so far from possessing any characteristic development, is the very reverse of the condition it should have exhibited, in order to accord with one of the most fundamental propositions of the Phrenological theory.

The organ of Benevolence next claims consideration ; and surely never did any individual more completely divest himself of all the commonest sympathies of humanity than Burke ? He had indeed so familiarized his mind to scenes of murder, and his heart, hardened with excess of crime, had become so callous, that he not only viewed with disregard the anguish of the sufferers who were immolated on the infernal altar of his iniquity, but seems coolly, in the midst of his atrocities, to have reconciled himself to the ignominious fate which he knew awaited him. So frequently had he grappled with the dying—so often had he hurried his victims into the arms of Death,—that he seems for a time to have viewed with indifference the terrors of his countenance. The day before his execution, he stated that, in his soberest moments, he frequently used to reflect that he should one day be hanged, and often accustomed himself to consider how, when the time arrived, he should conduct himself on the scaffold. His savage disposition frequently manifested itself, and more than once he beat the woman with whom he cohabited, in so barbarous a manner, that

medical assistance was obliged to be procured for her. The organ of Benevolence on the skull of Burke, measures from the meatus 5.1.* Its proportion to the encephalon is as 1 to 4020.980. On referring to the table of adult male crania, the average size of Benevolence in the 37 crania, is 5.011. Its average proportion to the encephalon is as 1 to 4089.288.

Taking them disjunctively, 9 of these have the organ of Benevolence in its *absolute* size the *same* as Burke; 20 in its *absolute* size *less* than Burke; 22 have it less in its *relative* size, or in its proportions to the encephalon.

The organ of Benevolence in Burke is, it will be seen, both *absolutely* and *relatively* above the *average* size of the same organ in these 37 crania.

On this fact it is unnecessary to comment; I am indeed aware it has been stated by some of the most distinguished of the Edinburgh Phrenologists, that, in accordance with the large development of the organ, Burke was really a benevolent man; but I apprehend the public generally will maintain a very different opinion, and to argue the point seriously would be to indulge in one of the severest satires that can be conceived, on the incongruity of the phrenological doctrines.

* This measurement was taken after the horizontal section of the skull had been made, and as in the sawing some portion of bone must have been lost, the organ measured even more than I have estimated it; for, giving the Phrenologists every advantage, I have made no allowance for this, although it is clear that at least 1-10th may on this account fairly be added.

I next proceed to the organ of Conscientiousness.

This organ in Burke measures from the meatus 4.6. Its proportion to the encephalon is as 1 to 4458.043.

On referring to the table of adult male crania, it will be seen that the average *absolute* size of the organ of Conscientiousness is 4.462. The average *relative* size is as 1 to 4585.414.

Taking the crania disjunctively, 9 possess the organ of Conscientiousness in its *absolute* size; 21 in its relative size *less* than Burke.

The result is, that Burke possesses the organ of Conscientiousness both absolutely and relatively *above* the average size.

The organ of Amativeness next deserves particular attention, as Burke manifested the propensity attributed to it in an excessive degree. He married at an early age, and on the pretext of a quarrel with one of his wife's relatives, left her, and absconded with another woman; and even when living with her, maintained another profligate in the Canongate, at his own expense, with whom he as systematically cohabited. The Phrenologists have themselves averred, that the large development and abuse of this organ, was in a great measure the cause of his entering on so fatal a career of crime. They have therefore announced that it was large;—this I deny.

In the paper I had the honour of reading to this Society in 1825, I observed that the phrenological casts of murderers, for the following reason, never can be relied on: When the criminal, having been executed, is cut down, the body is thrown generally

upon its back, and the blood, which, in cases of death by lightning, drowning, hanging, &c. remains uncoagulated, gravitates to the most depending parts of the person, a considerable distension of the muscles of the back, neck, and posterior parts of the head, is thus produced ; and over this distension the cast is usually taken. The organs of the alleged animal propensities are in consequence made to appear very large, whilst those to which the intellectual faculties, and moral sentiments are ascribed, for the same reason, and from the contrast, present as remarkable an appearance of deficiency. Such was the condition of the head of Burke at the time when Mr Joseph took the cast of it, which, in this, as in other instances, forms a part of the erroneous data on which Phrenologists accustom themselves to reason.* The organ of Amativeness may *then* have appeared *large* ; but this only affords an additional illustration of the impossibility of forming, from external inspection under such circumstances, any correct idea of the size of the cerebellum.

Here I must acknowledge myself indebted to Sir

* It is acknowledged that the organ of Destructiveness, owing to the " swelling of the integuments," measures on the cast of Burke 2-8ths more than it did on the head during life. Why has not an acknowledgment of a similar kind been made in reference to the busts of Haggart, Pallet, Thurtell, Mackinnon, &c. ? Are the Phrenologists not aware that such must have been the case in *every* criminal whose cast has been taken under similar circumstances ? How is it possible to judge of the *relative* development of any of the supposed organs, when the posterior and postero-lateral parts of the head are in this state of congestion ?

William Hamilton, who has favoured me with a comparison of the weight of Burke's cerebellum, with the cerebella of various classes of subjects. We need not, in the present instance, therefore, trust to the report of any external manipulation, as we thus have it in our power to set all conjecture at rest, by appealing to the most satisfactory and conclusive evidence. From this comparison it appears;—

1st, The cerebellum of Burke is *less* than the average of *all* the adult *males*. (Twenty in number.)

2d, It is *less* than the average of *all* the *impuberal males*, from *three* years of age to *fifteen*. (Seven in number.)

3d, It is *less* than the average of *all* the *adult women* under *sixty*. (Fifteen in number.)

4th, It is *less* than the average of *all* the *impuberal males* above *four*. (Two in number.)

On comparing the size of Burke's cerebellic cavities with those of the different classes of subjects in Sir William Hamilton's table of open crania, they are;—

1st, *Less* than the average of the *male adult* crania. (Thirty-three in number.)

2d, *Less* than the average of the *female adult* crania. (Thirty-two in number.)

3d, *Less* than the average of the *female impuberal* crania, from four to twelve. (Six in number.)

They are a little larger, however, than the *male impuberal* crania.

The morning I took the size of the cerebellic cavity in Burke; two subjects, one a woman of *thirty-eight*, the other a female child of *eight* years of age, happened to be lying on the table, with the crania open. I proceeded, therefore, to compare the size of their cerebellic cavities with Burke's. Sir William Hamilton was present, who, from his extensive experience and knowledge on this interesting point of controversy, predicted that the child and woman would be found to possess each a larger cerebellum than Burke. I confess I was somewhat sceptical as to the result of the experiment, but found, on measuring the dimensions, as follows:—

	Circumference.	Length.	Breadth.	Total Size.
Burke, . . .	7	2.8	1.8	11.6
Woman, . . .	7.1	2.8	2	11.9
Female child,	7.2	2.8	2.1	12.1

Hence both the woman and child proved to have the cerebellic cavities larger than they are found in the murderer Burke, and this will not fail to make the erroneous Phrenological assumption appear still more ridiculous, when it is considered, that so much of the moral degradation of this atrocious villain was referred to the size and abuse of an organ, which even an impuberal child of eight years of age possessed larger.

In addition to the number of facts which have been accumulated by Sir William Hamilton, and which constitute the extensive induction he lately communicated to the Royal Society, I cannot help re-

garding these also as strongly illustrative of his position, that while the cerebellum bears its largest proportion to the cerebrum at three years of age, the whole encephalon attains its full complement before the age of puberty, and is absolutely and relatively larger in the female than the male. It is certainly singular that physiologists have so little investigated this interesting subject of enquiry, and the scientific world will not fail to acknowledge itself indebted to the researches of Sir William Hamilton.

The public is aware that Burke suffered under a complaint which was of a scrofulous character; and the following is a report of the pathological appearances which on dissection were presented. The account was originally drawn out by Mr Miller, the assistant of Dr Monro, and being purely of a professional nature, I have thought proper to present it in Latin.

“Nefandi hujus homicidæ cadaver explorantibus, unus tantum testiculus, quod notatu dignum est, apparuit; alter enim morbo, quo laboraverat, absorptus prorsus fuerat. Morbus iste testiculi exulceratio scrophulosa fuisse videtur, et ea infra posui, quæ post mortem detecta fuerunt. Scroti exterioris aspectus a sinistra quidem raphes parte naturalis erat; a dextrâ vero ulcera complurima, sinuosa, ut ita dicam, inertia videbantur. Hæc scroti partem maxime occupabant eam, quæ, corpore erecto, femori interiori apposita est, eamque etiam ubi scrotum et femur inter se continua fiunt. Alicui minus curiose inspicienti hæc summæ cuti tantum adjacere, neque alte ad

testiculum ipsum penetrare viderentur. His tamen patefactis, externis involucris sublati, aliquantum humoris reperiatur coloris subflavi sive subfusci, ei similis qui sinibus foras effluebat. Ultra secantibus, a dextrâ, ne minimum quidem vestigium Tunicae vaginalis, *nihil testiculi*, apparuit; quorum quidem locum complebat materia quædam semi-fluida, pulla, nullo modo peculiari olens, meconium quodammodo referens, vix tamen pariter nigricans. Vesiculæ seminales solito ampliores erant, humoremque subfuscum intus habebant. Pluribus in locis scroti septum exesum erat et paucillum ideo materiæ istius subatræ in sinistro quoque latere, ad partem tunicae vaginalis superiorem, et extra eam, repertum est. Eâdem materiâ etiam refertæ erant membranæ, quæ acceleratores urinæ obtegunt, adiposa et cellulosa. A sinistro latere, tunica vaginalis et testiculus naturali, quod ad fabricam, aspectu gaudebant; *hic autem testiculus certe minor erat solito*, longe aliter ac plerumque fit, ubi alter perierit testiculus. Chorda spermatica utrinque solitam superare magnitudinem inveniebatur."

As Burke had been labouring under this complaint for many years, according to the statement of Gall and Spurzheim, we ought to have found a diminution of the opposite lobe of the cerebellum; but no such difference was observed.

In the case of Bobby Auld, a celebrated idiot boy, who was well known in Edinburgh,—"*cui mortem intulit ictus a calce asini in inguine acceptus, repertum est, neutrum testiculum in scrotum descendisse. Dexter sectione reclusus, parvulus, capiti cæco coli*

adhærebat; *sinistri ne vestigium quidem reperiri poterat.* Chorda spermatica et vesicula seminalisq; utriusque lateris naturales erant; hinc, et ex natura et historia morbi verisimile videtur testiculum sinistrum prius extitisse, et postea massa morbida et spongiosa fuisse implicatum.*

In this instance, although the cerebellum was stated to be small, yet in proportion to the cerebrum it bears its appropriate size. The cerebellic cavity measures in circumference 7.6 inches; in length 2.5; in breadth 1.9;—Total 12, which is also larger than Burke's.

I have now selected two of the most prominent features in the character of Burke:—*First*, His Destructiveness as a cold-blooded, systematic murderer. *Second*, His Amativeness, which is admitted to have been excessive; and, directing the attention of the Phrenologists exclusively to these manifestations, have proved them to be directly at variance with his Phrenological development. It is unnecessary to enter into minor details. My counter Phrenological propositions are;—

First, The organ of Destructiveness in Burke is absolutely and relatively *below* the average size, whilst Benevolence and Conscientiousness are absolutely and relatively *above* the average size.

Second, The cerebellum in Burke was also *below* the average size.

* See Dr Ballingall's Clinical Lecture for 1827.

II.

Does the Phrenological development of Hare correspond with his acknowledged Character?

The evening before this miscreant was liberated from prison, with the assistance of an able Phrenologist, and in the presence of several individuals, some of whom were favourable, others adverse, to the Phrenological theory, I took the measurement of his head, of which the following is the report :—

Size of the head,	13.8 inches.
From the ear to Lower Individuality,	4.8
From ditto to Philoprogenitiveness,	5
From ditto to Benevolence,	5.4
From ditto to Conscientiousness,	4.6
From Destructiveness to Destructiveness	5.95
From Acquisitiveness to Acquisitiveness,	5.55
The proportion of Destructiveness to the size of the head, is as 1 to 2.319.	
The proportion of Benevolence to ditto, is as 1 to 2.555.	
The proportion of Conscientiousness to ditto, is as 1 to 3.	

After consulting a number of scientific authorities, and making a variety of experiments to determine which is the best method of ascertaining the size of the head, I have not found a better suggested than

that which is adopted by hatters, who add together the length and the breadth for the purpose of taking the mean diameter. To gauge its depth, or ascertain in any way the precise capacity of the living head, I find to be impracticable; and having, as I have already stated, found on a large induction, that the proportions of the several organs to the lineal dimensions of crania, bear a general relation to the proportions of the same organs to the same encephala, I have adopted the method, to which hatters have recourse, for the purpose of giving the proportions of the organs to the diameter of the head.

On comparing Hare's organ of Destructiveness with my table of Englishmen, (twenty-eight in number,) I find

11 have it in its *absolute* size *larger*; 6 in *absolute* size the *same* as Hare.

20 have it in proportion to the size of the head *larger*.

The average *absolute* size of the organ of Destructiveness in the twenty-eight Englishmen, is 5.953.

Its average proportion to the size of the head in the same, is as 1 to 2.282.

The result is, the organ of Destructiveness in Hare, is, in its *absolute* size, *not above* the average; in its *relative* size, or in proportion to the dimensions of the head, it is *below* the average.

On examining my table of Scotchmen, (twenty-five in number,) I find

13 possess the organ of Destructiveness in its absolute size *larger* than Hare.

6 the *same*.

20 possess it *larger* in proportion to the size of the head.

The average absolute size of the organ of Destructiveness in the 25 Scotchmen, is 5.97.

The average proportion to the size of the head, is as 1 to 2.276.

The result is, that compared with my table of Scotchmen, the organ of Destructiveness in Hare is nearly the same in its absolute size as the average, the former measuring 5.95, the latter 5.97 *inches*; but in proportion to the size of the head, Hare's organ of Destructiveness is *below* the average.

On referring to my table of Irishmen, (twenty-seven in number,) I perceive

12 possess the organ of Destructiveness in its absolute size *larger* than Hare.

16 possess it larger in proportion to the size of the head.

The average *absolute* size of this organ in the 27 Irishmen is 5.907.

Its average proportion to the size of the head in same is as 1 to 2.308.

The result is, that compared with my table of Irishmen, the organ of Destructiveness in Hare is, in its *absolute* size, nearly the same as the average, the former being 5.907, the latter 5.95 *inches*; but in proportion to the size of the head, Hare's organ of Destructiveness is *below* the average.

From the general lowness of the head of Hare, the organs of Benevolence and Conscientiousness are both a little below the *average* size ; but so far from this constituting any peculiarity in his case, or being indicative of the character he manifested, several individuals in my Tables will be found to possess these pretended organs of the moral sentiments even still more deficient.

In my table of Englishmen,

3 have the organ of Benevolence in *absolute* size the *same* as Hare.

8 have it in *absolute* size *less* than Hare.

5 have it *less* in proportion to the size of the head.

In my table of Scotchmen,

2 have the organ of Benevolence in its *absolute* size the *same* as Hare.

4 have it in its *absolute* size *less*.

4, in proportion to the size of the head, have it *less*.

In my table of Irishmen,

7 have the organ of Benevolence in its *absolute* size the *same* as Hare.

6 have it in its *absolute* size *less*.

5 have it *less* in proportion to the size of the head.

Of the organ of Conscientiousness, it will be seen, in the Table of Englishmen, that

4 have it in its *absolute* size the *same* as Hare,

5 have it in its *absolute* size *less*.

In the table of Scotchmen,

6 have it in its *absolute* size the *same* ;

4 have it in its *absolute* size *less* than Hare.

In the table of Irishmen,

8 have the organ of Conscientiousness in its *absolute* size the *same* as Hare ; 2 *less*.

Hence, notwithstanding that the head of this murderer is characterised by a deficiency in the development of the alleged organs of Benevolence and Conscientiousness, many individuals of exemplary character are found to possess the same organs still more deficient ; and consequently, this configuration is by no means indicative of that moral degradation which the murderer exhibited. It should also be remembered that the persons whose measurements I have presented in my Tables, were taken *without any selection* ; for had I, in imitation of the Phrenologists themselves, proceeded on the principle of excluding from my induction all negative testimony, and given merely those examples which favoured my own views, I could have collected many more with the Destructiveness larger than Hare, and the presumed organs of Benevolence and Conscientiousness absolutely and relatively smaller. But by merely having recourse to indiscriminate measurements, several such have occurred, and consequently we are entitled to conclude that such a configuration cannot be relied on as an indication of moral depravity, but is a common condition of the head, which may co-exist with every variety of disposition.

The most remarkable, and best developed Phreno-

logical organ in the head of Hare, is his *Ideality*. At the time we took the measurement, one of the most highly-gifted and popular of our living poets was present, whose genius is peculiarly characterised by the vividness and power of its *idealism*. On applying the callipers to the organ of ideality in Hare, each leg of the callipers resting on the origin of the temporal muscle, and transferring them to corresponding points on the head of the poet, we found that Hare possessed a larger organ of ideality than the poet. When applied to the former, the callipers rested on the origin of the muscle ; when we attempted to apply them to the latter, they came down far over the belly of the muscle. The experiment was several times repeated, and *from whatever point* of the organ the measurement was taken, the result proved to be the same. Hare's organ of ideality, also, is larger than the same organ in Sheridan, Sterne, Canning, Voltaire, and Edmund Burke, the distinguished and eloquent author of the Letters on the French Revolution.

Notwithstanding his superior development of the organ of ideality, it would be difficult to conceive a more stupid and miserable wretch than Hare.

When we visited him, he was not inclined to answer any questions, until repeatedly assured by the Governor that we were not sent by the Sheriff to make any investigation into the particulars of his case. To the enquiry, why, in Court, he had said it was indifferent which way he was sworn, and to the observation that we had understood he was a Roman

Catholic, he retorted, with a contemptuous sneer, he "did not rightly mind what he was." To the question, whether his conscience ever troubled him, he answered, with a laugh, "No, with the help of God." His whole demeanour was that of a man evidently devoid of every moral reflection, and he seemed, with his head adorned, as if in mockery of Phrenology, with large organs of Ideality, Causality, and Wit, to be only a few degrees removed from the very lowest of the brute creation.

The counter Phrenological propositions deduced from the case of Hare, are—

First, The organ of Destructiveness is in this atrocious murderer *not above* the average size.

Second, Many individuals of exemplary character, at the same time that they possess the organ of Destructiveness larger than Hare, exhibit a greater deficiency in the alleged organs of Benevolence and Conscientiousness.

I have not, it may be added, referred to the supposed organ of Amativeness, being satisfied that it is impossible to ascertain its size by any external manipulation. The uncertain and varying thickness of the muscles at the back of the head and neck, must alone oppose a very considerable impediment to any such pretension; in addition to which, it has been observed by Sir William Hamilton, that the superior external spine, which is supposed to correspond with the internal crucial spine of the occipital bone, and consequently to afford an indication of the height to

which the cerebellum ascends, frequently bears no such correlation. In a number of crania, he has observed that the internal crucial spine sometimes descends as much as an inch *below*, sometimes ascends as much as an inch, or more, *above* the line of the external occipital; and the latter, therefore, is no criterion by which the manipulator can judge of the size of the cerebellum.

III.

Is it possible to distinguish the crania of murderers from other crania by the Phrenological indications attributed to them?

I need scarcely observe, that the following are the indications which Phrenologists attribute to the crania of murderers:—

- 1st, A large endowment of the organ of Destructiveness.
- 2d, A deficiency in the development of the alleged organs of the Moral Sentiments.
- 3d, A deficiency in the anterior cerebral development, or the quantity of brain before the ear; whilst the posterior cerebral development, or quantity of brain behind the ear, is supposed to bear the greater proportion to the size of the head.

Before communicating to the Society the result of my investigations on these subjects, I shall briefly refer to the crimes for which the several murderers

were executed, whose cranial measurements are included in this part of my induction.

I. *Burke.*

The atrocities of this murderer have already been considered, and the propositions deduced from the measurements of his cranium fully stated.

II. *Haggart.*

The particulars of the crime for which this murderer was executed must still be in the recollection of the public. He was an expert thief, and was hanged for murdering the turnkey of the prison in which he was confined.

III. *Scott.*

This murderer was tried before the Court of Justiciary, at Jedburgh. By the evidence adduced on the trial, it appeared that, having quarrelled at Earlston fair with two men, his former companions, he overtook them on their road homewards, and barbarously murdered them; after which, he took a knife from his pocket, and mangled their bodies in a most savage manner. "He was unanimously found guilty, and sentenced to be executed as near the spot where he committed the murders as should be found convenient. During the whole trial, he behaved himself with great self-possession, and continued perfectly calm and composed after the fatal verdict was returned."*

* A particular account of the execution, dying declaration, and behaviour, of Robert Scott, who was executed on that part of the

V. *Anderson*.—VI. *Glen*.

These two men were executed in Ayrshire, for assaulting several people on their way home from church, and murdering two of them in a most brutal manner.

VII. *Balfour*.

This culprit was executed at Dundee, for murdering his wife, in a fit of jealousy.

VIII. *Gordon*.

This murderer was found guilty of killing John Elliot, a poor pedlar boy, rather weak in his intellect, at a solitary place on the farm of Upper Cassock, in the parish of Eskdalemuir, after which he robbed him of his pack. From the evidence, it appeared "that Gordon fastened himself on the unfortunate youth for three days, although they had no previous acquaintance, was seen entering with him into the wilds of Eskdalemuir, about three o'clock in the afternoon, and, on the evening of the same day, was seen emerging from these wilds *alone*, in possession of, and selling articles from, the pack, which was identified as having belonged to the murdered boy. It was further proved, that the instrument made use of in committing the murder was a clog which was worn by Gordon. The criminal behaved, during the address of the Lord Chief Justice, in a very unbe-

road between Earlstoun and Greenlaw, for the barbarous murder of two men, on the 30th of June last. James Docherty, writer.

coming manner, and, when the judge earnestly called on him to prepare for eternity, and to throw himself on the mercy of the Redeemer, he muttered between his teeth, ' I renounce it—I renounce it.' ”*

IX. *Cockburn.*

This murderer was executed for stabbing a man with a knife, in a fit of passion. The crime was committed at Falkirk ; and it is unnecessary to detail the particulars.

X. *Lingard.*

This criminal was tried at the assizes in Derbyshire for the murder of a woman who resided by herself at the toll-bar at Wardlaw Myres, in the parish of Tideswell, in that county. The murderer was discovered, by circumstantial evidence, in a singular manner. He had, it appears, after committing the murder, taken all the money he could collect in the toll-house, and with it a pair of shoes that had belonged to the deceased. When the report of the murder disturbed the neighbourhood, the fact of his possessing the shoes excited suspicion, and ultimately led to his apprehension. He at first strenuously denied all participation in the crime, but subsequently confessed himself to have been guilty. His confession states, that having frequently cohabited with the murdered woman, she on one occasion declared that she would “swear her life against him,” on which he

* Constable's Scots Magazine, 1821, p. 582.

"took the determination to kill her, and immediately seized her by the neck, and held her for about ten minutes until she lay still, and he thought she was dead. He then left loose of her; but, to prevent the possibility of her recovering, tied a pocket handkerchief, which she had round her head when he went in, but which had come off in the struggle, tight round her neck."* This murder, it will be observed, was committed in a fit of passion, and in self-defence.

XI. *Pepe.*

This murderer was a Spaniard, and one of the atrocious leaders of a band of pirates, in the West Indies. A brief account of the atrocities of Pepe may be gathered from a report in the *Phrenological Journal*.† He was one of the four pirates who murdered the crew on board the *Crawford*, a vessel which, loaded with a cargo of American produce, sailed from Providence, Rhode Island, and was bound for Mantaza, in the Island of Cuba. The pirates, it is stated, first endeavoured to poison the crew, but, failing in this attempt, resolved to have recourse to more desperate means. They armed themselves accordingly for the bloody tragedy; and, in the dead of night, having alarmed the crew by screaming frightfully in various parts of the vessel, every individual, as he came on deck, either from the fore-castle or cabin, was stabbed. The skull of Pepe was brought over to this

* Confession of Anthony Lingard, dictated in the presence of one of his Majesty's Justices of Peace in the county of Derbyshire.

† Vol. v. p. 365.

country by Captain Graham, and presented to the Edinburgh Anatomical Museum by his brother, the distinguished Professor of Botany in this University.

XII. *Macmillan.*

This man was executed in Ayr, for the murder of a woman, to whom, during the time of pregnancy, he administered some drug for the purpose of producing abortion. As he probably was guilty of this crime without any intention of killing her, it is unnecessary to enter into the details of the evidence adduced on the trial.

XIII. *Mortimur Collins.*

This murderer was executed in Glasgow, for stabbing the keeper of Bridewell. He was a determined villain, and states in his confession, that, notwithstanding he had been indicted before the Sheriff Court, and committed to prison, for beating an old man in a most barbarous manner, on his liberation he again resumed his abandoned course of life.* He was unanimously found guilty.

XIV. *Clydesdale.*

This murderer, who had been a collier at Lough Drumgulloch, in the parish of New Kirkland, was

* The last Speech, Confession, and Dying Declaration of Mortimur Collins, soldier in the 37th Regiment of foot, who was executed at Glasgow on Wednesday, the 7th day of November, 1792, and his body given to the Doctors, for the murder of John Pantou, keeper of Bridewell.—Printed by Galbraith.

convicted of "wickedly and maliciously assaulting Alexander Love, an old man, and inflicting on his head, and other parts of his body, many severe blows with a coal pick, in consequence of which he died soon after." Throughout the trial, it is stated that he conducted himself with the most brutal indifference, and heard the verdict from the Jury, and the pathetic address of the Judge, without the slightest emotion. During the course of the trial it came out, on the cross-examination of one of the witnesses, that when Clydesdale returned home after committing the fatal act, he seized a cat that was in the room, dashed it against the floor, and put it on the fire. The relation of this piece of cruelty excited a sensation of horror through the Court.*

XV. *M. Kean.*

This murderer was executed in Glasgow. He was a notorious and atrocious villain, who, from the earliest period of his life, was addicted to every species of vice. He finally consummated his career of crime by murdering a man named Buchanan, the Lanark carrier. When under sentence of death, he wrote, like Haggart, a narrative of his past life, which contains, like all documents of a similar kind, much hypocritical and whining cant. Rochefoucault, in his *Maxims*, remarks, that "Criminals sometimes, at their execution, affect a constancy and contempt of death, which is in fact nothing more than the fear

* Constable's Scots Magazine, October 1818, p. 378.

of facing it. Their constancy and contempt may be said to be to the mind, what the cap is to the eyes." There may be much truth in this observation; but it more frequently happens, that the most unprincipled and abandoned villains, finding their career of guilt drawing to a close, and a certain and ignominious death awaiting them, suddenly assume an air of piety and devotional cant, which are mere ebullitions of temporary fear, and little indicative of their real dispositions; for were their dungeon doors thrown open, and their liberty restored to them, there is every probability, as experience has repeatedly proved, that they would again engage in the same crimes with which they have been familiar from youth. The characters of such miscreants are not to be judged of by their dying speeches, confessions, and declarations, but by the conduct they have exhibited during the general tenor of their lives; and it is well known, that M'Kean was a treacherous, cruel, and abandoned culprit.

XVI. *Buchanan.*

This murderer was executed in Glasgow. On his trial it appeared, that the woman he murdered had excited his ill-will, by giving evidence against a girl who had stolen a shawl, and who was a favourite of his. He accordingly called at a house which he knew she frequented, and having enticed her into a closet with him alone, beat her in a brutal manner, and kicked her violently several times in the abdomen, in consequence of which she died a short time afterwards, in excruciating agony. The Jury, it is stated, "found

the prisoner guilty by a plurality of voices, and he heard the verdict and sentence with utter indifference.*

XVII. *Kerr.*

This murderer was executed in Greenock for killing his wife, by beating her to death. One of the witnesses, on the trial, deposed, that "he looked in at the window, and saw Kerr's wife lying on the floor, and Kerr standing over her with a stick in his hand beating her."† The poor woman was at that time already dead. The cranium of this criminal being an injected arterial preparation, I could not, without spoiling it, obtain, according to the usual method, its capacity.

XVIII. *Divan.*

This murderer was executed in Glasgow for cutting his wife's throat. On the morning of the murder, pretending that he wished to shave himself, he made the unfortunate woman borrow the razor with which he perpetrated the deed. A boy who was one of the witnesses on the trial, stated, that "while he was playing with a ball in the same close in which Divan's family lived, his ball having run near the prisoner's house, he went in search of it, and happening to look in at the window, saw Mrs Divan sitting

* Constable's Scots Magazine for October 1819, p. 372.

† Report of the Justiciary Trials in the Glasgow Chronicle for 1827.

on a stool, and the prisoner came behind her, and deliberately cut her throat, so as almost to sever her head from her body."* The murderer, it appeared, then carried the bleeding corpse to the bed, where it was shortly afterwards discovered by her own children; and he deliberately changed his clothes to escape detection.

The most zealous Phrenologists must be constrained to admit, that measurements from the crania of these murderers will constitute a very extensive and complete induction. I shall proceed, therefore, to enquire, whether there be any truth in the assumption, that murderers possess always a large organ of Destructiveness; and shall compare the measurement of this organ in the cranium of each murderer, with the average measurement of the same, in my general Table of adult male crania.

I shall give, first, its *absolute*—secondly, its *relative* size.

The *absolute* size of the organ of Destructiveness, or the distance from Destructiveness to Destructiveness, measures on the skull of

Haggart,	5.2	inches, which is below the average.
Scott,	5.3	which is below the average.
Anderson,	5.2	which is below the average.
Glen,	5.4	which is below the average.
Balfour,	5.45	which is below the average.
Gordon,	5.3	which is below the average.
Cockburn,	5.4	which is below the average.

* See Report of Justiciary Trials in the Glasgow Chronicle for 1824.

Lingard,	4.95	inches, which is <i>below</i> the average.
Pepe,	4.8	. . which is <i>below</i> the average.
Macmillan,	5.3	. . which is <i>below</i> the average.
Mortimur Collins,	5.35	. . which is <i>below</i> the average.
Clydesdale,	5.2	. . which is <i>below</i> the average.
M ^c Kean,	5.4	. . which is <i>below</i> the average.
Buchanan,	5.3	. . which is <i>below</i> the average.
Kerr,	5.5	. . which is <i>below</i> the average.
Divan,	5	. . which is <i>below</i> the average.

Not only is the organ of Destructiveness in the crania of these murderers, in its absolute size, below the average of the same organ in the crania collected by Dr Spurzheim, the measurements of which I have included in my general Table, and referred to, as a standard of comparison;—but it is also below the average size of the same organ in the extensive series of crania collected by Sir William Hamilton, which, as I before observed, were principally British specimens.

Phrenologists will in vain attempt to argue, that the measurement of this organ does not give its size; for if it be maintained, as it always hitherto has been, that its size is constituted by a greater or lesser degree of cerebral development, indicated by a corresponding breadth of the cranium, or by a protuberance immediately over each meatus; then the measurement of any series of crania in this direction, cannot fail to give an accurate report of the several comparative sizes of this organ, as its greater or lesser development must always co-exist with a corresponding breadth, or narrowness of the cranium.

I next proceed to give the relative size of this or-

gan, or the proportion which it bears to the rest of the encephalon; and here I may remark, that the method of ascertaining the weight of the encephalon, by filling the cranium with sand, and reducing the specific gravity of the sand to the specific gravity of the brain, has given in this induction a result which corresponds, as nearly as could have been anticipated, with the observations of the Wenzels, who give the weight of the whole brain

At 18 years of age, as 20940 <i>grains</i> .			
At 22	. . . .	21820	dp.
At 25	. . . .	22200	do.
At 31	. . . .	24120	do.
At 46	. . . .	20490	do.*

The average weight of the encephala of fifteen criminals, executed at various ages, but generally nearer to the latter period of life, is given in my table of murderers at 20605 *grains*.

The relative size of the organ of Destructiveness; or its proportion to the encephalon, compared with the average proportion of the same organ in my general Table of adult male crania, is

In Haggart,	. as 1 to 4264.807, which is <i>below</i> the average.
In Scott,	. as 1 to 3546.415, which is <i>above</i> the average.
In Anderson,	. as 1 to 3943.653, which is <i>below</i> the average.
In Glen,	. as 1 to 4065.370, which is <i>below</i> the average.
In Balfour,	. as 1 to 3927.706, which is <i>below</i> the average.
In Gordon,	. as 1 to 3736.037, which is <i>below</i> the average.

* De Penitiori Structura Cerebri. Tab. iii.

In Cockburn, . . .	as 1 to 3659.259, which is nearly the same, but rather <i>below</i> the average.
In Lingard, . . .	as 1 to 3287.676, which is <i>above</i> the average.
In Pepe, . . .	as 1 to 4047.708, which is <i>below</i> the average.
In Macmillan, . . .	as 1 to 3696.037, which is nearly the same, but rather <i>below</i> the average.
In Mortimer Collins, as 1 to 4508.598, which is <i>below</i> the average.	
In Clydesdale, . . .	as 1 to 4218.076, which is <i>below</i> the average.
In McKean, . . .	as 1 to 3702.777, which is <i>below</i> the average.
In Divan, . . .	as 1 to 4568, which is <i>below</i> the average.

Accordingly, of the fifteen crania in which the weight of the encephalon could be ascertained, thirteen possess the organ of Destructiveness, even in proportion to the general size of the brain, *below* the average.

The murderers to whose crania I now refer, were most abandoned and atrocious characters; and the outrages for which they severally were convicted, are among the most frightful that have been recorded in the annals of crime. The murders, in particular, committed by Anderson, Glen, Gordon, and Buchanan, were unprovoked by any aggression on the part of their unhappy victims, and prompted only by that infernal spirit of cruelty, which triumphs in the infliction of pain, and heeds not how many human lives are sacrificed in its appalling career.

In the case of Clydesdale, it is a notorious fact, that after beating to death, without any apparent motive, an inoffensive old man, he returned home, and with fiendish exultation swore, tossing up a halfpenny at the same time, that as the coin "came down either a head or tail," he would murder either his own wife

or the cat that was in the room. The latter happened to return, and the wretch seized the poor animal immediately ; and, as I have before stated, having dashed it against the floor, placed it on the blazing fire. The case of the pirate Pepe is also remarkable. One witness states, that, during the scene of carnage on board the Crawford, he saw Pepe standing against the fore-castle of the vessel with a knife in his hand. As he approached him, Pepe assumed the attitude of striking, and on turning to avoid the blow, he received a stab in the shoulder. Hastening across the deck, he perceived a man, whom he supposed to be the captain, leaning against the side, and moaning piteously. As he recognised him, the sufferer enquired if they could get nothing to defend themselves with. Witness seized a handspike, which was taken possession of by Potter ; and as he was going aloft, the blood of his fellow-sufferers descended in a shower on his head, and inspired him with such horror that he was incapable of advancing. This terrific scene took place a little after midnight, on a bright starlight night. When day at length began to dawn, the same witness saw Pepe, and Courro, another of the pirates, come on board with two muskets, which they loaded in his sight. He then saw them advance from the fore-castle, and call up some one from below, whom he recognised to be Aza Bicknell, one of the unfortunate passengers. This poor fellow seemed wounded and writhing with agony : a bandage surrounded his body. He was then either ordered to throw, or threw himself overboard ; and, in the act of falling,

was shot at by Courro, whether with or without effect he could not tell ; but when in the water, Pepe discharged his piece at him, and from the shriek that followed as the poor fellow sank, he supposed it took effect. Another witness states, that he saw Pepe leaning over a man who had fallen, and having exclaimed, "*Ah! not yet dead!*" beat the body in a brutal manner, and threw it overboard. After the bloody tragedy was completed, it is stated in the report, that they strided across the deck, exulting in their victory, and resembling demons rather than men. Each contended for the honour of having perpetrated the greatest number of murders. It is further added, that Pepe confessed the first murder he committed was on a fellow-classmate at school, when he was only *fourteen* years of age, and he could not recollect how many he had since perpetrated.

The secretary of the Phrenological Society at Washington transmitted to this country the report whence these particulars have been extracted, and, at the same time, the measurement of the skull. I am under the necessity of stating, that the latter is very inaccurate. I do not pretend to know what sort of callipers are used in America, or whether the elsewhere immutable principles of mathematical science may there bow down before the genius of Phrenological superstition ; but of this I am satisfied, that the organ of Destructiveness has here been represented more than half an inch larger than it actually measures. The dimension of it, as given in the *Phrenological Journal*, is *5.4 inches*, which, be it observed, is

at any rate *below* the average ; but the correct measurement is only 4.8 ; and I defy any person, using the callipers honestly, to make so considerable a difference. My attention was directed to this skull by Sir William Hamilton, who first noticed that its remarkable narrowness from Destructiveness to Destructiveness constitutes its characteristic peculiarity ; and he informs me, that among the number of crania he has examined, he has never met with one so narrow in this dimension. Here, therefore, is the skull of a cold-blooded and execrable murderer, not only failing to possess a large organ of Destructiveness, but possessing it, according to *any* standard, absolutely and relatively below the average. So triumphant a case is this against the Phrenological *hypothesis*, that I venture, with confidence, to challenge the Phrenologists to produce any cranium of the same size, that measures so narrow from Destructiveness to Destructiveness, as does the skull of this atrocious and bloody murderer.

In my Table of murderers, and in the Table of adult male crania, I have also given measurements of the organs of Secretiveness, Acquisitiveness, and Combativeness, the manifestations attributed to which very frequently form characteristic features of murderers. M'Kean, for example, was at an early period of life addicted to thieving ;—his organ of Acquisitiveness is *below* the average. Haggart was by “habit and repute” a thief ;—his Acquisitiveness is *below* the average. Scott, Mortimer Collins, and Haggart, were notoriously quarrelsome, and of dispositions given

to Combativeness;—each possesses the organ of Combativeness *below* the average.

I now proceed to consider the second condition which is supposed by [Phrenologists to characterise the crania of murderers—*viz.* the deficiency of the alleged organs of the moral sentiments.

I propose estimating the development of these by measuring, as the Phrenologists direct, the organ of Benevolence, and that of Conscientiousness, from the meatus. This measurement gives the distance of the expansion, or the length of the development, which is the first and principal condition of the size of every Phrenological organ. The breadth or periphery of each is, on the other hand, capable of no demonstration, inasmuch as the circumscribed boundaries of each organ are purely ideal, and the exact limits ascribed to each depend, in every instance, on the fancy of the manipulator. The absolute size of the organ of Benevolence, estimated by measuring from the meatus to its centre, is in

The murderer Haggart,	5.15 inches,	which is <i>above</i> the average.
. . . Anderson,	5.05 . . .	which is nearly the <i>same</i> as the average.
. . . Glen,	5.05 . . .	which is nearly the <i>same</i> as the average.
. . . Balfour,	5.2 . . .	which is <i>above</i> the average.
. . . Cockburn,	5.2 . . .	which is <i>above</i> the average.
. . . Macmillan,	5.2 . . .	which is <i>above</i> the average.
. . . Collins,	5.25 . . .	which is <i>above</i> the average.
. . . Clydesdale,	5.2 . . .	which is <i>above</i> the average.
. . . M'Kean,	5.1 . . .	which is <i>above</i> the average.
. . . Buchanan,	5.1 . . .	which is <i>above</i> the average.

The murderer Kerr, 5.4 inches, which is *above* the average.
 . . . Divan, 5.2 . . . which is *above* the average.

Four only of the seventeen murderers possess the organ of Benevolence in its absolute size *below* the standard of comparison ; and in these exceptions, the general capacity of each cranium, it should be observed, is remarkably small.

The organ of Benevolence, even in proportion to the size of the encephalon, is in the murderer Scott *above* the average ; Anderson, *above* the average ; Gordon, who murdered the pedlar boy, *above* the average ; also in Cockburn, *above* the average ; in Lingard, *above* the average ; in the atrocious Pepe, *above* the average ; in Macmillan, *above* the average ; in M'Kean, *above* the average.

Here it may be observed, that the anti-Phrenological evidence, in these cases, does not rest on the circumstance of these murderers possessing an organ of Benevolence, because every individual is supposed to have all the organs ; but it rests on the incontrovertible fact of their possessing it, both in absolute and relative size, *above* the ordinary standard. A large development of Benevolence, on the skulls of such atrocious monsters as Pepe, Gordon, Scott, &c. is as irreconcilable with their characters, as the profession of the most heavenly virtue is opposed to the perpetration of the most damning iniquities.

The organ of Conscientiousness next claims consideration ; and in its absolute size, estimated by measurement from the meatus to its centre, is

In Haggart, . . .	4.4 inches,	which is nearly the same as the average.
In Anderson, . . .	4.5 . . .	which is <i>above</i> the average.
In Gordon, . . .	4.4 . . .	which is nearly the same as the average.
In Macmillan, . . .	4.6 . . .	which is <i>above</i> the average.
In Mortimur Collins, . . .	4.6 . . .	which is <i>above</i> the average.
In Clydesdale, . . .	4.75 . . .	which is <i>above</i> the average.
In M'Kean, . . .	4.4 . . .	which is nearly the same as the average.
In Buchanan, . . .	4.4 . . .	which is nearly the same as the average.
In Kerr,	4.9 . . .	which is <i>above</i> the average.
In Divan,	4.5 . . .	which is <i>above</i> the average.

Anderson, Gordon, Lingard, Macmillan, and M'Kean, possess the organ of Conscientiousness, even in proportion to encephalon, *above* the average.

Lastly, I proceed to consider the third condition which is presumed to characterise the crania of murderers—*viz.* the alleged deficiency of the anterior cerebral development. This may fairly be judged of by two measurements; *first*, the distance from the meatus to Lower Individuality, which the Phrenologists themselves commonly take; *second*, the distance from the meatus to Causality, which, being situated higher in the forehead, gives a better idea of the comparative proportion of the anterior development.

The quantity of brain before the ear, estimated by its length, and judged of by these dimensions, is

In Haggart, *above* the average.
In Glen, *above* the average.

In Balfour, *above* the average.
 In Gordon, *above* the average.
 In Cockburn, *above* the average.
 In Pepe, *above* the average.
 In Macmillan, *above* the average.
 In Mortimur Collins, *above* the average.
 In M'Kean, *above* the average.
 In Buchanan, *above* the average.
 In Kerr, *above* the average.

The anterior development in the skull of Burke is also fully proportioned to the general size of the skull. I have, on this subject, satisfied myself by a still more conclusive method of estimating the comparative quantities of brain before the ear. I have measured from meatus to meatus, with a piece of string, passing it through the centre of the organs of Comparison and Causality, and found decidedly, that the crania of murderers exhibit no remarkable deficiency of brain before the ear, or preponderance of development in the region to which the animal propensities are referred.

In further confirmation of the several positions I have maintained, I proceed to give the measurements of the cranium of the late celebrated Dr David Gregory, who was Professor of Mathematics in the University of Edinburgh, and subsequently appointed Savilian Professor of Astronomy in Oxford. He was the distinguished friend and companion of Sir Isaac Newton; he was the learned author of several valuable works on mathematical science; and a man of high moral and intellectual virtue. He died on his way

from Oxford to London, in Berkshire; and the skull is authenticated by the circumstance of its having been taken from the place of interment by a gentleman, who transmitted it to a distinguished individual in this city, who has it still in his possession.

The capacity of this cranium, or the weight of its encephalon, is 21776 *grains*.

From Destructiveness to Destructiveness, is 5.7 *inches*; and its proportion to the encephalon as 1 to 3820.350.

The organ of Destructiveness in the learned Professor is, in its *absolute* size, larger than the same organ in every murderer included in my induction; and, even in proportion to the general size of the brain, larger than the same in Burke, Haggart, Anderson, Glen, Balfour, Pepe, Mortimur Collins, Clydesdale, and Divan.

The organ of Combativeness in the Professor measures 5.6 *inches*, which is larger than the same organ in every murderer.

His organ of Acquisitiveness is 4.95 *inches*; Balfour has it the same; and every other murderer has it *less*, including even the thieves Gordon, M'Kean, and Haggart.

His organ of Secretiveness is 5.7 *inches*, which is larger than the same in each of the murderers.

Let us now look to the organs of the moral sentiments;—the organ of Benevolence, on the cranium of Dr David Gregory, measures 5.1 *inches*—its proportion to the encephalon is as 1 to 4269.803.

Burke has this organ in its absolute size, the *same*

as the celebrated Professor. Glen and Anderson have it *nearly the same*. M'Kean and Buchanan have it the *same*. Balfour, Cockburn, Macmillan, Mortimur Collins, Clydesdale, Kerr, and Divan, all atrocious miscreants, have it *larger*.

Even in proportion to the size of the encephalon, Burke, Scott, Anderson, Balfour, Gordon, Cockburn, Lingard, Pepe, Macmillan, Clydesdale, and M'Kean, have each a *larger* organ of Benevolence than the learned and virtuous Professor.

The organ of Conscientiousness, on the skull of Dr David Gregory, measures 4.7 inches. Its proportion to the encephalon is as 1 to 4633.191.

Clydesdale and Kerr have this organ in its absolute size *larger*; and in proportion to the encephalon, Burke, Anderson, Gordon, Lingard, Pepe, Mortimur Collins, Clydesdale, and M'Kean, have each the organ of Conscientiousness *larger* than the Professor.

Let us now proceed to the intellectual organs, remembering, at the same time, the justly distinguished character of Dr David Gregory.

The distance from the meatus to Comparison, measures, on his cranium, 5 inches; the same organ is,

In Haggart, 4.9 inches, *nearly the same* as the Professor's.

In Anderson, 4.9 . . . *nearly the same*.

In Glen, . . 5 . . . the *same*.

In Pepe, . . 5 . . . the *same*.

In Balfour, . 5 . . . the *same*.

In Macmillan, 4.9 . . . *nearly the same*.

In Collins, . 5.2 . . . *larger*.

In M'Kean, . . 5 . . .	the same.
In Buchanan, 5.1 . . .	larger than the Professor's.
In Kerr, . . 5.2 . . .	larger.

The organ of Causality, to which the power of tracing the relations of cause and effect, and of reasoning closely, is referred, measures, in Dr David Gregory, from the meatus to the Causality on the *opposite* side of the skull, 5.1 inches.

By taking this measurement, an accurate report is also given of the general anterior cerebral development.

The organ of Causality, or quantity of brain before the ear, thus estimated, measures,

In Haggart, . . .	5.25 inches, which is larger than the Professor's.
In Scott, . . .	5.2 . . . which is also larger.
In Anderson, . . .	5.3 . . . which is also larger.
In Glen, . . .	5.35 . . . which is also larger.
In Balfour, . . .	5.4 . . . which is also larger.
In Macmillan, . . .	5.2 . . . which is also larger.
In Mortimur Collins, . . .	5.5 . . . which is also larger.
In Clydesdale, . . .	5.3 . . . which is also larger.
In M'Kean, . . .	5.4 . . . which is also larger.
In Buchanan, . . .	5.3 . . . which is also larger.
In Kerr, . . .	5.7 . . . which is also larger.

Hence these criminals prove to have had each a greater quantity of brain before the ear, than the distinguished Professor of Astronomy.

From the meatus to the occipital spine, which may be taken as a criterion of the posterior cerebral development; or the quantity of brain behind the ear,

to which region the animal propensities are ascribed, measures on the cranium of Dr David Gregory 4.35.

On the skull of Haggart,	4.05 inches,	which is less than the Professor's.
Scott,	4.05	which is less.
Glen,	4.3	which is less.
Anderson,	4.05	which is less.
Pepe,	3.6	which is less.
Balfour,	3.7	which is less.
Gordon,	3.5	which is less.
Lingard,	3.75	which is less.
Mackmillan,	3.8	which is less.
Mortimur Collins,	3.8	which is less.
Clydesdale,	3.7	which is less.
M'Kean,	3.7	which is less.
Buchanan,	3.5	which is less.
Kerr,	4	which is less.
Divan,	3.9	which is less.

Hence, in direct opposition to the Phrenological assumption, the philosopher proves to have the larger posterior development; and the murderers to have the organs of the animal propensities consequently *less* than the individual of high moral and intellectual attainment.

The counter Phrenological propositions deduced from the present induction, are,

First, The most atrocious murderers not only fail to possess a large endowment of the alleged organ of Destructiveness, but have it, very frequently, both *absolutely* and *relatively* below the average size.

Second, The most cruel and horrid murderers fre-

quently possess a high development of the pretended organs of the moral sentiments, particularly those of Benevolence and Conscientiousness.

Third, Murderers do not possess a less development of the supposed intellectual organs, nor a greater development of those to which the animal propensities are referred, than individuals of high intellectual and moral character.

Here I may observe, that the first ten murderers in my Table constitute a part of Sir William Hamilton's induction, he having, in addition to his general Table of European male crania and the males of Spurzheim, allowed me to take extracts of measurements from his Table of executed murderers.

For the use of the other crania, the measurements of which I have presented in my Table, I am indebted to Dr Jeffray, the learned professor of Anatomy in the University of Glasgow. I am also obliged to the Royal Physical Society of Edinburgh, for the use of the skull of Lingard, who was executed in Derbyshire.

Sir William Hamilton, I may add, after instituting a fair enquiry into this subject some months ago, came to conclusions similar to those which I have above stated. Taking the skulls of *all* the murderers preserved in the different musea of this University, amounting to above a dozen, as constituting at once a *large* and an *unselected* series, he had ascertained that, whether compared with any general average, or with the heads of individuals remarkable for their moral and intel-

lectual virtues, there was nothing to warrant the doctrine of the Phrenologists, that such criminals are distinguished from other persons by any excess of the pretended organs of Destructiveness, and of those of the animal propensities in general, or by any deficiency in those dimensions which express the Phrenological development of the intellectual and moral powers ; and on this induction he has established one of the propositions in his forthcoming work, "*The Fictions of Phrenology, and the Facts of Nature.*"

IV.

Do the most notorious thieves possess the organ of Acquisitiveness larger, or that of Conscientiousness smaller, than Individuals of exemplary character ?

To determine this question, I shall briefly state to the Society, that I have taken measurements of the organs of Acquisitiveness and Conscientiousness, and at the same time, the general size of the head, in an unselected class of individuals, English, Scotch, and Irish, and compared these with similar measurements from the heads of all the most notorious thieves in the Edinburgh Jail and Bridewell.

The number of these convicted thieves proved to be 22 ; and of these, 20 are Scotchmen. The average absolute size of the organ of Acquisitiveness in them, is 5.525. The average absolute size of their organ of Conscientiousness, 4.806 inches.

On referring to my Table of Englishmen, (28 in

number,) 14 have the organ of Acquisitiveness, in its absolute size, *above* the average; and 12 that of Conscientiousness *below* the average of these organs, in the 22 thieves.

On referring to my Table of Scotchmen, (25 in number,) 16 have the organ of Acquisitiveness, in its absolute size, *above*; and 11 that of Conscientiousness *below* the average of the same, in the thieves.

On referring to the Table of Irishmen, (27 in number,) 14 have the organ of Acquisitiveness, in its absolute size, *above*; and 16 that of Conscientiousness *below* the average of the same organs in the thieves.

Accordingly, of the 80 respectable individuals taken without any selection, 44 have the organ of Acquisitiveness, in its absolute size, *above* the average; and 39 that of Conscientiousness, in its absolute size, *below* the average of the same organs in the above unselected number of notorious and convicted thieves.

Our inability to ascertain accurately its depth, cannot fail to oppose an almost insuperable difficulty to every attempt, to determine accurately the size of the living head. The method to which hatters have recourse, and which gives only its average length and breadth, is, I am aware, in many respects very imperfect, yet the only one of which even Phrenologists can avail themselves. In the case of Hare, I have given the proportions of the several organs to these dimensions, and shall, in the present comparison, adopt the same plan. I shall not, therefore, here enter into any discussion on the general doctrine of proportions. Many will, I am satisfied, consider it

sufficient to prove, that from a large class of individuals taken without any selection, the average *absolute* size of an alleged organ, is found not to co-exist with the disposition it is supposed to characterise.

Desirous, however, of rendering my induction as complete as possible, I have given not only the *absolute*, but also the *relative*, sizes of the several organs, or their proportions to the dimensions of the head, as far as during life the latter can be determined.

The average relative size of the organ of Acquisitiveness, or its average proportion to the size of the head, in the 22 thieves, is as 1 to 2.421 ; that of Conscientiousness, as 1 to 2.787.

On referring to the Tables, it will be seen, that of the 28 Englishmen, 11 possess the organ of Acquisitiveness *above*, 16 that of Conscientiousness, in proportion to the size of the head, *below*, the average of the same in the 22 thieves.

Of the 25 Scotchmen, 13 have the organ of Acquisitiveness *above*, 16 that of Conscientiousness, in proportion to the size of the head, *below* the average of the same organs in the thieves.

Of the 27 Irishmen, 7 have the organ of Acquisitiveness *above*, and no fewer than 22 that of Conscientiousness, even in proportion to the size of the head, *below*, the average of the same in the thieves.

The counter Phrenological proposition deduced from this induction, is,

The organ of Acquisitiveness is often absolutely and relatively *less*, and that of Conscientiousness absolutely and relatively *larger*, in the most no-

torious thieves, than in individuals of exemplary character.

The only comment I should conceive it necessary to make on these deductions, is sufficiently expressed by Mr Combe, who, in speaking of the truth or falsehood of Phrenology, remarks : " If two individuals were found to possess a larger development of Acquisitiveness ; but if in the one Conscientiousness was very large, and in the other very small, and we were told that the one was a thief, and the other an honest man, how complete would the refutation be, if the one possessing the larger Conscientiousness were found to be the rogue."*

The facts that constitute the present induction were, I may repeat, taken without selection ;—in living individuals, I took the measurements of the first who presented themselves, and with the several crania adopted the same plan ; nor have I in a single instance rejected the measurement of a person or cranium, because it did not appear to accord with anti-Phrenological evidence. I have always supposed, and am confirmed in the opinion, that practical Phrenology is dependent entirely on accidental contingencies ; and when it is considered that we are referred to thirty-five cranial prominences, which are the common conditions of every head, and to as many faculties which are the common attributes of every mind, it may easily be understood, why the alleged characteristic configurations will *occasionally* correspond with the manifestations attributed to them, and why

* Phrenological Transactions, p. 323.

as frequently a diametrically opposite relation will be found to exist.*

It remains for me only to state, that I have taken every care to ensure the accuracy of my measurements, which have always been taken in the presence of impartial persons, many of whom will testify, that so completely has this investigation been conducted on experimental principles, that I did not, and could not, until the whole had been concluded, anticipate the result of my induction. Among other gentlemen, I have in particular to thank Mr Deseret, who is a professed Phrenologist, and a member of the Phrenological Society of Edinburgh, for having occasionally superintended my measurements. Also Mr Holroyd, my fellow-President in this Institution, who has very frequently acted as an impartial umpire on such occasions.

These gentlemen will, I believe, bear testimony to the general accuracy of my measurements;† and should

* The whole doctrine of Phrenological chances is ably stated by Dr Milligan, in the *Appendix* to his translation of Majendie's Physiology.

† The communications I have received on this subject, I think it proper, with the consent of the writers, to subjoin.

“MY DEAR SIR,

“I have much pleasure in authorizing you to state, that those measurements which I have seen you take, have always appeared to me to have been taken accurately. I re-measured, as you are aware, the heads of a number of thieves in the Edinburgh Jail and Bridewell, which you had previously taken, and found that your measurements so far corresponded with mine, that I can have no hesitation in acknowledging my reliance on the ge-

any person, resuming the same experiments, find any difference in his measurement and my report, the variation is to be attributed rather to the inadequate means which Phrenologists have given us of ascertaining any definite knowledge of their *soi-disant Science*, than to any desire on my part either to "extenuate aught, or set down aught in malice."

Formerly it was maintained, that the production of a single anti-Phrenological fact would be sufficient to overturn the whole theory; but I am satisfied that, if Phrenologists would only, as Dr Spurzheim terms it, "*go into nature*;"—if they would have recourse to an *unselected* series of measurements, or manipulations, they would at once discover that their system is no more than the "baseless fabric of a vision," and as false as any other superstition that

neral correctness of your measurements, although, as a Phrenologist, *I do not agree with your deductions, for reasons which, within the limits of a note, I cannot state.*

"It is also due to you to state, that I regret, from the nature of my professional engagements, I have not been able to witness *all* your measurements, which you have *frequently* invited me to superintend. I remain, yours truly,

"*Edin. April 17, 1829.*"

PHINEAS DESERET.

"DEAR SIR,

"I have much pleasure in stating, that during the time I attended the measurements which you have taken, I can vouch for their correctness, whatever may be the deduction that may be drawn from your investigation. Some of your measurements I myself repeated, and found them correspond with your report. I am, truly yours,

"A. T. HOLBOYD.

"*Edinburgh, April 16, 1829.*"

has ever been imposed on the ignorance and credulity of mankind.

The Public is aware of the fair pretensions which the Phrenologists have invariably held forth ; yet, what has been the line of policy they have adopted ? They have pretended to establish a system of philosophy founded exclusively on facts, and yet have never had recourse to any fair, or candid *experimentum crucis* by which the truth or falsehood of their primary propositions might be determined ;—they have adduced only *ex parte* evidence, and this, on their own showing, is of the most unsatisfactory kind, inasmuch as they have never established any standard by which the proportions of the alleged organs can be determined ;—they have termed their organs, “ *moderate,*” “ *full,*” “ *large,*” “ *rather large,*” &c., and these terms, to the present day, have been used, without any rule or definite principle by which the application of them can be regulated ;—they, with an inconsistency, and yet a gravity, worthy of Hudibras in his metaphysical disquisitions, persist in seriously maintaining a science of *proportions* without a *scale of measurement* ;—they wander over the country, preaching their doctrines *ex cathedra*, as though they had really a foundation in truth ; whilst it is a notorious fact, of which they themselves must be aware, that there is not an eminent man of science in Europe who has become a convert to them ;—they profess to maintain, at all times, the principles of free and manly discussion ; and for this purpose have founded a society in this city, for the admission of believers, and do not allow

any stranger, who may visit it, to express an opinion ; —they profess that their doctrines are as well established, and as palpable to every enquirer, as the most demonstrable truths in nature, yet do not agree among themselves on the most preliminary points ;—Dr Gall ridiculed the bumps of Dr Spurzheim, Dr Spurzheim rejects, with disdain, the callipers of Mr Combe ; and Mr Combe has been lately engaged in an open Phrenological warfare with one of the most intelligent of his contemporaries, on the subject of what is even the necessary result or tendency of their faith ;* —they give an organ one function to-day, another to-morrow ;—they maintain that a large organ of Veneration is, at one time, the characteristic configuration of the head of a saint—at another, equally essential to that of the most notorious and professed infidel !† Lastly, come the interminable combinations of their imaginary organs ; and thus the Phrenologists shift from argument to argument, from position to position, resembling the ghosts in Virgil's *Inferno* :

Huc illuc volitant, nec certa in sede morantur.

* See the controversy between Messrs Combe and Scott.

† See the report of the development of *Voltaire*, *Phrenological Journal*, vol. iii. p. 571.

TABLES OF MEASUREMENTS.

F

TABLE I.—MEASUREMENTS OF

References to the Crania.	Destructiveness to Destructiveness.	Secretiveness to Secretiveness.	Acquisitiveness to Acquisitiveness.	Combattiveness to Combattiveness.	Meatus to Benevolence.	Meatus to Conscientiousness.
II.	5.8	6	5.125	5.5	5.25	4.8
IV.	5.8	6.1	5.5	5.5	5.125	4.6
V.	6	6	5.2	5.2	5	4.7
VI.	5.7	5.6	5	5.3	4.8	4.6
VII.	5.6	5.6	4.7	5.2	4.9	4.7
VIII.	5.4	5.3	4.4	4.75	4.6	4.2
IX.	5.8	5.8	5	5	5	4.3
X.	5.5	5.7	5	5.3	5	4.5
XII.	5.5	5.375	4.7	4.7	4.8	4.2
XIII.	5.6	5.7	5	4.8	4.8	4.2
XIV.	5.6	5.6	5	4.8	5.1	4.5
XVI.	5.5	5.375	5.1	4.8	5	4.6
XVII.	5.6	5.6	4.6	5	4.8	4.1
XXI.	5.9	6	5.7	5.3	5.4	4.1
XXII.	5.25	5.3	4.7	4.8	4.8	4.5
XXIII.	5.4	5.5	4.6	4.8	5.25	4.4
XXV.	5.8	5.9	5.3	5.1	5.3	4.5
XXVI.	5.5	5.4	4.5	4.8	4.7	4.1
XXVII.	5.7	5.8	5.4	5.3	5.1	4.6
XXVIII.	5.5	5.5	4.9	5.3	5.1	4.8
XXIX.	5.8	5.8	4.9	5.2	5	4.3
XXX.	5.25	5.3	4.6	4.6	5.3	4.6
XXXIII.	5.6	5.6	4.9	5.1	5	4.3
XXXIV.	5.5	5.5	4.6	5.1	5.1	4.6
XXXV.	5.5	5.5	4.9	5	4.9	4.4
XXXVI.	5.7	5.9	4.9	5	5.3	4.9
XXXVII.	5.7	5.9	5.1	5.1	5.1	4.2
XXXIX.	5.5	5.5	4.7	4.9	4.9	4.45
XLI.	5.6	5.6	5	5	5.1	4.6
XLII.	5.6	5.6	5	5	5.2	4.7
XLIII.	5.8	5.7	5.1	5	4.9	4.6
XLIV.	5.7	5.9	5.1	5.1	5.1	4.6
XLV.	5.9	5.8	5.2	5.1	5	4.1
XLVII.	5.5	5.5	4.7	5	4.8	4.5
XLVIII.	5.4	5.4	4.9	5.3	5.1	4.35
XLIX.	5.1	5	4.5	4.7	4.7	4.5
L.	5.8	5.9	5.15	5	5.1	4.4
Total . . .	207.40	208.55	182.675	186.45	185.425	165.10
Average .	5.6	5.636	4.937	5.039	5.011	4.462

ADULT MALE CRANIA.

Meatus to Causality.	Meatus to lower Individuality.	Meatus to Philoprogenitiveness.	Weight of the Encephalon.	Proportion of Destructiveness to the Encephalon.	Proportion of Benevolence to the Encephalon.	Proportion of Conscientiousness to the Encephalon.
4.4	4.45	4.7	23069	1: 3977.413	1: 4394.095	1: 4806.041
4.4	4.4	4.2	22005	1: 3793.965	1: 4293.658	1: 4783.695
4.5	4.5	4.15	21011	1: 3501.833	1: 4202.200	1: 4470.425
4.5	4.3	4.6	19772	1: 3468.771	1: 4119.166	1: 4298.260
4.1	4.3	4.6	21077	1: 3763.750	1: 4301.428	1: 4484.468
3.9	4	3.9	16632	1: 3080.000	1: 3615.652	1: 3960.000
4.2	4.3	4.4	19296	1: 3326.896	1: 3859.200	1: 4487.441
4.1	4.3	4.3	19543	1: 3428.596	1: 3908.600	1: 4342.888
4.2	4.2	4.1	15893	1: 2889.636	1: 3311.041	1: 3784.047
4.15	4.1	4.4	20571	1: 3494.821	1: 4285.625	1: 4897.857
4.6	4.7	4.5	21412	1: 3823.571	1: 4198.431	1: 4758.222
4.1	4.2	4.3	21406	1: 3892.000	1: 4281.200	1: 4653.478
4	4.3	4.4	20871	1: 3726.980	1: 4348.125	1: 5090.487
4.6	4.6	4.2	21923	1: 3715.762	1: 4059.814	1: 5347.073
4.4	4.2	3.8	17633	1: 3358.666	1: 3673.541	1: 3918.444
4.3	3.9	4.6	<i>broken</i>			
4.6	4.5	4.4	22693	1: 3912.586	1: 4281.698	1: 5042.888
4.1	4.1	4	17209	1: 3128.909	1: 3661.489	1: 4197.317
4.2	4.5	4.4	20865	1: 3660.526	1: 4091.176	1: 4535.869
4.3	4.8	4.9	23581	1: 4287.454	1: 4623.725	1: 4912.708
4.2	4.3	4.5	20371	1: 3512.241	1: 4074.200	1: 4737.441
4.5	4.2	4.2	18608	1: 3544.380	1: 3510.943	1: 4045.217
4.9	4.9	4.5	<i>broken</i>			
4.4	4.3	4.1	<i>broken</i>			
4.3	4.4	4.7	19290	1: 3507.272	1: 3936.734	1: 4384.090
4.5	4.7	4.3	20906	1: 3667.719	1: 3944.528	1: 4266.530
4.1	4.3	4	22005	1: 3860.526	1: 4314.705	1: 5239.285
4.2	4.1	4	17232	1: 3133.090	1: 3516.734	1: 3872.359
4.2	4.5	4.2	20065	1: 3583.035	1: 3934.313	1: 4361.956
4.3	4.5	4.35	20941	1: 3739.464	1: 4027.115	1: 4455.531
4.3	4.55	4.95	23487	1: 4049.482	1: 4793.265	1: 5105.869
4.4	4.4	4.7	25109	1: 4405.087	1: 4923.333	1: 5458.478
4.2	4.5	4.3	22005	1: 3729.661	1: 4401.200	1: 5367.073
4.15	4.5	4.5	19866	1: 3612.000	1: 4138.750	1: 4414.666
4.9	4.7	4.6	20524	1: 3800.740	1: 4024.313	1: 4718.160
3.9	4	4.3	18467	1: 3620.980	1: 3929.148	1: 4003.777
4.4	4.6	3.35	20689	1: 3567.068	1: 4056.666	1: 4702.045
159.50	162.10	160.40	696027	123,564.880	139,035.811	155,904.085
4.31	4.381	4.335	20471	3634.261	4089.288	4585.414

TABLE II.—MEASUREMENTS OF THE HEADS

	Destruc- tiveness to Destruc- tiveness.	Acquisi- tiveness to Acquisi- tiveness.	Ear to Be- nevolence.	Ear to Con- scientious- ness.	Ear to Lower Individual- ity.
William Hodgson,	5.9	5.1	4.9	4.5	4.6
William Nash,	5.95	5.6	5.7	5.7	4.9
Henry Nicholls,	6.1	5.9	5.9	5.6	4.8
John Northover,	5.6	5.4	5.6	4.85	4.8
John Charles,	5.85	5.3	5.8	5.2	4.9
John Warren,	5.7	5.5	5.7	4.4	4.8
Charles Harford,	6.1	5.8	5.3	4.6	4.8
George Brindley,	5.95	5.8	5.4	4.6	4.9
Thomas Hill,	5.8	5.4	5.3	4.6	4.8
Charles Christison,	5.9	5.6	5.9	4.9	5.1
Henry Walker,	5.7	5.5	5.25	4.8	4.7
Joseph Hall,	6.1	5.8	5.25	4.5	5
George Cumberlidge,	5.95	5.4	5.1	4.5	4.8
John Smith,	6.	5.6	5.5	5.3	4.8
Richard Pilley,	6.2	5.8	5.6	4.6	4.6
William Read,	6	5.25	5.9	5.5	4.9
Thomas Clerk,	5.9	5.4	5.1	4.5	4.8
Nicholas Ruddock,	6.2	5.7	5.6	5	4.2
George Dickson,	5.95	5.8	5.4	4.9	4.9
James Dyson,	6.05	5.9	5.65	4.9	5.3
John Martin,	5.7	5.3	5.65	5.2	5.4
Charles Betts,	5.85	5.3	5.7	4.9	4.7
Richard Wright,	6.2	5.7	5.7	5.1	4.5
Samuel Clerk,	5.85	5.25	5.05	4.75	4.65
Edward Crick,	5.95	5.45	5.7	4.85	5
William Stanley,	6.05	5.7	5.5	4.7	4.8
Thomas Pearson,	6.25	5.75	5.65	5.2	5.05
Adam Lauder,	5.95	5.4	5.4	4.7	5.1
Total,	166.70	155.40	154.20	136.85	135.60
Average,	5.953	5.55	5.507	4.887	4.842

OF LIVING PERSONS.—ENGLISHMEN.

Ear to Philoprogenitiveness.	Size of the Head.	Proportion of Destructiveness to the size of the Head.	Proportion of Benevolence to the size of the Head.	Proportion of Conscientiousness to the size of the Head.	Proportion of Acquisitiveness to the size of the Head.
3.95	12.6	1 : 2.135	1 : 2.571	1 : 2.8	1 : 2.470
5.1	13.65	1 : 2.294	1 : 2.394	1 : 2.394	1 : 2.437
4.8	13.3	1 : 2.180	1 : 2.254	1 : 2.394	1 : 2.254
5.05	13.3	1 : 2.375	1 : 2.375	1 : 2.742	1 : 2.462
4.9	13.2	1 : 2.256	1 : 2.275	1 : 2.538	1 : 2.490
4.35	12.9	1 : 2.263	1 : 2.263	1 : 2.931	1 : 2.345
4.9	13.5	1 : 2.213	1 : 2.547	1 : 2.934	1 : 2.327
4.9	13.4	1 : 2.252	1 : 2.481	1 : 2.913	1 : 2.310
5	13.7	1 : 2.362	1 : 2.584	1 : 2.978	1 : 2.537
4.8	13.7	1 : 2.322	1 : 2.322	1 : 2.795	1 : 2.446
4.7	12.9	1 : 2.263	1 : 2.457	1 : 2.687	1 : 2.345
4.3	13.3	1 : 2.180	1 : 2.533	1 : 2.955	1 : 2.293
4.8	13.35	1 : 2.243	1 : 2.617	1 : 2.966	1 : 2.472
4.65	13.4	1 : 2.233	1 : 2.436	1 : 2.528	1 : 2.392
4.6	13.8	1 : 2.225	1 : 2.464	1 : 3	1 : 2.206
4.5	13.7	1 : 2.283	1 : 2.322	1 : 2.490	1 : 2.609
4.7	13.7	1 : 2.322	1 : 2.686	1 : 3.044	1 : 2.537
5.1	14	1 : 2.258	1 : 2.5	1 : 2.8	1 : 2.456
4.9	13.6	1 : 2.285	1 : 2.518	1 : 2.775	1 : 2.344
4.9	14.25	1 : 2.355	1 : 2.522	1 : 2.908	1 : 2.415
5.4	13.8	1 : 2.421	1 : 2.442	1 : 2.653	1 : 2.603
4.5	13.45	1 : 2.299	1 : 2.359	1 : 2.744	1 : 2.537
4.85	14.1	1 : 2.274	1 : 2.473	1 : 2.764	1 : 2.473
4.6	13.65	1 : 2.533	1 : 2.702	1 : 2.875	1 : 2.6
4.8	14	1 : 2.352	1 : 2.456	1 : 2.886	1 : 2.568
4.85	13.6	1 : 2.247	1 : 2.472	1 : 2.893	1 : 2.385
4.95	14.	1 : 2.222	1 : 2.477	1 : 2.692	1 : 2.434
4.9	13.75	1 : 2.268	1 : 2.5	1 : 2.925	1 : 2.5
133.75	379.60	63.915	69.002	78.004	68.247
4.776	13.557	2.282	2.464	2.785	2.437

TABLE III.—MEASUREMENTS OF THE HEADS

	Destructive- ness to Destructive- ness.	Acquisitive- ness to Acquisitive- ness.	Ear to Benevo- lence.	Ear to Conscien- tiousness.	Ear to Lower Individual- ity.
James Jamieson,	5.8	5.6	5.7	4.6	4.9
John Weighton,	6.1	5.8	5.65	4.5	5.3
Daniel Maciver,	6	5.7	5.8	5.4	5.3
William Western,	5.9	5.2	5.6	4.8	5.4
William Burness,	5.95	6	5.8	5	5.1
John Brown,	6.1	6	6	4.9	5.3
James Stewart,	6.2	6.05	5.7	4.8	4.7
Duncan Lamont,	6	5.8	5.9	4.6	4.8
Neil Lamont,	5.75	5.5	5.4	4.5	4.7
Alex. Macgregor,	6.2	5.6	5.8	5.6	5.2
Robert Clephane,	5.95	5.2	5.6	4.6	5.2
William Macfarlane,	5.6	5.4	5.3	4.5	4.8
James Walker,	5.95	5.7	5.7	4.6	5
Alexander Don,	6.15	5.4	5.5	5.3	5.1
Hugh Bone,	5.95	5.5	5.5	4.5	4.9
Macnaughten Syme,	5.7	5.6	5.65	5	4.35
John Burn,	5.95	5.6	5.6	4.9	4.9
John Newbigging,	6.2	5.7	5.8	5.2	4.9
John Aitkin,	6	5.8	5.3	4.8	4.9
Robert Swanstoun,	6	5.8	5.2	4.7	4.9
James Hill,	5.95	5.6	5.3	4.6	4.3
William Allen,	6	5.5	5.7	5	4.9
James Browne,	6.05	5.65	5.4	4.75	4.6
Robert Young,	5.8	5.3	5.5	4.6	4.4
Thomas Stiles,	6	5.5	5.7	5	5
Total,	149.25	140.50	140.10	120.75	122.85
Average,	5.97	5.62	5.6	4.83	4.914

OF LIVING PERSONS —SCOTCHMEN.

Ear to Philoprogen- itiveness.	Size of the Head.	Proportion of Destructiveness to the Size of the Head.	Proportion of Acquisitiveness to the Size of the Head.	Proportion of Benevolence to the Size of the Head.	Proportion of Conscientious- ness to the Size of the Head.
4.3	13.4	1 : 2.310	1 : 2.394	1 : 2.350	1 : 2.913
4.4	13.8	1 : 2.262	1 : 2.379	1 : 2.442	1 : 3.066
4.8	13.8	1 : 2.3	1 : 2.421	1 : 2.379	1 : 2.555
4.55	13.7	1 : 2.322	1 : 2.634	1 : 2.446	1 : 2.854
4.6	13.65	1 : 2.294	1 : 2.275	1 : 2.353	1 : 2.73
4.8	14.05	1 : 2.303	1 : 2.341	1 : 2.341	1 : 2.867
5	13.4	1 : 2.161	1 : 2.214	1 : 2.350	1 : 2.791
4.9	14	1 : 2.333	1 : 2.413	1 : 2.372	1 : 3.043
4.7	13.55	1 : 2.356	1 : 2.296	1 : 2.509	1 : 3.455
4.65	14.1	1 : 2.274	1 : 2.517	1 : 2.431	1 : 2.517
5	13.9	1 : 2.336	1 : 2.673	1 : 2.482	1 : 3.021
4.45	12.9	1 : 2.303	1 : 2.388	1 : 2.437	1 : 2.866
4.6	13.55	1 : 2.277	1 : 2.377	1 : 2.377	1 : 2.945
5.1	13.85	1 : 2.252	1 : 2.564	1 : 2.518	1 : 2.613
4.35	13.35	1 : 2.243	1 : 2.427	1 : 2.427	1 : 2.966
4.55	13.6	1 : 2.385	1 : 2.428	1 : 2.407	1 : 2.72
4.9	13.55	1 : 2.277	1 : 2.419	1 : 2.419	1 : 2.765
5.1	13.6	1 : 2.193	1 : 2.385	1 : 2.344	1 : 2.615
4.8	13.9	1 : 2.166	1 : 2.224	1 : 2.622	1 : 2.891
4.9	13.9	1 : 2.166	1 : 2.224	1 : 2.673	1 : 2.957
4.8	13.85	1 : 2.310	1 : 2.473	1 : 2.613	1 : 3.010
4.85	13.9	1 : 2.315	1 : 2.527	1 : 2.438	1 : 2.78
4.8	13.85	1 : 2.289	1 : 2.451	1 : 2.564	1 : 2.916
5	13.4	1 : 2.310	1 : 2.528	1 : 2.436	1 : 2.913
4.8	13.8	1 : 2.166	1 : 2.509	1 : 2.421	1 : 2.76
118.70	342.35	56.903	60.481	61.151	71.529
4.748	13.694	2.276	2.419	2.446	2.861

TABLE IV.—MEASUREMENT OF THE HEADS

	Destructiveness to Destructiveness.	Acquisitiveness to Acquisitiveness.	Ear to Benevolence.	Ear to Conscientiousness.	Ear to Lower Individuality.
John Walls,	5.9	5.7	5.4	4.5	4.5
William Burnside,	6	5.6	5.2	4.8	4.9
Robert Burnside,	5.75	5.6	5.6	4.6	5.3
James Moffat,	5.85	5.5	5.4	4.65	4.7
Fergus Solan,	5.8	5.4	5.5	4.8	5
Michael Power,	5.8	5.55	5.6	4.9	4.65
William Yarwood,	6.1	5.4	5.4	4.55	4.8
Bryan Lynch,	6	5.7	6	5.4	4.9
John Glennon,	5.9	5.1	5.5	4.7	5.05
Shady Malkare,	6.25	5.9	5.35	4.6	4.9
John Fanagan,	6	5.5	5.4	4.7	5.2
John Glaigherty,	6	5.6	6	4.6	4.9
John Francis,	5.7	5.1	5.2	4.7	4.9
Patrick Bremer,	5.85	5.6	5.6	5.1	4.7
David Fleming,	5.9	5.55	5.4	4.6	4.8
Hugh McIntyre,	5.6	5.3	5.6	4.6	4.9
Den Donovan,	5.9	5.5	5.25	4.6	4.7
John Citter,	6.15	5.85	5.35	4.8	4.6
Thomas Cornigen,	5.7	5.3	5.45	4.6	4.7
Andrew Philson,	6.3	6	5.7	4.7	4.9
William Steward,	6.2	5.8	6	5.1	5.1
Charles Macgrevy,	6	5.35	5.3	4.6	4.7
Charles Stewart,	6.15	5.7	5.4	5	4.5
Barney Macgehghey,	5.25	5.25	5.3	4.8	4.65
William Euston,	5.7	5.35	5.4	4.75	4.6
Thomas Read,	5.7	5.4	5.7	5	4.9
Alexander Kellie,	6.05	5.55	5.55	4.85	5.2
Total,	159.50	149.15	148.55	128.60	130.65
Average,	5.907	5.524	5.501	4.762	4.836

OF LIVING PERSONS.—IRISHMEN.

Ear to Philoprogeni- tiveness.	Size of the Head.	Proportion of Destructiveness to the size of the Head.	Proportion of Acquisitiveness to the size of the Head.	Proportion of Benevolence to the size of the Head.	Proportion of Conscientious- ness to the size of the Head.
4.1	13.3	1:2.254	1:2.333	1:2.5	1:2.955
4.5	13.6	1:2.266	1:2.428	1:2.615	1:2.833
4.35	13.55	1:2.356	1:2.419	1:2.419	1:2.945
5	13.7	1:2.341	1:2.490	1:2.537	1:2.946
4.8	13.9	1:2.396	1:2.574	1:2.527	1:2.895
4.7	13.6	1:2.344	1:2.450	1:2.428	1:2.775
4.9	13.9	1:2.278	1:2.574	1:2.574	1:3.054
4.75	13.8	1:2.3	1:2.421	1:2.3	1:2.555
4	13.9	1:2.355	1:2.725	1:2.527	1:2.957
4.6	13.95	1:2.232	1:2.364	1:2.607	1:3.033
4.6	13.6	1:2.266	1:2.472	1:2.518	1:2.893
5.2	13.7	1:2.283	1:2.446	1:2.283	1:2.978
4.75	14	1:2.456	1:2.745	1:2.692	1:2.978
5.2	13.9	1:2.341	1:2.482	1:2.462	1:2.725
4.8	13.5	1:2.288	1:2.432	1:2.5	1:2.934
4.9	13.1	1:2.339	1:2.471	1:2.339	1:2.847
4.2	13.	1:2.203	1:2.363	1:2.476	1:2.826
4.65	13.95	1:2.268	1:2.384	1:2.607	1:2.906
4.6	13.05	1:2.289	1:2.462	1:2.394	1:2.836
4.9	14.	1:2.222	1:2.333	1:2.456	1:2.978
5.4	14.3	1:2.306	1:2.465	1:2.383	1:2.803
5.1	13.1	1:2.183	1:2.448	1:2.471	1:2.847
4.9	13.3	1:2.162	1:2.333	1:2.462	1:2.66
4.75	13.4	1:2.552	1:2.552	1:2.528	1:2.791
4.75	13.5	1:2.368	1:2.523	1:2.5	1:2.844
4.75	13.5	1:2.368	1:2.5	1:2.368	1:2.7
4.75	13.95	1:2.305	1:2.513	1:2.513	1:2.880
127.90	368.05	62.321	66.702	67.006	77.374
4.737	13.631	2.308	2.470	2.481	2.865

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**TABLE V.—MEASUREMENTS OF THE
EDINBURGH JAIL**

	Acquisitive- ness to Acquisitive- ness.	Destructive- ness to Destructive- ness.	Ear to Bene- volence.	Ear to Con- scientious- ness.
John Smith,	5.9	6	5.8	4.7
P. Macdonald,	5.55	6	5.45	4.65
Donald Ross,	5.55	5.6	5.9	4.8
David Stewart,	5.4	5.75	5.4	5
John Cantley,	5.5	5.55	5	5
William Lindsay,	5.5	5.8	5.85	5.2
John Macartney,	5.4	5.6	5.5	4.8
John Clerk,	5.3	5.65	5.05	4.8
John Ross,	5.9	6	5.3	4.5
Robert Brown,	5.3	5.7	5.75	4.55
S. Forbes,	5.7	5.9	5.3	5
John Watson,	5.7	5.95	5.5	5.25
James Noble,	5.4	5.75	5.45	4.8
William Percy,	5.8	6.2	5.3	4.7
F. M'Nally,	5.8	5.95	5.6	4.7
George Henderson,	5.6	5.8	5.4	4.7
Alexander Laurie,	5.5	5.7	5.5	4.7
Duncan M'Gregor,	5.4	5.8	5.3	4.6
Edward Cornel,	4.9	5.25	5.2	4.5
Robert Ferguson,	5.7	5.8	5.6	4.9
James Robertson,	5.35	5.7	5.85	4.8
John Bell,	5.4	5.4	5.2	5.1
Total,	121.55	126.85	120.20	105.75
Average,	5.525	5.765	5.463	4.806

HEADS OF THIEVES CONFINED IN THE AND BRIDEWELL.

Ear to Lower Individua- lity.	Ear to Philo- progenitive- ness.	Size of the head.	Proportion of Acquisitiveness to the size of the Head.	Proportion of Conscientious- ness to the size of the Head.
4.9	5	13.8	1 : 2.338	1 : 2.936
4.5	4.5	13.9	1 : 2.504	1 : 2.989
4.75	4.6	13.6	1 : 2.450	1 : 2.833
4.65	4.65	12.4	1 : 2.296	1 : 2.480
4.3	4.6	13.05	1 : 2.372	1 : 2.610
4.8	4.9	12.3	1 : 2.236	1 : 2.365
4.65	4.65	13.65	1 : 2.527	1 : 2.843
4.35	4.35	13.15	1 : 2.481	1 : 2.739
4.7	4.5	13.5	1 : 2.288	1 : 3.000
4.45	4.55	13.25	1 : 2.500	1 : 2.912
4.5	4.5	13.4	1 : 2.350	1 : 2.680
4.7	5	13.9	1 : 2.438	1 : 2.647
4.5	5.1	13.7	1 : 2.537	1 : 2.854
4.5	4.9	13.8	1 : 2.379	1 : 2.936
4.7	4.3	13.8	1 : 2.379	1 : 2.936
4.5	5.1	13.45	1 : 2.401	1 : 2.861
4.6	4.5	13.1	1 : 2.381	1 : 2.787
4.55	4.6	13.3	1 : 2.462	1 : 2.891
4.6	4.65	12.9	1 : 2.632	1 : 2.866
4.7	4.8	13.7	1 : 2.403	1 : 2.795
4.75	4.6	13.4	1 : 2.504	1 : 2.791
4.6	4.7	13.1	1 : 2.425	1 : 2.568
101.25	103.05	294.15	53.283	61.319
4.602	4.684	13.370	2.421	2.787

TABLE VI.—MEASUREMENTS

	Destructive- ness to Destructive- ness.	Secretive- ness to Secretive- ness.	Acquisitive- ness to Acquisitive- ness.	Combative- ness to Combative- ness.	Mentus to Benevo- lence.
Burke,	5.35	5.4	4.8	5	5.1
Haggart,	5.2	5.45	4.6	5.1	5.15
Scott,	5.3	5.3	4.85	4.75	4.8
Anderson,	5.2	5.35	4.7	4.75	5.05
Glen,	5.4	5.55	4.65	4.85	5.05
Balfour,	5.45	5.6	4.95	4.8	5.2
Gordon,	5.3	5.5	4.6	4.8	5
Cockburn,	5.4	5.6	4.8	5	5.2
Lingard,	4.95	4.9	4.4	4.8	4.75
Pepe,	4.8	5.05	4.5	4.45	4.95
Macmillan,	5.3	5.4	4.8	5.1	5.2
Mortimur Collins,	5.35	5.6	5	4.95	5.25
Clydesdale,	5.2	5.25	4.7	4.7	5.2
M'Kean,	5.4	5.2	4.9	4.9	5.1
Buchanan,	5.3	5.2	4.75	4.6	5.1
Kerr,	5.5	5.6	5.2	4.8	5.4
Divan,	5	5.1	4.6	4.9	5.2
Total,	89.40	91.05	80.80	82.25	86.70
Average,	5.55	5.35	4.75	4.83	5.1

OF THE CRANIA OF MURDERERS.

Meatus to Conscientiousness.	Meatus to Causality.	Meatus to lower Individuality.	Weight of the Encephalon.	Proportion of Destructiveness to the Encephalon.	Proportion of Benevolence to the Encephalon.	Proportion of Conscientiousness to the Encephalon.
4.6	4.6	4.5	20507	1 : 3833.084	1 : 4020.980	1 : 4458.048
4.4	4.45	4.45	22177	1 : 4264.807	1 : 4306.213	1 : 5040.227
3.7	4.2	4.45	18796	1 : 3546.415	1 : 3915.833	1 : 5080.000
4.5	4.3	4.55	20507	1 : 3943.653	1 : 4060.792	1 : 4557.111
4.2	4.45	4.6	21953	1 : 4065.370	1 : 4347.128	1 : 5226.904
4.85	4.5	4.7	21406	1 : 3927.706	1 : 4116.538	1 : 4920.919
4.4	4.4	4.5	19801	1 : 3736.037	1 : 3960.200	1 : 4500.227
4.2	4.5	4.6	19760	1 : 3659.259	1 : 3800.000	1 : 4704.761
4.15	4.1	4.15	16274	1 : 3287.676	1 : 3425.263	1 : 3425.263
4.2	4.5	4.7	19429	1 : 4047.708	1 : 3925.050	1 : 4625.952
4.6	4.45	4.4	19589	1 : 3696.037	1 : 3767.115	1 : 4258.478
4.6	4.6	4.8	24121	1 : 4508.598	1 : 4594.476	1 : 5243.695
4.75	4.4	4.15	21934	1 : 4218.076	1 : 4218.076	1 : 4617.684
4.4	4.4	4.4	19995	1 : 3702.777	1 : 3920.588	1 : 4544.318
4.4	4.4	4.4	<i>broken</i>			
4.9	4.6	4.6	<i>an arterial preparation.</i>			
4.5	4.2	4.2	22840	1 : 4568.000	1 : 4392.307	1 : 5075.555
74.85	75.05	76.15	309089	59005.203	60765.559	70279.137
4.4	4.41	4.47	20605	3933.680	4051.087	4685.275

REFERENCES
TO THE
TABLES OF MEASUREMENTS.

TABLE I.

THE reader is, in this Table, presented with the measurements of all the certain male crania in the Collection which Dr Spurzheim sent from Paris to this city, and which are at present in the Edinburgh Museum. These crania were sent over to this country for the purpose of illustrating the truth of Phrenology. The same evidence, therefore, may fairly be admitted in exposing its delusions.

TABLE II.

This Table presents the measurements of the heads of *Englishmen*. The first *ten* are privates in the Third Dragoon Guards, quartered at Piershill barracks; and the following *eighteen*, gunners in the Royal Artillery at Leith Fort.

TABLE III.

In this Table, measurements of the heads of *Scotchmen* are presented. The first *seven* are porters, taken without any selection from the stand in Adam Square; the *three* next from the stand in Castle

Street; the *ten* following are privates in the Third Dragoon Guards; and the remaining *five*, gunners in the Royal Artillery.

TABLE IV.

In this Table, the measurements of the heads of *Irishmen* are presented. The first *three* are porters from the stand in College Street; the following *eleven*, privates in the Third Dragoon Guards; and the remaining *thirteen*, gunners in the Royal Artillery.

TABLE V.

In this Table, measurements are presented of the heads of the most notorious thieves at present confined in the Jail and Bridewell of Edinburgh. One is an *Englishman*, another an *Irishman*, and the remaining 20 are *Scotchmen*.

TABLE VI.

In this Table the reader is presented with measurements of the crania of executed murderers. The skulls of Burke, Haggart, Scott, Anderson, Glen, Cockburn, and Pepe, are in the Edinburgh Anatomical Museum. That of Lingard is in the Museum of the Royal Physical Society. The skulls of Macmillan, Collins, Clydesdale, M'Kean, Buchanan, Kerr, and Divan, are in the Anatomical Museum in the University of Glasgow.

FINIS.

2.

THE
EVIDENCES AGAINST THE SYSTEM
OF
PHRENOLOGY,

BEING THE SUBSTANCE OF A PAPER READ AT AN EXTRAORDINARY
MEETING OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH.

By THOMAS STONE, Esq.

"Now, mark how a plain tale shall put you down."

SHAKESPEARE.

EDINBURGH:
MACLACHLAN & STEWART, AND CHARLES SMITH;
T. & G. UNDERWOOD, LONDON;
AND ROBERTSON & ATKINSON, GLASGOW.

1828.

E. M. 17.

THE EVIDENCES
AGAINST THE
SYSTEM OF PHRENOLOGY.

DRS GALL and SPURZHEIM claim the merit of being the discoverers of what they consider a new theory of philosophy, which teaches,—

First, That the brain is a congeries of so many distinct parts, each of which is the organ of some innate special faculty :

Secondly, That the power of manifesting each faculty is always proportionate to the size and activity of that organ, or part of the brain, with which it is supposed to be in immediate connection :

Thirdly, That it is possible to ascertain, during life, the relative sizes of these organs, by the corresponding protuberances or enlargements on the external surface of the cranium.

In the present paper, I purpose shewing that these several propositions are untenable, and directly controverted by the evidence of observation, and the testimony of recorded facts. I shall, however, first prove, that, so far

from the teachers of this system being entitled to any praise for the originality of their views, they have only been reviving and promulgating doctrines that were taught in the earlier ages, and which, having been rejected by the most enlightened of those times, fell into that oblivion, from whence, within the last thirty years, they have been rescued, without the slightest reference or acknowledgment.

Aristotle first assigned different operations of the mind to different parts of the brain.* He also speaks of the faculties being indicated by certain forms and projections of the skull, which passage has been quoted with reprobation by Pliny,† who seems to wonder why Trogius Pompeius, his predecessor, “a most accurate writer,” should have copied from Aristotle such “frivolous remarks.” The objection of Pliny was that of a philosopher, and rested on their induction being founded on the observation of a single part, instead of the whole system.‡ He names the science “*Metoposcopy* ;”§ and adds the curious fact of its having been applied, almost as we see it in modern times, to the portraits painted by Apelles. Suetonius, under the same appellation, mentions a report, that it had been applied to the heads of Britannicus and Titus Vespasian, when schoolfellows together in the palace of the Emperor Claudius.|| It is, however, important to observe, that the ancients always considered *Metoposcopy*, or *Phrenology*, as it then existed, a *vulgar* superstition. The Cra-

* *De Anima.*

† *Nat. Hist. lib. xi. cap. 52.*

‡ *Nec universa hæc (ut arbitror) sed singula observat, frivola, (ut reor) et vulgo tamen narrata.—Ibid.*

§ *Ibid.*

|| *Tit. ad init.*

niologic diviner was never introduced by any of the royal family, not even by the jocular, good-tempered father of Titus, but by Narcissus, a manumitted slave. Juvenal expressly represents "The Science" as a superstition of the vulgar only, and satirizes the degrading extent to which the higher order of females were addicted, to the astrologic arts. "But if she be poor," (says he) "she will draw cuts with straws, or *stretch out her forehead* to the seer, who generally has a smack for his pains."* Cicero alludes to the same doctrine, when he mentions "Zopyrus the Physiognomist, who pretended to decypher the dispositions and characters of individuals from their persons, eyes, countenance, and forehead."†

In the thirteenth century, Albertus Magnus pointed out the supposed sites of the several mental faculties; and Peter de Montagnana published a plate, representing their several relative positions and sizes. Vesalius, writing in 1542, condemns such notions, as being arrogant and impious; and denominates the phrenologist of that time a "would-be Prometheus," and "a forger upon the great impress of the divinity."‡ He quotes Thomas Aquinas, Scotus, and Albertus Magnus, as the most reprehensible

* "Si mediocris erit—frontemque, manumque,

Præbebit vati crebram propysana roganti."—Juv. lib. vi. 381.

† Cic. De Fato, cap. v. Vide etiam pro Roscio, p. 53, in Calp. p. 741.—In both passages, he quotes the *manifestations* of the forehead. The *fronts* of the ancients extended to the vertex, and, therefore, comprehended the twenty principal organs of modern Phrenology.

‡ Vesalius, Anat. lib. viii. 623.

authors of these doctrines; and, informing us that they considered the third ventricle, now the posterior horn of the lateral ventricle, as the seat of memory, he very truly denies that the human cerebellum ascends above the highest insertion of the muscles in the occipital bone, or that it forms any part "of that *prominence* of it by which the vulgar calculate the powers of memory and ingenuity."* Thus we learn that they judged of the activity of these faculties by the prominence that the lobe to which they were referred communicated to the tuberosity of the occiput, by filling it from within. Here, therefore, is not only the phrenological development of the cerebral substance itself, but the indication of it by the external protuberance on the surface of the cranium. At the College of Louvain it was, in his time, publicly taught from the chair, that the anterior ventricle was not only the seat, but was usually called the ventricle of *communis sensus*; a term that comprehended the results of the five senses,—odours, colours, tastes, sounds, and tactile qualities: and it is worthy of remark, that within the curve-line that included these, the present phrenologists have referred the same faculties of colour, order, number, size, locality, tune. To the ventricle of the second lobe, "*in capitis medium repositum*," we are informed they referred the powers of imagination, reasoning, and reflection; and the organs which correspond to these now are ideality, causality, comparison, firmness, wit, hope, all of which are within or near the same boundary.†

* In occipitis prominula regio, ex cujus tubere vulgus memorie ingenique vim metitur.—*Ibid.* 629.

† Vesalius, Anat. lib. vii. 623.

Thus it appears that the modern system is no more than a revival of what we are entitled to consider the old system of Phrenology. The principal, and almost only difference of importance between the two is, that the third ventricle, instead of being sacred to memory, has been supplied by the animal propensities, "*les facultés affectives*," which were formerly altogether excluded, and that the organs have been brought out upon the surface of the brain; which, however, was an easy combination of the above opinion with that of Erasistratus,† who had maintained that the convolutions were the seat of the intellect, and most perfect in the most sagacious animals. We are farther informed by Vesalius, that the contrivance of mapping out the brain, according to the faculties then in vogue, was exhibited in the class-room of Louvain, in a plate taken from a work called "*The Pearl of Philosophy*," wherein the three ventricles were delineated; which figures he and his fellow-students diligently copied into their note-books.

Richard Saunders, in his curious work on "*Physiognomie*," treats also of Phrenology as it existed in his day; and many of his axioms will be found strictly in accordance with the fundamental propositions of the present system.—For example,—

"*Now, in our science of physiognomie, the form, proportions, and dimensions of the head are to be considered; for by it and its form we judge of the mind contained therein.*"

† Galen, lib. viii. *De Usu Partium*.

*"The brain, one of the noblest parts of the body, is according to the form of the cranium."**

"The well formed head is like a mallet or spear, there being some eminency before and behind; the form of the middle ventricle should be a little compressed, so the cogitative faculty is the more notable. If the fore part be depressed, the man is of no judgment; if the hinder, he hath no memory."†

The phrenological theorists of the present day triumphantly assert, that Drs Gall and Spurzheim were the first who, instead of founding their opinions upon speculative reasoning, drew their deductions from observation, comparing, as they proceeded, the peculiar appearances of different heads with the dispositions and talents of living individuals, and also referring to the evidence of comparative anatomy, to elucidate further the correctness of their inferences. The opinions to which we have referred were also, it appears, founded on similar comparisons, and facts as important brought forward to substantiate them. Thus,—

"The little forehead denotes a person indocile, weak, and given to mischief, believing in nothing but his own foolish opinions. They are compared among the beasts to the cat or rat of Pharaoh. The Emperor Caligula had it: so also was he an epitome of all cruelty and cowardice, and would never believe any person of authority."‡

* *Vide Vesal. lib. vii. p. 630.*

† *Saunders' Physiognomie, Chiromancie, and Metoposcopia. 1653. Bock ii. 178.*

‡ *Aspera fronte ne gaudeas, neque quæ fossas monticulove habeat: omnia namque hæc signa versutiam, et infidelitatem nunciant, et interdum stultitiam et insaniam.*

ADAMANTIUS.

“A square forehead, according to Aristotle, denotes magnanimity. Those that have such a forehead are courageous as lions; and are compared to them, because of their strength, courage, and prudence.”*

“The concave forehead which hath pits and mounts, is a sign of fearfulness, deceit, cheating, and ambition. He which hath a frowning, wrinkled, and capred † forehead, is of a saturnine humour and melancholic, and denotes one that thinks more than he speaks. Such a one was Philip Melancthon. These persons are of a gentle humour, and familiar conversation. If the person be very rich, the greater is the melancholy, as saith Albertus Magnus.‡

“A clear forehead, without wrinkles, signifies a fairness of mind, as well as of body, but a malicious disposition, given to debates, suits, and contentions. The most part that have it so, have not much devotion. The great Sidonius Apollinaris saith that Epicurus had it so.

“Those who have much carnosity about the eyes, so that their eyes hang down like those of hounds, are fraudulent, cruel, and unmerciful; deriving their cruelty from beasts

* *Quadrata frons, pro faciei ratione mediocris, magnanimos ostendit; ob similitudinem leonis.* ARIST.

† A word, according to Varro, lib. vi. 6, from *Capra*, a goat.

Quid illuc est quod illi caperat frons se veritudine? PLAUT.

‡ Albertus Magnus is quoted on all sides as being the Dr Gall of that time. Thus, on this subject, he observes,—“*Qui semper frontis rugas contractas habent, melancholici, et res magnas cogitari consueti.*” I do not, however, be it remembered, confound these *rugæ* with the *forms* and *eminences* of the cranium which were equally considered by the authors cited.

of prey. Selymus, the emperor of the Turks, had them so; and he was cruel, bold, a great, indefatigable, and severe warrior. It is said, also, that Charles Duke of Burgundy had them so too.

“A forehead that, on the first sign, appears sad, severe, and austere, shews a strange and barbarous humour, prone to all cruelties. Such are the Arabians, Cannibals, Anthropophagi, people that know no pity. If it happen they be of a melancholic humour, they are likely to devour their own children, as saith a learned author, which I have myself observed in one who was executed at Eureux. His name was Santin, living near a town called Ces Ventes, who, transported with madness and cruelty, had eaten his own children.”*

These facts are as well authenticated and as important as any of those that have been recorded in the numerous phrenological journals now before the public; and the inferences deduced from them are, in every respect, as warrantable. It is therefore very obvious, that the phrenological art of divination, or that of estimating the powers of the mind, and our different sentiments and propensities, by the appearances of the head, was practised at a very early period; nor can we exonerate the modern phrenologists from being much indebted to their predecessors, when we perceive that the greater number of the phrenological faculties occupy the same region of the brain now that they did in the time of Vesalius. Nay, we are almost inclined

* Saunders, c. vii. p. 182.

to think, that the contrivance of the various mixture of white and brown matter, and of diverging and converging fibres in the individual organs, was suggested to the moderns by the answer of Galen to the above-mentioned doctrine of Erasistratus. " Since even the ass, a creature of little sagacity, has its brain laid out into numerous folds, though, by *theory*, it should have this organ the very reverse of complicated, Erasistratus should have concluded, with more justice, that *intellect is in proportion* to the proper mixture, or *variety of structure* in the organ, whatever those may be, which produce intelligence." *

Dr Gall has expressly adopted this latter opinion, and maintains, that the faculties of animals are always multiplied in proportion as their brains are complicated,† which, in a similar manner, he endeavours to prove by an appeal to comparative anatomy. The history which the advocates of Phrenology give of what they term its *discovery*, is alone sufficient to stigmatize the system as having been founded in a very vague and unscientific manner, and clearly identifies it as being properly a branch of those studies of astrology, metoposcopy, and chiromancy, of which it originally formed a part.‡ The object of these "abstruse

* Vesal. Anat. vii. 630.

† Anat. et Phys. du Cerveau, t. iii. p. 364.

‡ These several sciences appear at one time to have been no less fashionable than Phrenology was some few years ago. Hence, Saunders observes, " The Hebrews, Chaldeans, Arabians, Indians, Greeks, Latins, and Italians, great students in, and promoters of, this high part of philosophy, (chiromancy), with no small pains, have, in their several tongues, written large

and profitable sciences," we are informed, was to interpret the characters, actions, and destinies of men, by "the symmetrical proportions of the body," or "the internal affections of natural bodies by the external signs thereof." Thus may Phrenology, under this head, be appropriately characterized as "*The art of divining certain evil propensities, noble sentiments, and ingenious powers of the mind, by divers remarkable appearances and protuberances on the external surface of the skull.*" Its history is, indeed, unparalleled in the annals of modern science. Whenever the phrenological theorists discovered any peculiar enlargement or prominence on the cranium, and found it existed in a number of persons remarkable for possessing any similarity in disposition or talent, it was with them, we are informed, quite sufficient to establish an immediate relation between cause and effect, inferring from thence that the protuberance without was occasioned by the development of the brain within, and that the part of the brain in question was necessarily, therefore, the isolated organ of some special faculty; never, by the way, pausing to enquire whether such cranial prominences are, in reality, occasioned by the development of the cerebral substance, or whether their other deductions are in accordance with the best

volumes thereon, as Aristotle, *Princeps Philosophorum*, Virgil, Plautus, and Juvenal, have copiously observed. Great magistrates have loved, used, and honored this science; amongst whom were Lucius Scylla and Julius Cesar, as Suetonius and Iosephus report, who affirm, that by the hand the said Cesar discovered the false Alexander, who said he was son of Herod. Infinite copious might I be on the subject."—*Ibid.*—*Preface to the Reader.*

principles of philosophy. Like the old systems to which we have adverted, it was, therefore, essentially a doctrine of *external* signs; and, as relating solely to the cranium, was appropriately termed "craniology, or cranioscopy." Dr Spurzheim, however, has, within the last few years, without assigning any sufficient reason, changed the name, and dignified it with the more specious and imposing title of "*Phrenology*," or *the doctrine of the mind*, although it is one of their avowed and reiterated acknowledgments, that the theory has been devised and established without any investigation into the nature or phenomena of the thinking principle. Bacon, Descartes, Locke, Leibnitz, Kant, are all, with their acute reasonings, formally denounced by the phrenological usurpers. *They*, it is urged, contented themselves with studying only by reflection the several subjects of their consciousness; *they* suspected not that the brain was a congeries of so many distinct mental organs; *they* were lamentably ignorant of the exclusive existence and monopoly of the thirty-five special faculties. The phrenological philosophy claims, accordingly, the special honour of being "quite distinct from every other,"*—critical, transcendental, or natural. It remains, therefore, for us to examine its several propositions, to determine whether this distinction should be a subject of congratulation or reproach.

* Spurzheim's Physiognomic System, p. 410, 411.

PROPOSITION I.

THAT THE BRAIN IS A CONGERIES OF SO MANY DISTINCT PARTS, EACH OF WHICH IS THE ORGAN OF SOME INNATE SPECIAL FACULTY.

WILLIS, Vieussens, Lancisi, Haller, Van Swieten, have, with many others, agreed in referring different states of thought and feeling to distinct parts of the brain. In latter times, Soemmering, Prochaska, Mayer, &c. have hazarded similar speculations. The most distinguished of our anatomists and physiologists agree in considering the functions of the brain yet involved in deep obscurity; and that, from our limited means of investigation, it is unlikely we shall ever come to any satisfactory conclusion, or succeed in discovering the manner in which mind operates on, or is connected with, matter. “Il est vrai, dit Gassendi, que vous pensez, mais vous ignorez quelle espèce de substance vous êtes vous qui pensez. Le principal de votre essence vous est caché, et vous ne savez point quelle est la nature de cette substance dont l’une des opérations est de penser.” Admitting that the brain is the emporium of thought, and that a certain perfect state of organization is necessary for the exercise of the intellectual powers, we have yet to inquire whether there be any evidence that should induce us to consider it a congeries of distinct organs.

When we speak of different organs, which individually perform separate functions, we must necessarily infer that each is characterized by its peculiar and appropriate struc-

ture. We are not entitled to take their existence for granted, unless this can be demonstrated; nor can any thing be more preposterous than to assign laws and attributes to a being or thing, the existence of which is itself not proved, or involved in any uncertainty. The phrenologists, however, have liberally done this, since, on examining the brain, we find not the slightest appearance of those organs, the relative positions and sizes of which are mathematically delineated on the external table of the cranium.

Vicq. d'Azyr, Cuvier, Chaussier, have, with many other celebrated anatomists, considered the brain as being remarkable for the unity of its structure. The medullary and cineritious substance is everywhere continuous; and even were we to admit, with Drs Gall and Spurzheim, that the convolutions consist of two fibrous layers, agglutinated together by the surrounding grey matter,* the continuity of structure would still remain. Dr Barclay was the first in this country who, upon these grounds, urged the following objection to Phrenology.—“ If you ask for any ocular demonstration respecting the existence of these organs, you are told they are indicated by thirty-three modifications, that have been observed in the form of the skull, and these occasioned by thirty-three modifications in the form of the brain; yet, on opening the skull, and examining the brain towards the surface, where these organs are said to be situated, it seems to require no small share of creative fancy to see any thing

* *Anatomy of the Brain, with a General View of the Nervous System*, p. 111.

more than a number of almost similar convolutions, all composed of cineritious and medullary substance, very nearly in the same proportions, and all exhibiting as little difference in their form and structure as the convolutions of the intestines; *nay, all, when unfolded, according to Dr Spurzheim, in cases of hydrocephalus internus, presenting but one uniform web of cineritious and medullary matter. No phrenologist has ever yet observed the supposed lines of distinction between them; and no phrenologist has ever ventured, in the course of his dissections, to divide a hemisphere of the brain into any such number of well marked and specific organs.*" *

Dr Spurzheim himself has replied to these remarks; and, as being one of the founders of the phrenological system, he is undoubtedly the best qualified to defend it. Let us notice, therefore, particularly the manner in which he combats the difficulty.—“ I cannot,” he observes, “ say what Dr Barclay may be able to do; but it is certainly easy to distinguish the anterior, middle, and posterior lobes of the brain from each other: and were they shewn me separately, I should never mistake one for another.” * What has this to do with Dr Barclay’s statement? That distinguished anatomist never even implies that there is any difficulty in distinguishing one *lobe of the brain* from another; consequently, this is altogether an evasion of the question. Dr Spurzheim then proceeds,—“ In the same

* Barclay’s Life and Organization, p. 375.

† Vide Transactions of the Phrenological Society, Art. xii.

way, I should never confound the organ of amativeness with that of philoprogenitiveness, or philoprogenitiveness with that of secretiveness, or the organ of the desire to acquire with that of benevolence or veneration ; and *Dr Barclay may be sure, if he make it his study to compare the configurations of the cerebral convolutions, and of the different organs, he will find great differences, which he has hitherto overlooked.*" This specimen of reasoning ought not to be passed lightly over. It is a style of argument no man would have recourse to, excepting as a *dernier resort*, when he really knows not what to say. The comparison instituted between the cerebral lobes and the phrenological organs is quite illegitimate, and involves a *petitio principii*. The query elicited by Dr Barclay's observations is simply as to the identity of the several organs. It is not, therefore, sufficient to say, study the *cerebral convolutions*, as if every convolution was itself a distinct organ. How are the numerous phrenological organs to be distinguished from one another, that are crowded together, not only in the same lobe, but the same convolution ? This perplexing point Dr Spurzheim altogether evades, and sums up his unsatisfactory answer with the following most preposterous assertion.—"*Moreover, when he shall see, besides the different forms of the organs, that they are frequently developed in different proportions, he will have an additional proof that the brain is a congeries of parts, performing different mental functions.*" What does Dr Spurzheim mean by his antagonist "*seeing the different forms of the organs ?*" Is there any line of separation between those that are situated within the same convolution ? To

say nothing of "additional," can ocular examination give us *any* proof of their existence? This *ex cathedra* example of inductive reasoning is in itself so *unique*, and so characteristic of the phrenological philosophy, that I hesitate not to adduce it as one of the many new features of that originality which so pre-eminently distinguishes the present system from every other of its predecessors or contemporaries.*

Professor Rudolphi, in Germany, went somewhat further than Dr Barclay, and, instead of questioning whether the organs can be distinguished from one another by any distinctive characters in the brain, rests his objection on the impossibility of recognizing them when apart. "Shew Dr Gall," (says he) "the organ of theft, of murder, or of religious sentiment, separated from the cerebral mass, and be sure he would not know them."† Dr Gall contents him-

* Mr Andrew Combe, after having adduced the above remarks of Dr Spurzheim, gives us the following anecdote, which he considers sufficient to shew that "one organ can be distinguished from another in the brain itself, without the intermedium of the skull." When Dr Spurzheim was lecturing in Paris, the brain of a suicide was handed to him during lecture, with the request that he would say what characteristic dispositions it indicated, and he would then be informed to whom it had belonged: whereupon Dr Spurzheim immediately proceeded "to demonstrate the development of the several parts." Now, really this proves nothing, because the brain, as a whole, being laid before him, he was enabled, by knowing their relative positions, to point out what he considers one organ from another. I need scarcely add, that by this *post mortem* phrenological *augury*, Dr Spurzheim divined accurately the dispositions which the unfortunate man had manifested during life.

† Grundriss der Physiologie, ii. Berlin, 1823.

self with giving an answer, which Dr Spurzheim terms "simply evasive;" and the latter, notwithstanding his inability to reply satisfactorily to Dr Barclay on the same subject, at once declares,—"*For my part, I will accept Dr Rudolphi's proposition; for I maintain, that he who has studied the forms of the peripheral expansions, will always be able to distinguish, in man, the organ of acquisitiveness from that of destructiveness, and that of veneration from either, as easily as an ordinary observer will the olfactory from the optic nerve.*"* Here Dr Spurzheim either professes to do that which he must know to be utterly impossible, or he is able to shew that the organs are divided from one another, by their distinct limits of size being ascertainable. But if it appear that no lines of separation exist between them,—that the organ of hope and ideality is, in fact, only a continuation of one material substance, every part of which is characterized by the same unity,—then it must be manifest that, to say nothing of identifying the individual organs afterwards, they cannot positively be separated one from another, as Professor Rudolphi proposes. That this is the case, can be proved not only by the testimony of every practical anatomist, but by the evidence of Dr Spurzheim himself, and of his late colleague, Dr Gall. In direct contradiction to the above assertion, the former observes,—"*It is often objected, that the particular organs of the brain cannot be distinctly separated, as the nerves*

* *Anatomy of the Brain, with a General View of the Nervous System,*
p. 112.

of the five external senses. *It is indeed true, the limits or lines of separation between the different organs cannot be exactly determined; but this is equally impossible as to the five external senses: the nerves of motion and feeling have not yet been separated, though these nerves must be different.** Dr Gall, in the same decided manner, remarks with him, "*Nous avouons que nous ne sommes point encore en état d'indiquer avec précision les limites de tous les organes du cerveau. Mais les anatomistes sont ils capable d'indiquer avec précision les limites du nerf moteur de la langue, et du nerf gustatif?*"† Here, therefore, the objection of Dr Barclay, and that of Professor Rudolphi, is proved valid, by the evidence of the phrenologists themselves. The analogy which is, however, introduced, respecting the nerves, is quite out of place. It is true, we cannot point out the filaments of motion from the filaments of sense in *compound nerves*; nevertheless, *we are able to do so in entire nerves.*‡ Thus, the optic and the fifth nerves we can distinguish as nerves of sense,—the *portio dura* as a nerve of motion,—and, in a similar manner, did they really exist, we ought to be able to recognize, by some distinctive charac-

* *Anatom. et Physiolog. &c.* vol. ii. 379.

† *Physiognomical System*, p. 181.

‡ We can, however, distinguish the former from the latter species of filament, by its constantly arising from the anterior column of the spinal cord, as the latter do from the posterior. It may be doubted if we can discriminate the ultimate filament of a muscle from that of a nerve; but organs are not distinguished by their ultimate filaments, but by their appreciable physical qualities and relations.

ters, one phrenological organ from another. From none of the enlightened teachers of Phrenology have we yet received any information how this can be effected; and we are, therefore, justified in believing that they themselves proceed, in their demonstrations, on no fixed scientific principles, and, like the experienced necromancers of old, rest every thing upon the credulity of their "*excellent and gentle converts.*"

The functions ascribed to these alleged distinct parts of the brain, are not the less remarkable for their want of accordance with all the known phenomena of the human mind. Each, it is said, is the organ of some innate special *faculty*. Drs Gall and Spurzheim appear to use this word in the same sense as did Locke, Reid, and other metaphysicians: that is to say, as implying a certain capacity or power, the determinate action of which depends on external objects and circumstances. They differ, however, from all their predecessors, in assigning to the mind only a definite number of these faculties; in considering that each has its own peculiar and restricted mode of action; and in believing that they are all severally connected with different portions of the encephalon. The phrenologists having repeatedly disclaimed the necessity of any inquiry into this part of their system, its incongruity should excite no surprise. As an example of the inconsistency—I could almost say positive ignorance—which prevails upon these subjects, we need only refer to Mr Combe's definition of the word *faculty*,—remembering, at the same time, how frequently he has used it, and how much he has made to depend upon its signification. "*The term faculty,*" (says

he) "is retained, as a convenient expression for the particular states into which the mind enters, when influenced by particular organs. It is applied to the feelings as well as to the intellect. Thus, the faculty of benevolence means every mode of benevolence induced by means of the organ of benevolence."*

Here both cause and effect are simultaneously confounded, and the state of thought or feeling that is produced by any particular faculty, is spoken of as the faculty itself. Instead of the faculties being considered mere relations, they are thus made positive agents, as though Mr Combe were to say, the faculty to understand, understood; the faculty to digest, digested; the faculty to dance, danced.† The same author, in another work, gives a different meaning to the word, and states, the "*term faculty is used to denote a particular power or feeling connected with the brain.*"‡ The contradiction is here so manifest, that it requires no comment. *Ex uno disce omnes.*

That the mind does manifest consecutively an almost infinite number and variety of faculties, there can be no doubt; but we have no reason to presume that it is at the same moment an aggregate of an arbitrary and definite number, all co-existing with different portions of the cerebral substance, and restricted in their individual modes of operation. The unity of consciousness would, on such principles, be neces-

* Combe's Elements. 1825.

† *Vide* Locke, Human Understanding, B. ii. c. 21.

‡ System of Phrenology, p. 61. 1825.

sarily destroyed. According to the phrenological scheme, different states of mind are conceived to originate separately, and independently of each other, by the supposed activity of different material organs. Dr Gall attributes to each of these organs five degrees of activity, occasioning Perception, Memory, Recollection, Judgment, and Imagination. On the other hand, Dr Spurzheim allows only three, which give rise to Perception, Memory, and Judgment. The brain is thus made an aggregate of so many distinct minds; and, to reconcile their even acting in conjunction, phrenologists must have recourse to a gratuitous supposition, an hypothetical idea, that, by a law peculiar to each, they all act in perfect harmony. Nevertheless, no ostensible reason can be adduced to explain why this should happen; for, as three degrees of activity are attributed to each organ, and as their functions are all different, it is evident there may be as many different degrees or kinds of action, going on in every part of the brain, as there are organs, multiplied by the degrees of activity in each. Thus, 35 organs, multiplied by 3, equal 105, and including the 5 senses, which make 15 more, we may have no less than 120 actions carried on in the same organ, every 35 of which may be simultaneously in operation.

The supposition, that different states of thought and feeling originate separately and independently from one another, through the instrumentality of perfectly distinct agents, will thus be found incompatible with the evidence of our personal or mental identity. Identity, says Dr Brown, is a relative term. "It implies, in every instance, a double sensation of some sort. The identity of our mind

is its continuance, as the subject of various feelings, or, at least, of that which is susceptible of various feelings. *The belief of it, therefore, can only arise from the consideration of its successive phenomena, and is, indeed, involved in the mere consideration of these as successive.*"

Upon the phrenological hypothesis, however, instead of regarding our several thoughts and feelings as relations of the same mind to any of its own antecedent states, they are, we are distinctly told, considered "relations of the simple substance, mind, to certain portions of the encephalon."* It, therefore, is evident, that, by this theory, not only is the relation of one state of mind to another interrupted, but an absolutely different thinking principle is established between them. Thus, the perception, memory, and judgment, arising from the "three degrees of activity" peculiar to the organ of veneration, must be essentially different from the perception, memory, and judgment, that result from the functional activity of every other organ in the system.

The unity of consciousness, and the evidence of our personal identity, would hereby necessarily be destroyed; nor is it of any avail to argue in reply, "that the several organs exert a subsidiary and mutual influence over each other, which is alone sufficient to prevent any such anomaly." An assertion of this kind is so extravagantly hypothetical,—so obviously suggested to suit the convenience of the moment,—that it has no legitimate claim to any serious con-

* *Physiognomical System*, 131.

sideration. Dr Spurzheim, therefore, adopting the usual mode of phrenological fortification, has recourse to a direct evasion.—“The organs of our system,” says he, “are double, and consciousness is single; so also are not our eyes double? yet we see singly;—our ears double? nevertheless we hear singly.” This attempt to defend and illustrate the *obscurum per obscurius* is in nowise calculated either to remove or palliate the difficulty. Our sense of vision, and that of hearing, are, it is true, single, because the impressions received by these organs are conveyed to one mind, as so many rays of light which concentrate in a single focus. Subdivide, however, this sentient and thinking principle,—scatter its energies,—endow thirty-five parts of the brain, all co-existing at the same moment, with as many distinct powers of perception,—and then is it likely the same unity would be preserved? It is not on the duplicity of the several organs only that this objection is founded: *it is upon the circumstance of the phrenologists having subdivided the unity of the mind itself*—that single mind which alone harmonizes passion, regulates action, and presides over all the phenomena of animal life, as one omnipotent power governs and pervades the changes and beauties of the surrounding world.

Dr Spurzheim, accordingly, perceiving the inadequacy of this reply, assumes a loftier tone, one infinitely more suited to the zeal of a theorist, and the dignity of a phrenologist. “The explanation of this phenomenon,” he observes, (which is certainly incompatible with our sublime discoveries,) “may, indeed, remain unknown for ever; but it is not the less true, that the brain is double, and

that each half is composed of different parts or organs." In other words, "appearances are certainly very much against us; nevertheless, it is not the less true that we are absolutely right." *Sic volo, sic jubeo, stat pro ratione voluntas!*

Instances of partial insanity have been brought forward, with the view of establishing the phrenological principles; but these, if impartially examined, will, I apprehend, have a very different tendency. Dr Spurzheim considers that the proximate cause of all mental derangement is disease in the brain; and he supposes that the peculiar character of the symptoms depend on the morbid affections of particular organs. Hence we are informed that, "in mania, the organ of destructiveness suffers most; in melancholia, that of cautiousness. When the organ of self-esteem is disordered, the symptoms that arise are very different from those that characterize disorders of the organ of benevolence or of veneration: accordingly, there are as many sorts of symptoms as there are primitive faculties of the mind and their combinations."* Unfortunately for this theory, those faculties which, in mental derangement, appear to be principally affected, are those which, not being considered as primitive, constitute no part of the phrenological system, and, therefore, have no distinct material organs. These are volition, attention, memory, and judgment. Metaphysically considered, therefore, we find, that, in insanity, *fa-*

* Spurzheim on Insanity, 117.

culties are deranged of which phrenologists take no cognizance; and we must, consequently, perceive that the limited view they take of the human mind has led them to exclude from their psychology the very faculties which, in this disease, appear to be most disordered.

No subject is more involved in obscurity than the pathology of insanity. We have not sufficient data to proceed upon to enable us to establish any relation between the conditions of the brain and the different states of mental aberration. Numerous are the instances where, after the most complete state of mental derangement has existed, the ablest pathologist has been unable to detect the slightest alteration in the cerebral structure; and, on the other hand, although no previous symptoms of mental alienation have been manifested, the brains of those who have died of apoplexy, epilepsy, or convulsions, have been found very much disorganized. We have also many instances on record of individuals who have lived for years, enjoying perfect health, and the exercise of all their faculties, notwithstanding the existence of abscesses and cavities within the substance of the hemispheres.

The late ingenious Dr Wells made most of his discoveries after a fit of apoplexy, subsequent to which, we are informed, he “never regained complete possession of his memory, and became unfit for any difficult train of thought which was the production of another person; yet *he did not become less equal than he had been to his own trains of thought*, so that he made more literary efforts in the fourteen years following than he had done during

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the whole period of his life." * Here, then, was diminished activity of perception, no faculty of the new hypothesis, and increased activity of ideality, which *should* have been diminished or *destroyed* on the same hypothesis. We have, indeed, sufficient pathological evidence to convince us that the brain, whether in mania or melancholia, suffers as a single organ; nor are morbid appearances presented to us only in those distinct parts of it which are represented as being the organs of those faculties that may, nevertheless, have been principally deranged.

Haslam relates the case of a young woman, aged twenty, whose insanity was occasioned by religious enthusiasm, and a too frequent attendance on conventicles. She was in a very wretched and unhappy condition, and terrified with the most alarming apprehensions for the salvation of her soul. She sang, wept, and prayed alternately; and, after continuing some time in this forlorn and pitiable state, she died. Here, we may presume, the phrenologists would have inferred disease of the organ of veneration. On examination, the pia mater was found inflamed, and an extravasated blotch, about the size of a shilling, was seen upon the membrane in the middle of the lateral side of the right lobe of the cerebrum. There was no effusion between the membranes, or into the ventricles, but a general determination of blood to the contents of the cranium.*

The same author reports another case, which, in a phre-

* *Vide* his own Memoir, p. xxxiii.

† Haslam on Insanity.

nological point of view, is equally well marked. A man of sixty-four years of age was admitted into the hospital. He was a person of liberal education, having been occasionally employed as usher in a school, and at other times as an amanuensis. When admitted, he was very noisy, and importunately talkative. During the greater part of the day, he was reciting passages from the Greek and Roman poets, or speaking of his own literary importance. He conceived himself very nearly related to Anacreon, and possessed of the peculiar vein of that poet. His conceptions gradually became less distinct, until he died. What, in this case, would have been the phrenological prognosis? Assuredly not the following.—The pericranium adhering loosely to the skull; tunica arachnoidea generally opaque; a large quantity of water between it and the pia mater; the contents of the cranium unusually destitute of blood; considerable effusion into the lateral ventricles, which were much enlarged; consistence of the cerebral substance soft. *

Numerous cases of this kind might be brought forward; whereas there is not one pure instance on record of any particular and isolated part of the brain being alone found affected, notwithstanding the individual may, as in the above examples, have manifested more especially aberration of those faculties which are supposed to have exclusive and distinct organs. The pathological appearances, in every case of partial insanity, afford, on the contrary, very clear indication of the unity of the brain's action. This view

* Haslam on Insanity.

also more satisfactorily accounts for any violent emotion, whether of hope or fear, joy or sorrow, suspending occasionally all the functions of the mind.

Pinel gives an account of an engineer, who proposed to the committee of public safety, in the second year of the republic, a project for a newly invented cannon, the effects of which would be tremendous. A day was fixed for the experiment at Menden; and Robespierre wrote to the inventor so flattering a letter, that, on perusing it, he was transfixed motionless to the spot. He was, shortly after, sent to the Bicetre, in a state of idiotism.* About the same time, two young conscripts, who had recently joined the army, were called into action. In the heat of the engagement, one of them was killed by a musket ball, by the side of his brother. The survivor, petrified with horror, was struck motionless at the sight, and was, some days afterwards, sent to his father's house in a state of complete idiotism.†

Dr Reid relates the instance of a young lady, who was one morning requested by her mother to stay at home, notwithstanding which she was tempted to go out. Upon her return to her domestic roof she found that the parent whom she had so recently disobliged had expired in her absence. The awful spectacle of her mother's corpse, connected with the filial disobedience which had almost immediately preceded, shook her reason from its seat, and she continued ever afterwards in a state of mental derangement.*

* *Traité sur l'Aliénation Mentale.*

† *Ibid.*

* Reid on *Hypochondriacal and Nervous Affections*, 51.

The influence of the mind on these occasions may, in many respects, be inexplicable ; but such instances afford us strong reasons for believing, that the several faculties, which may thus be at once entirely abolished, cannot be regarded as so many independent relations co-existing at the same time with differently constituted organs. Other cases might also be adduced to shew that our several propensities and feelings do not necessarily result from any such physical causes ; but frequently arise from adventitious circumstances, that operate on, and sometimes exert an imperceptible and extraordinary power over, the mind. Instance the singular and well-known history of Simon Brown, a dissenting clergyman, who fancied he had been deprived by the Almighty of his immortal soul, in consequence of having unintentionally killed a highwayman, although in self-defence : also the amusing case given us by Dr Knight of a poor humble maniac, who was transformed into a king for life by an accidental conversation.*

* " I once witnessed a very whimsical origin of the passion of pride, which bears immediately on this question. One of my patients, Wm. Y. who, on general subjects, possessed a most retentive memory, had forgotten that this is not the age of miracles. It chanced that William Faulkner, a quite, inoffensive, meek, and rather melancholy lunatic, was placed in the same range of apartments with Y. who took an early opportunity to question me respecting this *personage*, as he called him. I told him all I knew about Faulkner. He eyed me with suspicion and derision, and, after a short pause, said, ' If you don't know, sir, I do. I have repeatedly told you, that I had seen his majesty's person in the clouds, in broad day-light, when I was walking the streets of Liverpool.' (It is true, he had repeatedly mentioned this.) ' Of course,'

Drs Gall and Spurzheim next assume, that, in proportion as the brain increases in size, the faculties become gra-

Mr Y. continued, ' a phenomenon so extraordinary excited my astonishment, and roused my attention. I now understand wherefore this vision was vouchsafed to me. The features were too strongly impressed upon my mind, ever to be forgotten ; and this personage, who, for some diabolical and traitorous purpose, is called William Faulkner, is no less than his majesty ; and it is impossible, sir, but that you must be well aware of the fact.' So saying, in the most respectful and distant manner, bowing to the ground again and again, as he approached, and sidling round, that his back might be at no time towards *the presence*, he greeted W. F. with, ' I humbly, but most sincerely, hope your gracious majesty is well,' bowing again to the ground. His gracious majesty cast a look of curiosity at his very humble and loyal subject, regarded him a moment, and then quietly and meekly resumed his walk. His subject, however, had a suit to prefer ; and following, bowing, scraping, and sidling round, which produced a very comical effect, he entered on the history of his cruel and unjust confinement,—counting the weeks, days, and even the hours he had been confined, which he could always do,—and concluding, by most humbly, but most earnestly, beseeching that his majesty would peremptorily order his liberation. During this address, which was well spoken, I observed the drooping William Faulkner gradually draw himself up ; and at the conclusion, to my astonishment, he replied, with an air of dignity, rather bombastic, ' My good fellow, I am sorry I can be of no use to you ; my enemies confine me here.'—' But if your gracious majesty would be only pleased to direct to this person, pointing to myself, your royal order, under your sign-manual, the gates would at once fly open.'—' My man,' his majesty replied, ' you are mistaken. I am, I tell you, confined here by my enemies ; and I cannot at present, in this place, command any thing. I sincerely wish I could help you, but I assure you it is out of my power.' So saying, he walked off, with all the air and dignity imaginable. *Pride took possession of his breast ; and, to the day of his death, he called himself a king.*" KNIGHT on *Derangement of the Mind*, 23, 24.

dually developed; and when, consequently, this organ has attained its highest degree of development, which is generally about maturity, then the mental manifestations have the greatest energy. On investigation, however, it appears that no such co-relation does exist; and that the brain attains its fullest complement in size before the evolution of the intellectual faculties. Scemmering, in the explanation of his "*Tabula Baseos Encephali*," states that this organ is fully developed at three years of age, which opinion, it appears, he has subsequently relinquished. The Wenzels have investigated this subject more minutely; and, from the result of their observations, demonstrate that the brain acquires its fullest increment in size at the age of seven years, when they observe, "Illo anno cerebrum hominis et quoad totum et quoad singulas partes absolutum esse videtur." *—"In no one faculty," they add, "is a boy of this age entirely deficient, but all are in a state of inactivity. He is conscious of sensation, perception, judgment, desire, memory, imagination, fancy, reflection; but all of these faculties, if not exercised, are inert and inoperative. Habits of observation, and the force of intellect, grow upon him apace; in collective trains of ideas he institutes comparisons, and draws conclusions; still no absolutely new mental faculty is added, but all acquire vigour and concentration." †

These inferences being so much at variance with the

* De Penitiori Cerebri Structura, cxxvii. 247.

† Ibid. cxxviii. 255.

phrenological deductions, Dr Spurzheim naturally denounces them as incorrect: yet we are to remember that the Wenzels—not the avowed advocates of any favourite theory—came impartially to their conclusions after a series of inductive experiments; whereas Dr Spurzheim, zealous in the support of his own system, opposes them merely with a gratuitous assertion. The opinion of the Wenzels, that the brain does not increase in size after seven years of age, is corroborated by the experience of hatters, who find that the head does not enlarge much after that period. We are, on this subject, much indebted to Dr Milligan for the following interesting information.

“The mean greatest length of the skull is $6\frac{5}{8}$; breadth, $5\frac{1}{8}$, according to Dr Monro’s measurement of adults.* Hatters add the two diameters together, and take their arithmetical mean for the diameter of hats, which surround and measure the external visible circumference of the head. As the number of heads they measure is immense, and they themselves are void of all theory, the following table, obtained from an eminent manufacturer, and exhibiting the mean diameter of the external head at the different ages, may assist us in comparing the growth of the brain with that of the head.

* This measurement, it may be observed, is not taken from the external tables, but from the centre of diploe to diploe; so that, allowing for the external table and integuments, we have a clear proof that the subsequent slight difference in the size of the head is not owing to any additional increment of the brain.

" Table of Mean Diameter of Heads.

For a child of 1 year,	$5\frac{5}{8}$.	
2 years,	$5\frac{7}{8}$.	
4 years,	$6\frac{1}{8}$.	
7 years,	$6\frac{3}{8}$.	It then varies little till 12.
12 years,	$6\frac{3}{4}$.	
16 to 18,	$6\frac{7}{8}$.	

Adults, $7\frac{1}{8}$. Largest, $7\frac{3}{4}$ to 8 inches.

Servants' heads, generally smaller, $6\frac{3}{4}$ to $7\frac{1}{4}$. Also Negroes' heads small.

Women's heads are more roundish than men's, and nearly all of a size, varying from $6\frac{5}{8}$ to 7 inches in diameter.*

On comparing this table with that of Dr Monro's, it appears that the dimensions of the skull ascertained by the learned professor *are below average*, and that the difference of mean diameter between the *head* of seven years and of maturity, or the extra half inch, is to be attributed to the growth of the frontal sinus, external table, and soft integuments.†

* Dr Milligan's *Magendie*, p. 543, 544.

† The phrenologists have pretended latterly to doubt the validity of the Wenzels' observations; but they are, by the above table, proved to be perfectly accurate;—for as $7\frac{1}{8}$, the mean diameter of the adult head: is to $6\frac{5}{8}$, the mean diameter of the head at the seventh year: : so is $6\frac{1}{2}$ the mean diameter of the adult skull (*Elem. Anat. i. 203*): to $5\frac{9}{16}$ the mean diameter of the seven years old skull. But by the Wenzels (pp. 254, 295) the measured length of the brain is $6\frac{1}{2}$, the breadth $5\frac{1}{2}$ *Wurtemberg* inches at seven years; consequently, the mean diameter of that organ at seven years is $5\frac{9}{16}$ inches *English*, or exactly the dimension, at that age, between diploe and diploe, resulting above, from Dr Monro's measures, which are, therefore, too small by the thickness of the internal table exactly. The same thing is evinced by the difference of an inch between Dr Monro's measure of the adult diameter and that of the latter.

It is therefore satisfactorily *proved*, that the brain attains its full increment in size long before the intellectual faculties are fully developed ; consequently the powers of the mind cannot be considered as being evolved by the gradual enlargement of the cerebral substance. No anatomical research is, indeed, necessary to prove the supervention of mental energy after the age of maturity. The fact is sufficiently exemplified in the lives of many eminent men, as in those of Cornaro, Swift, and Walcott.

PROPOSITION II.

THAT THE POWER OF MANIFESTING EACH FACULTY IS ALWAYS PROPORTIONATE TO THE SIZE AND ACTIVITY OF THAT ORGAN, OR PART OF THE BRAIN, WITH WHICH IT IS SUPPOSED TO BE IN IMMEDIATE CONNECTION.

“ On remarque,” dit Dr Gall, “ que les fonctions de l’entendement sont d’autant plus parfaites que le cerveau est plus volumineux ; on remarque encore qu’il les partage d’autant plus avec le reste du système nerveux qu’il devient plus petit à proportion de la masse de ce système.” * On this hypothesis, as man is the most intelligent of created beings, so ought his brain, whether viewed in relation to the size of the body, nerves, cerebellum, or medulla oblongata, to exceed in volume that of every other animal. This appears not to be the case.

* Art Cerveau Dict. des Sciences Naturelles.

Daubenton and Buffon have shewn, that the brain of some of the monkey tribe (the *Sapajous*, or monkeys of America) is larger in proportion than to that of man; nevertheless, they exhibit no corresponding superiority, but are inferior in intelligence to those even of their own species whose brains are considerably less.

Cuvier remarks, It appears that, all things considered, the smaller animals have proportionally the largest brains.* Instance the mole, the rabbit, the mouse: in the cetacea, the dolphin and porpoise; and, in birds, the eagle, falcon, blackbird, canary, sparrow, linnet, &c. The sheep, rat, and field-mouse, have, in proportion, more brains than the elephant, horse, or dog; yet we all know how much the latter excel the former in their powers of intelligence.†

The general proposition which, since the time of Aristotle, had been laid down, that man has a larger brain, in proportion to the size of his body, than any other animal, being, by these facts, controverted, Soemmering has instituted another point of comparison, viz. the ratio which the bulk of the brain bears to the size of the nerves proceeding from it. His method is, to divide the brain into two sections,—the one comprehending that part immediately connected with the sensorial extremities of the nerves, which receives impressions, and is therefore devoted to the wants and purposes of animal life,—the other including the rest of the brain, which is to be considered the seat of the intellectual operations.‡ The brain of the horse is cited as an illustration: and, in this example, the absolute size of the

* Leçon. d'Anat. Comp. tom. ii.

† Ibid. Blumembach, Comp. Anat. by Lawrence, p. 207.

‡ Corp. Hum. Fab. tom. iv. §. 92. De Basi, Encephal. p. 14.

organ is only about half the size of the human brain ; while the mass of the nerves at their origin, is no less than ten times larger than we find them in man. Even this mode of comparison however, is not sufficient to establish any relation between the physical condition of the brain, and any corresponding degree or variety of intelligence. Most of the inferior animals have larger nerves, and possess some of the nervous functions in a much more acute state, than man. The brain of the seal is larger, in proportion to the bulk of its nerves, than that of the dog : the brain of the porpoise is larger, on a similar comparison, than that of the ourang-outang ; yet we are all aware how very superior the intelligence of the dog and the ourang-outang is to that of the seal or porpoise.

The relative size of the cerebrum to that of the cerebellum is the next point of comparison which has been attended to by all anatomists and physiologists, from the time of Willis. Man, it has been asserted, has a larger cerebrum, in proportion to the cerebellum, than any other animal. No such characteristic distinction, however, exists. In man, the relative weight of the cerebrum to the cerebellum is as *one to eight* ; in the horse, as *one to seven* ; in the dog, *one to eight* ; in the cow, *one to nine* ; in the saimiri, *one to fourteen*.* On this hypothesis, therefore, the dog and the cow should be as intelligent as man ; and the saimiri very much his superior.

* Cuvier *Lec. d'Anat. Comp.* tom. ii. 152.—Blumembach's *Comp. Anat.* by Lawrence, p. 312.—Lawrence's *Lectures on Physiology and Zoology*, vol. i. c. vi.

Nor does the comparison between the size of the brain and that of the medulla oblongata, proposed by Ebel, afford a more satisfactory criterion, whereby the intellectual powers may be estimated; as the breadth of the medulla oblongata in some baboons (the Macaques) nearly equals what we find it in man,—while, in the examples of the dolphin, the proportion is nearly double. In man it is as *one* to *seven*; in the Macaques, as *one* to *five*; in the dolphin, as *one* to *thirteen*.* No relation, therefore, can be supposed, in any case, to exist between the absolute volume of the brain and the different degrees of intelligence; and these facts sufficiently refute the phrenological opinion which we have given in the words of Dr Gall.

The size of the phrenological organs is principally constituted by the degrees of their development; nevertheless, we know that many animals of considerable intelligence have the brain smooth, and without any convolutions. The hemispheres of the Rodentia, particularly the beaver, hare, and squirrel, have, as Willis remarked, neither grooves nor convolutions, but are smooth and flattened. This is the case with the Sapajous; also with the opossum, as we are informed by Tyson; † the phalangista of Cuvier; and the two-toed ant-eater, according to Daubenton. ‡

The general size and configuration of the head cannot be regarded as indicative of any superior or inferior degree of intellectual capacity, excepting when it presents an appearance of mal-formation; in which case some intellectual

* Journ. Complemen. du Dict. des Sciences Med. tom. xiii. 211.

† Jones' Phil. Trans. vol. v. 178.

‡ Buffon, Nat. Hist. xiii. 94.

deficiency may be inferred, as it is not to be supposed that the organ can perform its functions. Hence, according to M. Pinel, idiots have the brain sometimes preternaturally large, and often disproportionately small. "We meet," he observes, "sometimes with the best possible formed heads associated with a very narrow discernment; and frequently singular varieties of conformation are united to every possible attribute of talent and genius."* A similar observation is made by Desmoulins. "Je pourrais citer un certain nombre d'hommes connus, aussi remarquables par la grosseur de leur tête que par la lourdeur de leur esprit ou la médiocrité de leurs talents. J'en pourrais citer bien d'autres d'une supériorité ou d'une universalité d'esprit bien décidées, et dont la tête est plutôt petite que grosse."†

The predominant dispositions, and the abilities of the mind, may, according to the theory we are considering, be discovered by the relative sizes of the phrenological organs; but, on this subject, Dr Spurzheim speaks with less decision than Mr Combe. "We employ," says the former, "the size of the cerebral parts to determine their functions; but the activity of the organs cannot be measured by the size alone."‡ The latter lays it down as a *rule*, that "every faculty desires gratification with a degree of energy proportionate to the size of its organ; and those faculties will be habitually indulged, the organs of which are largest in the individual."|| Instead of entering into

* *Traité sur l'Aliénation Mentale*, p. 360.

† *Anat. des Syst. Nerv.* vol. ii. 596.

‡ *Lectures Rep. in the Lancet*, April 22, 1825, p. 71.—*Phrenology*, 3d edition, p. 99.

|| *Combe's Elements*, 185.

the *arcana imperii* of Phrenology, to indulge in any abstruse disquisition on the relative powers and activities of particular organs, it is incumbent on us to inquire whether any of their several dimensions can be determined. The size of every organ, it appears, is to be ascertained by its length and breadth,—the first being estimated by the distance of its surface from the medulla oblongata,—the second by the extent of its peripheral expansion. We are to judge of them relatively; that is to say, taking into consideration the general size of the head, we are to remember how many are included in a given region, and each is then to be assigned its appropriate situation. Yet, how are their individual *sizes*, then, to be ascertained? The founders of the system, as we have already seen, acknowledge, that it is impossible to discover the limits of the several organs: how, therefore, is it possible to determine the exact size of their individual expansions? The answer of the Oracle is, “They are to be recognized by experience”—*experience!*—that experience which has never failed to quicken the penetration, mature the judgment, and perfect the abilities of every practitioner in the art of divination, from the time of the earliest necromancers down to that of the *dilettanti* calliper professors of the present day.

The activity of the organs, which cannot, according to Drs Gall and Spurzheim, be determined by their size and configuration alone, depends, we are informed, on their internal temperaments, four of which are particularly specified as increasing or modifying the energy of the several faculties.

1. The lymphatic or phlegmatic ; indicating slowness and weakness of the vegetative, affective, and intellectual functions.

2. The sanguine ; persons so constituted being easily affected by external causes, and possessing greater energy than those of the former temperament.

3. The bilious ; those endowed with which have a strongly marked and decided expression of countenance, and great general activity, and functional energy.

4. The nervous ; persons so affected having the nervous system preponderate greatly, and possessing great nervous sensibility.*

These several temperaments, it is to be remembered, are supposed to form part of our original constitution. That different individuals possess different idiosyncracies there can be no doubt ; yet these, on examination, will be found to result from incidental causes, that affect the animal functions in general, rather than from any original difference or peculiarity of organization.

Luxuriant living, and sedentary habits, may more especially be considered as giving rise to that lymphatic or phlegmatic state of the system, wherein the repletion of the cellular tissue gives the body a degree of robustness and corpulency which appears, in every respect, unfavourable to much muscular exertion. This will not be found to result from any innate or organic constitution. We do not find that it ever affects those who, strangers to the indolence

* Phrenology connected with Physiology, c. i.

and luxuries of civilized society, devote themselves to active and salutary occupations : we do not find it prevail in the early history of nations, when martial and athletic exercises are practised as preparatory to the profession of arms, and the enjoyment of the chase : we do not find the “ stout gentleman” of Washington Irving directing the army of the early Britons ; nor any eligible members for Addison’s humorous clubs of fat gentlemen chieftains of the Scottish clans : it is in more luxuriant times only that the turtle-fed alderman enters the august presence of the phrenologist, and the phrenologist, with one fatal *coup d’œil* discovers the want of one “ degree of activity” in the enchanted region of the thirty-five special faculties. *Heu quam difficile est crimen non prodere vultu !* Irony apart, many facts may be brought forward to substantiate the truth of the statement already advanced against the phrenological supposition.

When Napoleon headed the army of Italy,—when he became first consul,—when he ascended the throne of France,—how different was the temperament of his constitution to that which, when a prisoner in the island of St Helena, arose from the anxiety and remorse of a perturbed mind, that, like the Promethean vulture, preyed unceasingly on his rest ! His disposition, in early life, was over sanguine and aspiring ; yet, when the day of his disasters arrived, and the star of his destiny began visibly to decline, his habits, thoughts, feelings, assumed a different tone ; and he became, in every sense of the word, of a lymphatic temperament. Assuredly, this arose from external circumstances, that affected his constitution generally ; nor can it be considered, in any case, as an original condition of or-

ganization, necessarily occasioning a "weakness and slowness of the vegetative and intellectual functions." We do not, indeed, find that it has invariably any such effect. Montaigne and Dr Johnson both lived under its influence; yet, in neither case, did it impair the vigour or activity of their mental powers.

Examples of those who, in early life, possessed the sanguine temperament in a high degree, are more particularly calculated to show how incidental circumstances may effect a complete revolution in the system, and give rise to a different and quite a contrary habit and disposition.

Tasso, born in the happy climate of Italy, at twenty-two years of age the author of one of the finest epic poems in the language, having displeased the Duke Alphonso, by exciting a suspicion that he was desirous of leaving the servitude of his court, was detained a prisoner at Ferrara, where he was visited with a series of persecutions, that afflicted him with an habitual and profound melancholy, from which he never eventually recovered. The bitterness of grief, like the simoon of the desert, swept its withering influence over his heart; and no more possessed of that sanguine disposition, which rises superior to misfortune, he relinquished every hope of future happiness. "My tears," says he, "will now prevail no more below. Those who pledge me their faith, mock my sufferings, and break their own promises. There will never, I believe, be an end to this unworthy treatment, which holds me every moment between life and death."

"Questa è tomba de vivi ov'io son chiuso
Cadavero spirante, e si dissera
Solo, il career dei morti."

His supposed love for the princess Leonora, *—his offence, by expressing, in intemperate language, his indignation against the house of Este; †—his cruel imprisonment on the charge of insanity, ‡—his subsequent calamities and despair,—his final sufferings and death,—are subjects consecrated in the page of biography, over which the genius of Poetry has not disdained to shed her softest halo. § In Tasso we have the instance of a man of genius, who was in early life endowed with a sanguine temperament, or, as Montaigne expressed it, “a too fatal vivacity.” His reverse of fortune, diversity of sorrow, and long captivity, subdued at length the ardour of his enthusiasm, the brilliancy of his imagination, and the generous fervour of his feelings. A change, physical and moral, was thus wrought in the essence of his bodily and mental constitution, and every feature of his mind and disposition assumed an absolutely new and different character.

Rousseau, who has been termed “the apostle of affliction,” is another, and perhaps more striking, example in illustration of these views. He was, in early life, remarkably sanguine, and ever cheerful, generous, and happy, until he entered on his literary career. Like many who have, from the impulse of their enthusiasm, fallen into the same fatal error, he fondly pictured

* Serassi la Vita del Tasso, tom. i. lib. ii. 150.

† Ibid. tom. ii. lib. iii. 33.

‡ Muratori vide Lettera ad Apostolo Zeno. Tasso's Works, vol. x. p. 244.

§ Vide Childe Harold's Pilgrimage, canto iv. Also the Lament of Tasso.

to himself hopes that were too lofty to be realized, and indulged in visions of future fame and honour, that were only the flattering creations of a too fervid imagination. It is a true and beautiful apothegm, that "hope deferred maketh the heart sick;" and when experience unexpectedly dissipates long cherished illusions, the wounds of disappointment are too often deep, lasting, and never to be forgotten. This was eminently the case with Rousseau. The first difficulties and misfortunes that overclouded his expectations perplexed and overwhelmed him. Mortified pride, hopelessness, and a sense of remorse, urged him, in the bitterness of his vexation, into gloom and solitude. He retired from the world, like the stern un pitying Democritus, who is represented by Salvator Rosa* wandering among the tombs, and smiling contemptuously on the vanity of all human wishes and distinctions. Thus the hermit of *les Charmettes*, in his miserable solitude, was ever contemplating human nature in its darkest and most unfavourable aspect. His disposition completely changed and reversed; he became cold, calculating, distrustful, and misanthropical; a morbid sensibility sapped the vigour of his mental and bodily constitution; he pined himself gradually away; and, after having unbosomed all his own sins and frailties, died wretched and neglected. "His history," says Richerand, "is a proof beyond reply, that the melancholic temperament is less a peculiar constitution of the body than a real disease, of which the degrees may in-

* For an eloquent description of this picture, *vide* Lady Morgan's *Life and Times of Il Famoso Pittore di Cose Morale*, vol. iii.

initely vary from a mere originality of character to the most decided mania.”*

The bilious temperament, which is characterized by great “general and functional activity,” is always excited by those circumstances that at particular periods call forth great bodily and mental exertions. It is, consequently, found to prevail with those men who have, by a certain concatenation of events, been enabled to raise themselves to high situations in the public state, to preserve which they have, in a manner, been obliged to signalize themselves by superior energies. Examples, therefore, of this kind are found in Alexander, Julius Cæsar, Brutus, Charles XII., Cromwell, Cardinal Richelieu, &c. The determinate characters of such men are unquestionably the result of those peculiar and varied causes which contribute to place them in those conditions in life that give rise to and modify their after dispositions. Thus it is too true, that “men are the slaves of circumstances, when circumstances seem the slaves of men.”

The nervous temperament, like the preceding, will be found to be occasioned by external causes. This may, indeed, be inferred from its generally affecting only a certain class of people,—from its being more prevalent at one period than at another,—from its being frequently the consequence of some perceptible and accidental derangement of the organic functions,—and from its being excited by long continued or violent mental emotions; such as love, anxiety, fear, and grief. Even in those cases where

† Richerand Physiologie, &c.

this habit appears hereditary, it should be considered as a modification of disease, which may, with a due attention to regimen, be overcome. It is in the fashionable circles of society, not in the humble walks of life, that we find it principally predominate. There self-indulgence, indolence, and luxuries, that are ever the attendants on wealth, occasion all that excess of sensorial excitement, which too visibly diminishes the happiness of those who have, by the advantages of birth, been relieved from the necessity of those salutary occupations which Providence has made essential to our well-being. In those periods when the progress of art has removed us the farthest from a state of nature, this temperament is most general. Accordingly, we are informed that nervous affections were more numerous among the Roman ladies during the decline of the Roman empire, when the habits of society had become exceedingly vitiated. They prevailed also to an unusual extent during the eighteenth century, and immediately preceding the dissolution of the French monarchy, at which epoch appeared the works of Whytt, Raulin, Lorry, and Pomme. Several of the most eminent men of these times, among others, Montesquieu, Voltaire, and Frederick, possessed this habit in a high degree; and the history of their agitated lives sufficiently explains the causes of its development.*

These several temperaments cannot, therefore, be considered as originally forming a part of the organization of the brain; and their influence, as physically co-existing

* Richerand *Physiologie*, &c.

with the phrenological organs, appears obviously a chimaera. It is on the hypothesis of their being "organic constitutions" only, that phrenologists have been led to endow them with the occult power of exciting different degrees of activity in certain parts of the encephalon. Thus they have fallen into the error of mistaking the effect for the cause, inasmuch as these temperaments are, as we have seen, the *effects* of the mind acting on the body, and not themselves organic causes, that excite a mechanical activity of the material substance, with which they are supposed to be physically connected.

The absurdity of this theory consists more especially in the fact of *every* organ being endowed with its *own* constitutional temperament ; so that there are as many temperaments in the brain as there are organs, all of which being peculiar conditions of organization, are independent of external circumstances, and those states of the health that may subsequently affect the body. Furthermore, it appears that there is no possible mode of judging of the activity of these organs. The majority of them may be *passive*, or, as D. Spurzheim terms it, "*dormant*," whenever it suits the convenience of the phrenologist ; and, on the other hand, a single organ may, all of a sudden, become inordinately active, so as to surmount all possible control, and hurry the individual along, whether he wishes it or not, like the unfortunate Ancient Mariner driven over the "wide wide sea" by the "lonesome spirit of the south people," that doubtless urged him onwards very much against his own inclination.

More consistent and plausible is the theory of Thomas de Troisvevres, who represents the influence of the tempe-

raments as proportionate to the size of the great splanchnic cavities, each of which being possessed with its own temperament, determines the characters of men and nations. Thus,—

“ The cranial temperament, has mental energy, ambition, profound emotions. *Habitat*—free countries—France, England, Spain.

“ The thoracic temperament, the Hercules Farnese, better soldier than captain. *Habitat*—Germany, Poland.

“ The abdominal temperament, paucity of faculties, passions, and physical force. *Habitat*—Germany, France, and England ; but, in the latter, generally combined with cranial developement.

“ The cranio-thoracic temperament renders man the Lord of the creation :—possessed by great surgeons, conquerors, and usurpers,” &c.

“ These temperaments,” says he, “ change with different ages, and obtain also in animals. They promise to assist us in the amelioration and education of human character.” *

Theories and opinions of this kind can only be adduced as shewing how men, enamoured with any favourite notion, succeed in persuading themselves ultimately to believe in the most extravagant absurdities. In the words of an eminent author, “ they weave their sophistry till their own reason is entangled, and repeat their positions till they are

* *Physiologie des Temperamens, ou Constitutions ; Nouvelle Doctrine applicable à la Médecine Pratique.* Paris, 8vo. 1826, pp. 248.

credited by themselves. By often contending, they grow sincere in the cause ; and by long wishing for demonstrative arguments, they at last bring themselves to believe they have found them." *

Whatever standard of comparison we may adopt to estimate the weight or size of the brain, it is clearly ascertained, and even admitted by the phrenologists, that certain animals have a larger brain in proportion than man, and that the degree of intelligence, in no case, depends on its absolute volume. As, therefore, the law which applies to the brain *as a whole* will apply to it equally *in all its individual parts*, so it must be inferred that the absolute or relative size of certain portions of this organ can never be considered as indicative of any superior or inferior degree of mental energy. The phrenologists, therefore, wisely have recourse to an hypothesis which is so much "in double darkness veiled," that it cannot, on either side, be demonstrated or comprehended. It is impossible to conceive how the mechanical activity of certain parts of the brain can give rise to different states of perception, memory, and judgment ; and the induction from whence this conclusion has been drawn, resting, as it does, on the supposed organic cerebral temperaments, is so purely imaginative, that it exceeds the bounds of reason, probability, and common sense. *Size* is *one* condition necessary to activity, and the *fancy* of the phrenologist himself appears to be the *other* ; consequently, there is no definite principle or rule laid

* Rambler, No. 31.

down whereby we may calculate upon the influence of this supposed subsidiary power.

PROPOSITION III.

THAT IT IS POSSIBLE TO ASCERTAIN, DURING LIFE, THE RELATIVE SIZES OF THE ORGANS, BY THE CORRESPONDING PROTUBERANCES OR ENLARGEMENTS ON THE EXTERNAL SURFACE OF THE CRANIUM.

If, in addition to what has already been urged, it appear that the external form of the skull has no co-relation with the internal configuration of the brain, the impossibility of discovering, during life, the development of those parts of it which are considered different organs, will be sufficiently obvious. The evidence on this subject does not rest on any abstract or speculative reasonings. To come to a satisfactory conclusion, it is necessary only to institute an investigation into facts that are within the reach of every inquirer.

The skull consists of two layers of bone, an external and an internal, which are separated from each other by a diploe, or reticular net-work, that is interspersed between them.

The internal table is that which, properly speaking, forms the covering and protection to the brain; while the external, which is firmer and thicker, gives additional security to the enclosed organ, and is connected with the bones of the face. In proportion, therefore, as the facial bones increase in size, the external table is separated from the in-

ternal, and the diploe between them becomes more or less thick and irregular.

The parallelism of the two tables is hereby destroyed, and protuberances and enlargements formed on the external table, that have no corresponding representations upon the internal.

The action of the muscles has a considerable effect in occasioning this inequality, and in determining the size and configuration of the skull.

In mammiferous animals, in birds, and some reptiles, the internal face of the occipital bone represents the general size and figure of the cerebellum, and the extremities of the posterior lobes of the cerebrum; but the muscles that are attached to the external table draw it, to a certain extent, from the internal, and give the bone without an extent of surface and form proportionate to the mechanical power they exert.* Hence animals having the head placed obliquely, in whom these muscles are very firm and strong, have the occipital bone disproportionately large, compared with the rest of the skull. This we find the case in the lion, the hyæna, elephant, rhinoceros, &c. The muscles have a similar influence over the central bones, which may be considered as forming the arch of the cranium. In the African Negro and Carib, the temporal muscles being thicker and stronger than in the European, the crania of those people are found narrow and compressed at the sides.

In the Mongolian variety, the characters of the head are of an opposite description. The cheek bones are pro-

* Desmoulins Anat. des Syst. Nerv. des Anim. Verteb. tom. i. 101.

minent, visage flat, and the cranium is of a square form, with its prominences exhibiting a tendency to lateral projection.* This difference is accounted for by the deficiency of the compressing force, the effects of which are so remarkable in the examples of the African Negro and Carib.†

The same cause has a considerable influence in determining the configuration of the skulls of all animals: Those with a powerful under-jaw, and large temporal and masseter muscles, having the subjacent bone proportionately depressed; those, on the contrary, where the action of the lower jaw is less considerable, and these muscles do not exert so great a physical force, having the depression nearly effaced.‡

In the lion, tiger, wolf, &c. the temporal bone is externally most depressed over the part where the subjacent brain is most fully developed; and the zygoma of this bone, so prominent in these animals, extends over the part where it is least developed.||

In the centre of each parietal bone is a prominence, not occasioned by the cerebral development, but by its being the point from whence the osseous fibres radiate. At the centre of the union of these bones, along the median line of the head, there extends internally the longitudinal sinus, separating the two hemispheres, so that the brain does not there come in contact with the bone.

* Cuvier's Animal Kingdom, by Griffith, vol. i. 165.

† Pritchard's Researches into the Physical History of Man, 60.

‡ Desmoulin's Anat. des Syst. Nerv. des Anim. Verteb. 105. || Ibid.

Supposing the brain, instead of a single organ, were a congeries of phrenological organs, it would still be impossible to ascertain their positions and sizes externally, from the notorious fact that the convolutions have no symmetrical correspondence to each other in the two hemispheres. In 1826, Dr Spurzheim affirmed, that they are, "*in their form and direction, remarkably regular.*"* In 1828, in his correspondence with Sir William Hamilton, he directly abandons this position. In the words of Magendie, "the number, the volume, the disposition of the convolutions, are variable. In some brains, they are very large; in others, they are less, and more numerous. *They are differently disposed in every individual; and those of the right side are not disposed like those of the left.*"† The Wenzels, to whose authority I may again refer, completely establish this fact. The organs nevertheless must, in every individual, retain the same relative positions on the external tables of the skull, although the cerebral substance of one may frequently occupy the place, or be within the boundary, that is assigned to another.

In the anterior part of the head, the tables of the frontal bone are, we find, separated from each other by intervening spaces, or sinuses, which give the external table an elevation, and alone have a very considerable effect in determining the size and configuration of the forehead. It is of considerable importance to ascertain how far these sinuses

* Spurzheim on the Anatomy of the Brain.

† Milligan's Magendie.

generally extend, and how many of the phrenological organs they commonly affect. This question is easily determined by an appeal to fact. A considerable number of crania have lately been opened with this view; and it appears that the frontal sinuses extend over a greater surface than has hitherto been supposed. Sir William Hamilton, in a lecture at the Edinburgh University, exhibited the open crania belonging to that museum, with a number of other specimens, and thereby demonstrated that these sinuses, which are very unequal in their extent and depth, affect frequently as many, and often more, than *one-third* of the principal phrenological organs; and that the retirement of the internal table, from the irregularities and protrusions on the external is so considerable as to render it impossible to discover, by any external manipulation, the general size and development of the particular parts of the brain.

Mr Combe, perceiving it necessary to make some reply, delivered a lecture on the same subject in the Edinburgh Assembly Rooms, producing all the counter specimens he could find for that occasion. As this question is one which must ultimately be decided by the *number* of facts brought forward, and as Sir William Hamilton's collection of crania was so very extensive, it was incumbent on the phrenologists to bring into the arena, not only the *select* specimens which they have been gathering in their own museum, but as many other examples as they could possibly collect. Mr Combe, aware of this fact, and assuming all that plausibility which has, when dexterously managed, so fine a stage effect, has announced to the public that he triumphantly refuted Sir William Hamilton's demonstrations, not

simply by the collection of skulls from the Clyde Street Hall, but by the *whole* of the open crania from a private museum, which were doubtless, *from their number*, transferred to the scene of action with considerable difficulty.

"I mentioned," says he, "to the audience that Mr Syme, lately lecturer on anatomy, and now on surgery, *who is not a phrenologist*, had kindly favoured me with the use of *all the open skulls* in his collection, which I then exhibited along with the *whole open skulls* belonging to the Phrenological Society; hereby enabling every individual present, after ocular inspection, to decide for himself on the parallelism of the inner and outer tables of the cranium, as well as on the frequency and extent of the frontal sinus. By using Mr Syme's specimens, the charge of *selection* was obviated; and, by producing *all of them*, no room was left for suspecting the *intentional omission of any*; while, at the same time, an opportunity was afforded of contrasting *them* with the *phrenological collection*, and detecting any partiality in the latter, if it existed." *

Nothing can appear, at first sight, more satisfactory than this intelligence, whereby we are induced to suppose that a considerable number of open skulls were brought down from Mr Syme's museum, to determine the fact disputed; and great is the praise due to Mr Combe, who, with a degree of spirit and candour unexampled in the annals of controversy, brought forward "*all Mr Syme's specimens*," whereby he clearly obviated the charge of "*selection*," and

* *Vide The Phrenological Journal*, vol. iv. 388.

proved that no partiality whatever exists in the phrenological collection. On visiting Mr Syme's museum, however, I find that his collection of open crania amounts only to *three*, one of which, being that of an infant of about *two years* of age, would, in no wise, have affected the present question. Here, indeed, we might pause to ask what confidence is to be placed upon the authority of men who can have recourse to so flagrant a misrepresentation, to misguide their own credulous disciples, and impose on the understanding of the public? What can we think of that system which requires even its ablest advocate to defend it by such a miserable expedient?

The truth is, those who have the opportunity of visiting either public or private museums, and examining any number of open crania, will find, that the frontal sinuses among men, as among nations, vary considerably. They are, in every individual, very different and unequal in their height, breadth, and depth, extending most commonly over *seven*, frequently over *twelve*, and sometimes over *sixteen*, of the most important organs of the phrenological system.

While these sinuses exhibit this variety, there is no possible means of ascertaining, during life, their extent. It has, indeed, been stated that their presence is always indicated by a bony crest, while that of the organs is characterized by distinct and isolated protuberances; but the fact, in contradiction to this assertion, is, that the bony elevation alluded to never bears any relation to the dimensions or extent of the sinuses. Either may exist without the other; and where the sinus has been found wanting,

the external surface has been perfectly smooth, and without any protuberances indicative of cerebral development.

Dr Spurzheim has next asserted that the frontal sinuses are generally wanting in children, young persons, and adults, and that they occur only in old persons, or after chronic insanity.* The absence of the sinuses in young and adult persons is, on the contrary, exceedingly rare: so much so, as to have escaped the observation of Palfin, Bertin, Portal, Soemmering, Caldani, and other anatomists.†

Dr Monro mentions it as a remarkable fact, that, out of forty-five skulls of adults cut open, he found three only where the sinuses were wanting.‡ Out of the number opened by Sir William Hamilton, the proportion is still less.

Here, also, it may again be remarked, that the convolutions do not extend, so as to fill the angle formed by the union of the anterior plate of the frontal bone with its orbital plate; nevertheless, over this cavity are situated the organs of form, colour, order, number, &c. The same objection applies to the organs at the base of the cerebrum, and to a considerable portion of the cerebellum.

The external configuration of the cranium appears, therefore, to have no correspondence with the brain it encloses. In mammiferous animals, which are most favourable to such an opinion, as the skull is in them longer in a cartilaginous and flexible state, the internal table receives

* Examination of Objections, 79.

† *Vide* Monro's Elements, 133.

‡ *Ibid.*

the impression of the brain ; yet, even here, the olfactory and auditory cavities becoming interposed, the tables are unequally separated from each other, and the whole contour of the head is thereby visibly affected. This is particularly the case with the elephant, hog, and buffalo. The air-cells also of birds in general pervade the cranium, and have a similar effect, which is especially exemplified in the ostrich, eagle, and owl. * In many reptiles, and in some fish, the brain does not half fill the cavity of the skull, the interspace being filled with a watery or oily secretion.

Neither in man nor in animals, therefore, is it possible to ascertain, during life, the relative positions and sizes of those organs to which each of the more favoured faculties has been assigned “ a local habitation and a name.”

Dr Spurzheim, in reply to these objections, has lately observed, “ *We do not judge by the particular elevations and bumps upon the skull, but by its general development. Our adversaries are the bumpists—but no—look at the general appearance—judge for yourselves.*”†

What Dr Spurzheim would have us to understand by this declaration it is impossible to comprehend ; for, in the same course, nay, in the same lecture, he proceeded to demonstrate the individual bumps and protuberances which, in fact, constitute the system.

Have not the phrenologists, like the aspiring giants of the

* Blumenbach, Comp. Anat.

† MS. Notes of Lectures on the Anatomy, Physiology, and Pathology of the Brain, delivered in Edinburgh in 1828.

olden time, who piled Mount Ossa on Pelion, and Pelion on Olympus, crowded organ upon organ, from the base to the vertex of the head? Have not the supposed relative positions and dimensions of these, as indicated by isolated protuberances, been taught in books, lectures, and delineated on all the phrenological busts? Have they not pretended to measure them severally and individually in living characters, even to the eighth of an inch? But this is not all. In adverting to the custom which different nations have of compressing and otherwise changing the form of the head, Dr Spurzheim remarked, "The instrument that is worn for this purpose has been brought to England. I know not exactly how long it is used, but have heard about two years. It is curious, and worthy of investigation; and I would have you, should any of you have the opportunity, make this inquiry,—see, when the bone is compressed, whether the brain underneath it ceases to increase in size. *You may try it in animals; for if it be the case, then we could, in infants, compress the head in its different parts, so as to give a direction and development to the best and noblest faculties of the human mind.*"*

How beautiful is this suggestion! how characteristic of the philosophy of all the phrenological speculations! When this *annus mirabilis* comes to pass, it will be the millennium of Phrenology. We shall then, indeed, hear no more of "little bumps and protuberances," but shall

* MS. Notes of Lectures on the Anatomy, Physiology, and Pathology of the Brain, delivered in Edinburgh in 1828.

speak of the mountain of veneration being bounded on the south by the valley of amativeness, and on the east and west by the caverns of destructiveness. The ideal Republic of Plato, the Atlantis of Harrison, the Utopia of More, were all only dim and faint conceptions of that state of perfectibility of which the human mind and heart are thus supposed susceptible. But if, before this happy period arrive, Dr Spurzheim himself renounces the first and leading article in the phrenological canon ;—if he relinquishes the opinion that the different organs are ascertainable, during life, by the individual, distinct, and isolated protuberances on the external table of the skull ;—if he himself joins issue with his opponents, and at length denies the validity of the very principle *whereby the system was itself discovered*, and which still forms the basis of its constitution ;—then must his own disciples acknowledge that the whole phrenological superstructure has fallen into Babel-like confusion, and Mr Combe will be left, like another Marius, weeping bitterly over its ruins.

THE EVIDENCE OF ANATOMY.

ALL avowed theorists and speculative adventurers are, in general, tenacious of their claims to originality ; they are unwilling to believe that any of their views could, by any possibility, have been anticipated ; and resemble,

for the most part, the ingenious Dutchman, who clearly convicted some of the ancient authors of borrowing from his writings. How far Drs Gall and Spurzheim may be entitled to merit for having made certain discoveries which were well known in the time of Malpighi, is not a matter of the slightest import ; nor is it here requisite to institute any inquiry into some controversial points in the structure of the brain, which, it is acknowledged, have no necessary connection with the truth or falsehood of the phrenological doctrines.

The most accurate and minute anatomical investigations will *alone* not reveal to us the use of any organ ; yet the study of anatomy is essential to the progress of physiology, as a knowledge of the internal structure of an organ will always tend considerably to elucidate and confirm our opinions respecting the nature of its functions. It, therefore, remains for us to enquire, Whether the anatomical researches of Drs Gall and Spurzheim have thrown any light on Phrenology ?

The object of all their demonstrations is to prove that the brain is composed of a number of fibres,* which arise

* Malpighi, Mayer, Vienssens, Reil, and other anatomists, have described the fibrous structure of the brain. The late Dr John Gordon was at the pains to bring forward the evidence on this subject,—in reply to which Dr Spurzheim, with some asperity, entered into an explanation, endeavouring to exonerate himself from having been indebted especially to Reil. (Examination of Objections.)—The claims of the new candidates may, however, surely be set at rest by the following extract from Malpighi. “ From the trunk of the spinal marrow contained within the cranium, (*medulla oblongata*,) as from a remarkable collection of fibres, the whole fibres dispersed through the brain

from the medulla oblongata; and, decussating each other, form the pyramidal eminences. They then, increasing in

and cerebellum appear to take their origin; for they ramify from the four reflected crura of this medulla, in all directions, until they end by their branched extremities in the cortex. Their progress in the cerebellum is more evident; *it consists of fibres, extended in the form of a tree, in the extreme branches, or leaves, as it were, of which the cortex is elegantly laid, but so unconnected with the adjacent parts, that the leaves appear free. In the brain, however, the arch or roof of the ventricle consists of fibres, which are inclined towards the sides, and formed into a vault.*" Not only does Malpighi describe these fibres rising in fasciculi from the spinal marrow, and radiating through the hemispheres, but also the unfolding of the convolutions, which he represents in the brain of the fish. (*Vide Exercitat. Epist de Cerebro, p. 4, 1169.*)—The cerebral convolutions are supposed by Drs Gall and Spurzheim to be formed by two fibrous layers, slightly agglutinated together by the surrounding grey substance. The experiment to prove this consists in injecting a stream of air or water against a transverse section of the convolution which, it is affirmed, separates it from the apex to the base. (*Anat. of the Brain, p. 171.*)—This has been often performed; and the effect, we are informed, has uniformly been, that the stream of air or water separates the convolutions *at the sides as well as in the middle*; and the convolutions may thus be divided into layers more or less numerous, and more or less thick, at the pleasure of the demonstrator. Dr Spurzheim affirms that this separation only takes place when the stream is directed on the middle line. "I have never," says Dr Gordon, "experienced more difficulty in separating the laminæ at the sides from each other than those in the middle; and supposing the contrary to have been the case, it would only have tended to shew that the laminæ in the middle adhere to each other less firmly than at the side, which is the opinion actually entertained by Reil." (*Obs. on the Structure of the Brain, 143.*)—Tenon, Portal, Sabatier, Pinel, and Cuvier, witnessed Dr Spurzheim perform this experiment; and, in a similar manner, they report that, admitting the fact, it only proves "that there is less cohesion in the middle of a circumvolution than in the rest of its capacity." (*Rep. of the Committee of the French Institute.*)

size, form the crura cerebri. In their progress, they are represented crossing over the pons varolii; entering the thalami optici, corpora striæ, &c. ; and, after expanding into layers, and contributing to form the upper and outer portions of both hemispheres, they are, by the co-operation of the fibres of the corpus callosum, brought into communication, and find, as it were, a centre of union in the commissures.*

The presumptive evidence that is afforded by these anatomical views is strikingly at variance with the phrenological hypothesis. It is, indeed, impossible to conceive any structure more illustrative of the unity of the brain's action. In every part we trace a continuity of the same material substance, forming clearly a single organ; nevertheless, by a remarkable perversion of judgment, it is insisted that this continuous structure is a congeries of no less than thirty-five organs, the limits of not one of which can be ascertained. This proposition, albeit unsupported by the slightest vestige of proof, is invariably taken for granted. It is the *alpha* and *omega* of the whole phrenological creed, and the *petitio principii*, on which all their reasonings depend. "*It is certain,*" says Dr Spurzheim, "*that the brain consists of a multiplicity of instruments performing particular functions.*" Yet, on what does the *certainty* of this conclusion rest? How has it been proved? Where demonstrated? Had it been asserted that every separate bundle of fibres, or each convo-

* Anatomy of the Brain, with a General View of the Nervous System.

lution formed a distinct organ, the supposition, although equally hypothetical, would have been, to a certain extent, more plausible; but, even then, no reason could have been adduced to shew why every part of the brain might not still be essential to the performance of all its healthy functions, as every part of the eye or ear has a reference to the sense of vision, or of hearing.

The physiological speculations of Drs Gall and Spurzheim are absolutely opposed, therefore, to their own anatomical demonstrations: for by what circuitous mode of reasoning is it that we are to conclude that the very structure, which is proved to be, in every part, continuous, is nevertheless a congeries of organs? Is not this inference, in every respect, contrary to the evidence before us? Had Drs Gall and Spurzheim proceeded at all philosophically, instead of contenting themselves with reiterating a bold, reckless, and gratuitous assertion, they would first have set about *proving* this, the most important of all the phrenological propositions; but, on the contrary, they have substituted hypothesis for fact,—dogmatism for proof,—and *fatally*, it is to be feared, imposed on some weak-minded “ladies and gentlemen,” who may, like Johanna Southcote, never eventually recover from their delusion.

THE EVIDENCE OF COMPARATIVE ANATOMY.

THE phrenologists having framed their theory from a superficial examination of the human head, next proceed to manipulate the skulls of the inferior animals; but from the little influence which, as we have already seen, the brain has in determining the form and configuration of the external cranial bone, such examinations cannot afford sufficient data on which to rest any chain of inductive reasoning. With the same affectation that induces them to declaim perpetually against the metaphysicians of every age and nation, they inveigh against the use of the word *instinct*, and refer all its manifestations to the activity of the phrenological organs. That this word may have been applied by many writers in too indefinite a sense, may be true; it is, however, not the less certain, that all animals exhibit a species of intuitive knowledge, which differs essentially from human reason, and to which no better term can be applied.

The proximate cause of this instinct has, by some writers, been attributed to the organization of the animal; by others, to its experience; yet neither of these explanations will sufficiently account for its phenomena. However striking be the adaptation of an assemblage of instruments to perform certain actions, we must always consider them in relation to some moving, or directing principle. Did the structure of an animal alone give rise to its peculiar habits, all

its actions would be invariable, and preserve the same uniformity; nor would it, in any case, vary its mode of action to suit the contingencies of external circumstances. The same bird, urged by the same blind mechanical impulse, would, under every condition, build her nest in a similar manner, without being influenced by the peculiar exigencies of time and place. Yet we have many examples to the contrary.

The sparrow, when building on a tree, always constructs a covering for her nest, for the sake of protection; yet never has recourse to this contrivance when building under a shed or roof. The beavers, when they settle by the side of a running stream, always erect a strong pier, or dam-dyke, to preserve the water at the same height; yet they never think of this operation when they meet at the brink of a lake. The actions of many animals have also a relation to *future* exigencies, which is quite inexplicable on this hypothesis. Many birds remain for weeks together upon their nests, and, when they leave them, with provident care cover their eggs, to keep them warm, and conceal them from danger. The magpie, knowing her eggs are the food of many birds of prey, covers her nest carefully, leaving only a sufficient space at the side, to get out and in at. Rabbits, and some other mammiferous animals, whose young are born blind, as a protection, cover the holes wherein they lie concealed.

Nor will the experience of the animal alone explain these phenomena, as it is certain they perform many actions that are independent of all acquired knowledge. The instinctive perception which enables the young partridge, al-

most as soon as it comes from the shell, to run about, without injuring itself, among the long grass and corn, and the young grouse among the rough heather:—the skill and delicacy with which the uninformed swallow constructs her nest, and the gossamer spider its web, proves incontestably a knowledge independent of that long chain of reasoning which Berkeley refers to, as the cause of all our acquired perceptions of the situations and relative distances of objects.

While, therefore, neither the organization of the animal nor its individual experience, will alone explain the source of instinct, both these contingencies have doubtless a considerable influence in determining and modifying its manifestations; yet, to decide how far they may have operated in affecting the habits and propensities of different animals, we must venture into a wide field of speculation which has hitherto not been explored.

Drs Gall and Spurzheim have, indeed, proposed to examine the structure of the brain and nervous system, ascending from the simplest animals up to man. But what have they in reality effected? They have hitherto merely described the nerves of the caterpillar, the brain and spinal marrow of the chick, and some few mammiferous animals; yet even their work on these subjects, on the authority of Cuvier, Tiedmann, and other distinguished anatomists, is not exempt from errors. No very extensive view of the animal kingdom is, indeed, necessary to discover *facts* that are opposed to their conclusions, and to perceive that they have adopted a very unsatisfactory and partial mode of induction.

I. The cerebellum is supposed to be the organ of Amativeness, and the faculty attributed to it is said to have always an energy, proportionate to the size of its development.

In the class mammalia, the cynocephali possess this faculty in a very extraordinary degree. In the words of Desmoulins, "il dépasse tout ce que la nature a pu réaliser ailleurs, tout ce que l'imagination peut inventer;" nevertheless, the whole of the cerebellum, and particularly the lateral lobes, are less developed in proportion than we find them in man.*

The domestic guinea-pig of India possesses this propensity in a very inordinate degree. "D'un seul couple en moins de quinze mois, on peut obtenir mille individus. Fréquence réitérée de l'accouplement, et fécondité extrême, tout devrait donc, amener un développement énorme, du cervelet dans tous ses lobes;" yet it is neither more nor less developed than in the wild animal of the same species, "qui ne s'accouple qu'une fois par an, et ne produit que deux petits."†

In birds remarkable for the manifestation of this faculty, the lateral lobes of the cerebellum are wanting, and the median is not more developed than in those who do not exhibit this propensity to such a degree.‡ In some

* Anat. des Syst. Nerv. des Anim. Verteb. ii. 575.

† Ibid.

‡ "Dans les oiseaux où l'accouplement est si ardent, le cervelet consiste uniquement dans le lobe médian, et c'est aux lobes latéraux que résiderait chez les mammifères l'instinct de la volupté. Quoique dans les oiseaux la durée de l'amour soit plus courte, que dans les plupart des mammifères, quoi-

fish the median lobe attains the greatest size known. “ *Par exemple dans le Barbeau, les Silures, les Gades. Or aucun de ces poissons ne s'accouple et même le plus souvent les mâles ne connaissent pas la femelle dont ils fécondent les œufs.* Il y a non plus ici aucune éducation, aucun instinct conservateur de la famille. Les parents ne connaissent pas leurs petits, et s'ils les rencontrent, ils les mangent comme une proie ordinaire. D'après ces faits il n'y a donc aucun rapport entre le sens de la volupté, l'instinct de famille, et de lobe médian du cervelet. Tout indique au contraire que le sens de la volupté est à peu près nul dans les poissons osseux. Et comme nous l'avons observé ailleurs * il y a au contraire, un rapport inverse entre l'activité de ce sens et la fécondité. La reproduction est d'autant plus abondante, que le conscience de son acte diminue dans les êtres. Ainsi, les milliers d'œufs d'une morue paraissent être conçus et déposés avec la même insensibilité que les millions de fleurs d'un orme ou d'un tilleul sont fécondés et transformés en graines.” †

Toads, some species of frogs, and vipers, possess this faculty in so powerful a degree, that its activity absorbs all their consciousness; nevertheless, they have no cerebellum.

que enfin le cervelet ne soit pas plus développe dans le coq qui s'accouple presque toute l'année, que dans les oiseaux où l'accouplement ne dure que quelques jours, néanmoins la liaison de ces faits aurait pu sembler assez constante pour que l'on en fit une loi.” (Ibid. tom. ii. 578, 579.)

* Dict. Classiq. d'Hist. Nat. art. *Cynocephalus*.

† Ibid.

II. The organ of Philoprogenitiveness is next represented as giving rise to parental attachment ; but, on inquiry, it will be found that the energy of this benevolent feeling depends on moral, rather than on physical causes. In the early history of nations, when the habits, manners, and laws of a people, partake of the rude and barbarous spirit of the times, we find the exercise of this faculty, so far from being the necessary result of any organic constitution, so completely abolished, that we can scarcely recognize even its existence.

The Phenicians and Carthaginians were, by their mythological creed, induced frequently to sacrifice their infants to the gods. The latter had a law which decreed that four children of noble birth should be regularly immolated on the altars of Saturn.* History records a melancholy instance of this superstition and cruelty. It is related they attributed their defeat by Agathocles king of Sicily to the omission of these sacrifices ; and, in order to atone for the past negligence, offered up at one time two hundred of the sons of the nobility.

In some of the Grecian states infanticide was not only tolerated but enforced by law. The Spartan legislator expressly ordained that every child that was born should be examined, and if found weak or deformed, thrown into a deep cavern at the foot of Mount Taygetus, called *Apothe-tæ*, “ concluding that its life could be of no advantage ei-

* Anc. Univ. Hist. vol. xvii. p. 257.

ther to itself or to the public, since nature had not given it at first any strength or goodness of constitution."* The mild Plato even justifies this practice, and directs, in his republic, that "all children born with any deformity shall be removed and concealed in some obscure retreat."†

This barbarous custom was coeval with Rome. It was authorized by Romulus,‡ sanctioned by the law of the Twelve Tables,|| and continued until the time of Constantine the Great, after which it was exploded by the mild spirit of Christianity.

The Hindoos, from the earliest period, have had recourse to this appalling crime. The Greek and Roman historians noticed it, and referred to the places where they practised it. Dr Buchanan states that the number of infantile murders in the provinces of Cutch and Guzerat alone amounted, according to the lowest calculation in 1807, to 3000 annually; and, by another computation, to 30,000.§ Mr Duncan, the governor of Bombay, informs us that a sect of Hindoos was discovered in 1789, who were in the habit of putting to death all their female infants, the mother causing them to be starved. This sect, called the *Rajekoomars*, lived on the frontiers of Juanpore, a district of the province of Benares, adjoining to the country of Oude.

* Plutarch's *Lives*, translated by Langhorne, vol. i. 142.

† Ibid. vol. iv. p. 342.

‡ Montesquieu *Esprit des Loix*, tom. i. 268.

|| Cooper's *Justinian*, p. 659.

§ Buchanan's *Researches in Asia*, p. 49.

The practice had long subsisted, and was then prevailing.*

In Otaheite infanticide was at one time so common, that it threatened the depopulation of the whole island. Turnbull relates that, at least, two-thirds of the people were destroyed.† When Captain Cook visited the island, it was found to contain 204,000 inhabitants. In less than thirty years afterwards, the number was reduced to 5000.‡ When the people became converted to Christianity, its benevolent principles exploded the continuance of so horrible a custom.

The Giagas, fierce and wandering people in the central parts of Africa, indulge in polygamy, and bury all their children the moment of their birth, choosing in their stead the most promising children taken in war.

The frequent want of parental affection among barbarous tribes may be attributed almost invariably to the

* Asiatic Researches, vol. iv. 338.—Among the *Jarcjah Rajeputs* it was the custom to destroy all the female infants as soon as born, which was sometimes done by the midwife, but more frequently by the mother. Navigators describe also a society in the South Sea Islands, calling themselves *Arreogs*, among whom a similar barbarous practice prevailed. These, and many other facts referred to in the ensuing pages, may at first sight appear to have little or no connection with phrenology. They will be found, however, on further consideration, of considerable importance, as they tend, in a very striking manner, to prove how the superstitions, habits, manners, and customs of a people, without any reference to cerebral development, give rise to and determine the leading features of the human character.

† Voyage round the World, vol. iii. 77.

‡ Cook's Second Voyage, vol. i. 349.

difficulty which they find in supporting their families, and the low and degraded state in which, at such periods, women are generally held. Hence the Hindoos, in expiation of infanticide, urge the trouble they have in rearing their female children, and the improbability of their afterwards being married.* “I wish to God,” said a poor Oroonoka woman, when reproved for this crime; “father, I wish to God that my mother had, by my death, prevented the manifold distresses that I have endured. Had she kindly stifled me at birth, I had not felt the pain of death, nor numberless other pains that life hath subjected me to. Consider, father, our deplorable condition. Our husbands go to hunt with their bows and arrows, and trouble themselves no farther. They return in the evening without any burden; we with the burden of our children; and, though tired with a long march, are not permitted to sleep, but must labour the whole night. They get drunk, and in their intoxication beat us, drag us by the hair of the head, and tread us under foot. Ah, father, would to God my mother had buried me alive the moment I was born! You know yourself the truth of my complaints. Then, after a poor Indian woman has served her husband like a slave, she is at length despised by him; and, after twenty years, he takes a younger wife, and maltreats her children or herself, and if she complains, she is silenced with scourges. Can a mother do better than deprive her daughter of life?”†

* Buchanan's Researches in Asia, p. 99.

† Gumilla Histoire de l'Oronoque, cxxxii. *Voyage a la Guiane et a Cayenne*, p. 148.

In all countries where infanticide is common, women are literally slaves. The Giaga women reap, sow, cut wood, toil in the fields and forests, while their husbands remain supinely and indolently at home. The Hottentot young men are admitted into the company of their seniors at the age of eighteen, after which it is considered disgraceful to keep company with women. Dr Barrow describes a race of these people called *Bojesmans*, who, when oppressed by hunger, or obliged to fly from the Boors, without any hesitation strangle their children, cast them away in the deserts, or bury them alive.* In China, women are bartered for, as slaves, and kept constantly under lock and key. They have been notorious for infanticide. The late Sir George Staunton estimated the yearly amount of infantile exposures in the city of Peking alone at 2000, Mr Barrow at 9000, and many of the missionaries still higher.

The practice that prevailed in Greece and Rome of men purchasing their wives, and lending them out afterwards among their friends, must necessarily have tended to diminish the attachment of a mother towards her children; for the influence of tyranny, like the pestilent odour of the upas tree, never fails to lay waste and destroy every generous feeling within its reach. As nations, however, gradually improve, and become polished, females attain that rank in society which they are so eminently destined to adorn. An alliance of a more intellectual and sacred kind

* Dr Barrow's Account of a Journey in Africa in 1801 and 1802, pp. 378, 379.

is then established between the sexes; the more servile passions of human nature become softened and refined; and the affection of a mother towards her offspring assumes a character of the purest, fondest, and holiest description.

The existence of the philoprogenitive organ was originally inferred from the fact, that the feeling of parental affection is not so strong in the male, as in the female of every species of animal. The law holds universally, and yet it cannot be denied, that the organ is frequently absolutely and relatively more fully developed in the male, than it is in the female. Fathers have been known, like Titus Manlius and Brutus, to condemn their sons to death; and mothers have been seen to sacrifice themselves in endeavouring to preserve the lives of their children. The paternal is unquestionably weaker than the maternal tie; yet are there no other causes to which this may be attributed? Is it not obvious that the relation of a father towards his child is of a less intimate and endearing kind than that of the mother? He has no reminiscence of the long and anxious sufferings that have been endured for its sake; he feels not that the vital source of its nourishment is dependent upon him; he mingles with the stir and bustle of the busy world, and his thoughts are continually engaged by other cares; whilst the mother, brooding in solitude over her infant, cherishes the perpetual consciousness of having ushered it into existence; she alone feels sensible that its feeble life is still dependent upon her support, and day and night ministers, with all the tenderest solicitude of love, to supply its little wants and necessities. But, it will be asked, are there no examples among us to the contrary? none of

maternal heartlessness? none even of infanticide? It must be acknowledged there are some melancholy instances on record, in which the unfortunate mother, from a sense of her own frailty, and the fear of public ignominy, has been led, in the delirium of her sin, to uplift her hand against the life of her own child. The apprehension of exposure, the dread of persecution, above all, the trembling hope that she may yet save herself from dishonour, would appear, on such occasions, to raise a terrible conflict, in which reason itself grows bewildered, or only conjures up some new and more hideous phantom of alarm, urging the perpetration of this revolting crime. Many are the moral causes, therefore, which manifestly excite, diminish, or even obliterate for a time feelings of parental attachment; nor has any evidence been hitherto brought forward to authorize us to attribute the manifestations of this faculty simply to the increased activity of a certain isolated portion of the brain.

Throughout the animal kingdom the attachment of every female animal *of the same species* to her young is always uniform; whatever variety may exist in the form or size of the head, each will defend her young with the same savage intrepidity; nor does the feeling appear to be at all affected or modified by any difference of cerebral development.

The ingenuity which some animals exhibit in defrauding the stranger from the place of their young, affords an additional argument in favour of the opinion, that instinct cannot be regarded merely as a blind impulse, resulting from the organic constitution of the animal. When the hind hears the hounds, she puts herself in the way of being

hunted, and leads them from her fawn. The partridge, wild duck, ringed plover, and arctic gull, drop a wing, and feign lameness, enticing the obtruder to follow them, and leave their young in safety. The lapwing is not less ingenious : when a person approaches, she flies about, always retiring from her nest. Actions of this kind, suggested clearly by the exigency of the moment, and varied accordingly, can never be considered as the result merely of a mechanical cause, the effects of which would, in every case, be nearly similar, without any reference to the differences and peculiarities of contingent circumstances.

The law appears to hold universally throughout the animal kingdom, that when the young animal is able to protect itself, the end of parental attachment being accomplished, the bond of union is dissolved. When the young tigers can support themselves, they leave the jungle of the tigress ; and when the young eagles can secure their own prey, they are driven from the eyrie. This fact is strikingly opposed to the phrenological theory ; for how happens it that the organ from whence this feeling was derived all of a sudden, as if by an inexplicable caprice, ceases to continue its activity ? Again, it may be argued, that all animals possessing the organ of philoprogenitiveness should be endowed with the *memory* attributed to it ; yet, in no instance does the parent animal ever afterwards recognise her young.

III. The organ of Inhabitiveness is the next which claims our attention, being highly characteristic of the speculative genius of the phrenologists, who have, with the

most singular acumen, been enabled to determine exactly what are the primitive faculties of the mind, and have legislated on their several capabilities and varieties, with as much confidence as if they had been admitted prime ministers into the cabinet councils of nature, and were perfectly conversant with all her most secret operations.

As every flower and herb is indigenous to a certain soil and climate, so every animal is the inhabitant of some particular country, and pursues that mode of life for which, by its general structure, it is visibly destined. The bear and the wolf would not live in the climate of the lion; nor does the rein-deer thrive when transported from its snowy regions into the sunny valleys of the south. Certain animals, from the peculiarity of their conformation, are indisposed to much activity, and, like the sloth, move heavily along, or remain for a considerable period in a state of indolence and repose. Others, on the contrary, having the extremities light and flexible, are seen, like the wild goat or antelope, bounding playfully along the sides of the steepest rocks. Some, as the deer or sheep, browse quietly in the fertile vale; others, like the pacos, live only on the tops of the highest mountains. There are some birds which, like the dodo, from their general structure, are incapable of flying; whilst others, like the eagle, rise very high into the heavens. Such habits result unquestionably from the *general* organization of the animal. It is, for example, remarked, that birds which live on earth, as our domestic birds, and those which climb trees, have the posterior enlargement of the spinal marrow much greater than the anterior; whilst those which fly in the air, and mi-

grate, present an inverse arrangement.* But the structure of the brain or spinal marrow *alone* would not lead animals to adopt these peculiar habits: we must always look to their general conformation. Thus, the chamois, the inhabitant of the Alps and Pyrennees, is, by the light and tendinous structure of its limbs, peculiarly and visibly destined to ascend and descend the steepest and most difficult rocky paths; and there is every reason to believe, that animals preferring the summits of the highest mountains are led to do so from the difference of climate which is, in such places, more congenial to them. Hence we are informed, that the pacos, which seem to require a more purified and rarified air than is found even on the tops of our highest mountains, never thrive if confined to the valley, and invariably die when transported into a warm climate.

The phrenologists, in their theorizing mapia, conceive that no bird can rise into the air, nor any animal ascend a few yards up a mountain, without being endowed with a peculiar cerebral structure, disposing it to self-elevation. Yet we know some birds of the same kind adopt thus far very opposite habits, without it being possible to discover the supposed difference in the conformation of the brain. The sky-lark, for instance, mounts high into the heavens, and pours forth its "stream of song," from a height that is dazzling to the naked eye; whilst, on the other hand, the tit-lark perches on the branches of the

* Lawrence's Blumembach, 251.

hedge-row, and the ground-lark rests upon the green-sward. Again, the golden eagle builds her nest on the inaccessible summits of the loftiest cliffs, sometimes sheltered behind a jutting crag, often exposed to the wind, rain, and all the changes of the inclement weather. The sea-eagle, on the contrary, living chiefly on fish, invariably builds her nest down upon the sea-shore. Were even the possibility of the existence of such a pre-determinate faculty as that under consideration, for a single moment to be admitted, there would be no end to the phrenological speculations. Thus one organ would lead the bat to frequent ruinous cathedrals and towers ; another of a different kind, the owl, to the gloomy precincts of the church-yard ; and another, the ostrich, into his wild and solitary deserts.

Like the sage and immortal Martinus Scriblerus, the phrenologists appear to have been wandering in search of the sublime when they discovered this organ ; but as there is only one step between the sublime and the ludicrous, urged by an untoward phrenological impulse, they have, it would seem, unfortunately overstept the fatal boundary. Some opinions, indeed, may be maintained, that are so absolutely ridiculous, that they deserve no serious attention ; and he who would begin gravely to controvert them would only resemble Smollett's honest pedant, who sat down to prove, by mathematical demonstration, that it was wrong to do evil, and was laughed at for his pains. Thus, when Dr Spurzheim tells us seriously that "*one set of rats, possessing this organ, mount into corn-lofts ; and others, possessing it not, descend*

into cellars."* When he assures us this primitive feeling is first manifested by leading little "*children to climb up on chairs, in order to be on a level with adult persons,*"† there is something in the supposition alone so exceedingly ludicrous, that its nonsense and absurdity can be aggravated only by the gravity with which it would doubtless be defended within the walls of the Phrenological Society.

IV. The organ of Destructiveness, originally termed that of "*murder,*" is considered by the phrenologists as having been completely established; yet the manifestations of the feelings attributed to this faculty will invariably be found to result from those external circumstances and moral causes, which alone appear to determine all the darker, as well as the brighter, traits of the human character.

With every nation the effects of climate, and force of example, are remarkable; hence the inhabitants of northern countries have been represented to possess more apathy and indifference than those in more southern regions. A tribe of northern Indians has been described, who view, with the most perfect complacency, scenes of the greatest distress, and even find an enjoyment in witnessing such spectacles. "I have been present," says Hearne, "when one of them would imitate the groans, distorted features, and contracted positions of a man who had died in the most excruciating pain, and put the whole company except myself into the most violent fit of laughter."‡ Even women in these re-

* Physiognomic System, p. 291.

† Ibid.

‡ Hearne's Journey to the Northern Ocean, p. 340.

gions appear to lose all that mildness, gentleness, and sensibility, which the author of *Emile* has so well described as being the principal constituents of their natural character. "In this territory," continues the same traveller, "they desire their husbands and friends to bring them home the prisoners taken in war, that they may themselves enjoy the savage pleasure of putting them to death." *

With many tribes revenge is made a favourite and cherished passion, and its indulgence forms the leading feature of their character. Among the Kookies, or Lunctas, it is customary, if one of their number be killed, by falling from a tree, for the rest to assemble, and cut it down; and, whatever be its size, convert it into chips, which they scatter to the wind.† If one of them become the prey of a tiger, the whole tribe is up in arms; and the family of the deceased remains in disgrace until, by destroying the animal, they can give a feast of its flesh.‡ There are many entire tribes on the western coast of Africa, with whom it is an avowed maxim "never to forgive or let an injury go unrevenge," alledging that "the forgiveness of injuries is incompatible with the nature of man."|| The duty of vengeance is held to be imperative among the North American Indians. The instance is related by a traveller of a young Chactaw, who, having been reproved by his mother, "took so ill as, in the fury of his shame, to resolve on his own death." He committed suicide; and his sister, being his nearest rela-

* Hearne's Journey to the Northern Ocean, p. 140.

† Asiatic Researches, vol. vii. p. 189

‡ Ibid.

|| Park's Travels in the Interior of Africa, p. 15.—More's Travels into the inland parts of Africa, p. 26.

tive, and thinking herself bound to revenge his loss, told her mother she had caused her brother's death, and must pay for his life. "Whereupon the old woman resigned herself to her fate, and died by the hands of her daughter."* Among the Japanese the spirit of vengeance is carried so far, that even the females, as well as the men, carry a dagger in their girdle, and employ it, with the utmost coolness in their personal quarrels, not only against enemies and strangers, but even against their own brothers, husbands, and nearest relatives.† Among the Karatschai, or black Circassians, a similar principle prevails. When one man has been killed by another, the relatives of the deceased consider it necessary to avenge his death by the blood of the murderer, which they conceive can alone give rest to his and their own souls.‡ The superstitious notions and habits of such people, without any reference to the peculiarities of cerebral development, invariably give rise to and determine their individual dispositions: and as nations, therefore, emerge from a state of barbarity, different circumstances, operating on the same constitution, excite feelings and principles of an opposite description, and produce in every respect a striking revolution of character. Thus the Goths, on their first invasion, massacred indiscriminately man, woman, and child, and everywhere betrayed the most ferocious cruelty; but after their intercourse with Europeans, the same people became remarkable for their humanity.

* Roman's Natural History of Florida, p. 88.

† Tavernier's Relation of Japan, p. 5.—Humbert Voyages au Japon, tom. iii. 213.

‡ Klaproth's Travels in the Caucasus and Georgia, p. 289.

The delight which it gave the Romans to witness the combats of the gladiators, and the cruel sports of the circus, gives us an idea of the rudeness of that soil which, prolific in crimes, gave rise to a Nero, a Domitian, a Caligula, whose atrocities have darkened the page of history, and appear, like the laws of Draco, to have been everywhere registered in blood. While their names are recollected only for having been, as it were, consecrated to eternal infamy, it is to be feared that even *their* cruelties have been rivalled by some of the Persian, Turkish, —nay, some of the European sovereigns of Christian countries, over the record of whose actions the veil of humanity might well be drawn. If the influence of literature, and the progress of the fine arts, did not fail to mitigate considerably the excesses even of Roman atrocity, what beneficial consequences might we not have expected to emanate from a religion whose benignant rays have gradually been dissipating the heathen darkness of centuries, and have diffused a mild and heavenly lustre over the humblest paths of life ! And yet it is to be remembered, that in all great and disastrous political revolutions,—in religious wars and persecutions, amidst the fierce and conflicting struggle that ensues for superiority, the boundary between virtue and vice being for the time destroyed,—every heart becomes steeled to the tears of sorrow ;—every ear insensible to the cry of mercy ;—and the human mind, like the mystic star in the Apocalypse, seems, in its fall from all moral excellence, to bring down desolation upon its country, and to “ turn the third part of her waters into blood.”

Whether, at such calamitous eras, we contemplate the

demon-like Robespierre, Marat, or Carriere, rioting amidst the anarchy of cruel and licentious passions,—or whether we turn our eyes to the horrors of the Sicilian vespers, or the massacre of St Bartholomew, and see the infuriated enthusiast committing outrageous murder within the sanctuary of the church itself ;—the desire and propensity to destroy will be found, in every instance, to be a feeling suggested and excited by the influence of incidental circumstances, and the prevailing spirit and temper of the times, rather than the result of a particular configuration and development of a certain part of the brain, urging the individual, by its mechanical activity, to the commission of the most atrocious crimes.

The organ of destructiveness was originally discovered, by the phrenologists noticing the difference that exists between the skulls of carnivorous and herbivorous animals ; for as the former, it is argued, exhibit greater ferocity than the latter, and prey on living animals, so they must be excited by an internal propensity to destroy ; whereas herbivorous animals, browsing quietly on grass and herbs, are more gentle and docile, and manifest not this fatal propensity.* Now, the fallacy of this reasoning is very obvious. Carnivorous animals, it is true, prey on others ; they are

* The following are Dr Spurzheim's own remarks on this *very philosophical* speculation. " The tiger, lion, cat, &c. have teeth and claws, *but an internal power excites them to use them.* A sheep could not employ such instruments any more than an *idiot* could employ his hands to perform things for which they might be fit, but which his *reason* could not direct. Thus an internal propensity *must* make use of the external instruments, and this propensity is attached to a particular organ." (*Physiognomic System.*)—This

furnished with long pointed teeth, and strong, curved, and sharp claws, enabling them to seize and lacerate their food ; they possess great muscular strength in the jaws, neck, and limbs ; and have a short alimentary canal, visibly destined for the reception and quick passage only of animal substances. Herbivorous animals present, on the contrary, an opposite structure : their teeth are flattened at the surfaces ; they have no claws, less muscular strength, and a stomach of a peculiar and complicated mechanism, adapted to the double process of mastication. The general and peculiar structure of the two species of animals, renders a different mode of life essentially necessary to each.

What is meant by the destructive propensity of a carnivorous animal ? He is, by hunger, instigated to seek, tear, and devour the prey, on which alone he can subsist. Urged by this instinct, the wolf, who is said to be naturally a coward, becomes courageous from necessity, and will even attack the buffalo and animals he would otherwise avoid. The bear having gorged himself with food, retires with his hide distended, and passes the greater part of the winter in a state of abstinence and repose ; when again, however, wasted away, he prowls abroad, a mere skeleton, and the sa-

is a very fair specimen of phrenological reasoning ; and is it possible to conceive any thing more ludicrous ? The lion, tiger, and cat, having "*teeth and claws*," must have an internal propensity to use them : but the poor sheep, having the *teeth* without the *claws*, needs, it would appear, no such internal power ! The propensity to destructiveness being thus assigned to the lion, it "*must*" be attached to a particular organ ; and the said organ "*must*" be situated immediately over the ear. This is a phrenological induction !

vageness of his disposition is always proportionate to the inconvenience he may be enduring. Thus carnivorous animals are urged by an instinctive power to seek and destroy whatever may be necessary for their support, whilst a similar principle actuates equally the herbivorous animal. The sheep, the goat, the deer, the camel, tear down fences, destroy grass, herbs, foliage, &c. and manifest precisely the same faculty of destructiveness, in order to gratify their wants and desires. The same propensity that prompts the lion to spring upon his prey, or the tiger to plunge his head into the body of an animal,—the same instinctive power that guides the vulture to the field of slaughter, and the jackall to the grave,—leads the antelope to the mountain-herb which he prefers, the plover to the corn-field, and the humming-bird to the flower from whence, with its slender bill, it extracts the nectar on which it lives.

Nor is the analogy in other respects correct. Carnivorous animals prey on other animals, yet never, in their wild state, on the individuals of their own species; whilst the excessive activity of this unfortunate organ urges mankind invariably to murder one another. Its manifestations in the human species are, however, singularly and humorously varied. It leads, we are, informed, children to break their nursery toys,—boys to curse and swear,*—tipsy gentlemen to break wine-glass-

* "Some boys," says Mr Combe, "have a natural *incapacity* for swearing, proceeding from destructiveness being *moderately developed*, in proportion to the organs of the moral sentiments." (System of Phrenology, p. 105.)

es, mirrors, and lamps,*—satirists to be sarcastic,—and poets to conceive images of terror and sublimity ! †

All the analogical reasonings of the advocates of Phrenology, rest only on the preconceived hypothesis of the brain being a congeries of organs, in accordance with which it is asserted, that a different and characteristic development of it will invariably be found to correspond with, and indicate certain habits and propensities throughout, the animal creation. This amounts, after all, merely to an assertion ; yet it ought not to have been advanced unless supported by a very extensive series of observations ; whereas, on the contrary, although the phrenologists, with an air of the most devout candour, and ostentatious plausibility, entreat their hearers to “ *go into nature*,” they themselves have not ventured beyond the threshold of the enquiry. They exhibit in their demonstrations only the select *crania* of a very few mammiferous animals and birds, and appear to have made no enquiries to determine these much talked of differences and peculiarities of *cerebral* development.

* “ One gentleman assured me,” continues Mr Combe, *seriously*, “ that, when in a state of inebriation, *the lamps*, in his progress home, appeared to him *as it were twinkling* in his path, with a wicked and scornful gleam, and that he has frequently lifted his stick to punish their impertinence, when a remnant of reason” (*query*, The recollection of the watchman ?) “ restrained the premeditated blow. In him *destructiveness* is *decidedly large* ; but, when sober, there is not a more excellent person.” (Ibid. p. 109.)

† Lord Byron is said to have had the organ of destructiveness large, because his poems are wild and gloomy ; and more especially in consequence of his having written the little sketch of “ *Darkness*,” in which, says Mr Combe, the “ *very form and pressure of destructiveness is exhibited*.” (Ibid. p. 104.)

THE EVIDENCE OF FACTS.

WHENEVER the phrenologists find themselves in danger of being defeated by a philosophical argument, they invariably change their positions, and, retreating from the field of rational controversy, appeal, with empirical dogmatism, to the testimony of their facts. Overlooking for a time the insuperable difficulties that beset the theory, let us meet them on these grounds; and, first, we are entitled to enquire, whether a sufficient number of facts have been brought forward to establish the system?

The doctrines of Phrenology have been before the world upwards of *thirty* years, and, during that period, its promulgators have been unremitting in their exertions to procure all the evidence they could possibly collect, in support of their views. In 1796, Dr Gall commenced lecturing at Vienna, and continued his demonstrations there for five years. He was then joined by Dr Spurzheim; and, in 1800, they set out upon their travels to pursue their researches together. They were now seen travelling over a vast tract of country, from town to town, from village to village; visiting public schools, prisons, hospitals, and madhouses,—zealous, assiduous, and persevering in the pursuit of their anticipated “new discoveries.” Considering the variety and extent of their opportunities, how many facts ought they by this time to have accumulated! How long a catalogue of them should at present be on record! Instead of this, on examining their works, we find page after page replete with glimmering metaphysical specula-

tions; argument succeeding argument on the existence and the subdivision of occult faculties and primitive feelings; tedious, long, and frequently incorrect, anatomical descriptions; the whole interspersed with the observations they made, and the anecdotes they met with, which induced them to determine the exact situations of the several organs. They have given us no account of having taken, as the Edinburgh phrenologists have done, the measurements of the organs of different individuals, to compare them with their ascertained characters: they inform us only of having noticed, in a few cases, certain cranial enlargements, or configurations of the head, which induced them to assign to those parts the faculties in question; and no cases in addition are recorded to confirm the truth or falsehood of their conclusions.

Viewing Phrenology simply as a "*science of facts*," it is quite obvious, that the facts, which indeed constitute its very existence, should be numerous, striking, and unequivocal: they should not be "few and far between," with ever and anon a confusion and doubt as to their identity; they should form a strong and irresistible body of evidence, sufficient to silence the objections of the most scrupulous of sceptics. The doctrines of Phrenology having been for many years industriously promulgated, in 1820, *six* gentlemen in the Modern Athens, who, professing themselves "favourers of the phrenological system of Drs Gall and Spurzheim," resolved themselves into a society, for the purpose of "collecting facts, and preserving views, that might enlarge the boundaries of the science." Let us therefore enquire, what has been their success?

After the example of other more ancient and learned bodies, they proposed publishing their Transactions ;—a work which, if there had been the slightest truth in Phrenology, would have been undoubtedly very interesting and valuable. Not so, however : The “ Transactions of the Phrenological Society,” ushered into existence beneath the auspices of the most zealous and sanguine of enthusiasts, arrived only at the conclusion of the first volume, which soon floated down into the Red Sea of literature, or the trunk-maker’s warehouse, unnoticed, unreviewed, unlamented ! Whether it sunk into oblivion from the heaviness of its metaphysical disquisitions, or whether it was discontinued in consequence of the Editors having been “ gravelled for lack of matter,” may yet be a problem to the publisher ; but certain it is, this work, of upwards of 400 pages, contains only *eight* phrenological facts, which, by the date of the institution, and its transactions, appear to have been *four* years in accumulating.* Thus died, in the first year of its existence, the “ Transactions of the Phrenological Society ;” and the proceedings of this learned association have been since only transmitted, in “ shreds and patches,” to the Phrenological Journal, within the sybilline leaves of which we find only an heterogeneous mixture of the most incoherent intellectual wanderings, and the coarsest personal abuse. This work has been published quarterly for the last *five* years. It has lately been supported by the principal phrenologists, and, after all, contains only *twenty* re-

* Society instituted in 1820. Transactions, published in 1824.

ports of cranial measurements ; so that, notwithstanding the great outcry that has been raised of the many evidences in favour of Phrenology,—notwithstanding the zeal of its advocates and their united perseverance,—they have, in this country, only been enabled to concentrate, within the pages of their leading works, *twenty-eight* facts in support of their thirty-five organs.*

Even these being *selected* partially, and measured only by the phrenologists themselves, cannot be admitted, as strictly speaking, impartial evidence. Why do they not have recourse to a more extensive manipulation? One half the reports alluded to are of murderers, and the majority of them invalidated by the following simple fact.—When the criminal has been executed, the body is cut down, and thrown upon its back ; the uncoagulated blood then distends the muscles of the back, neck, and the posterior part of the head. Over this distension of the integuments the cast from which the measurement is made is taken ; and the *affective* organs, which are those in such cases principally concerned, are reported to be invariably

* I here only include those cases in which a report has been returned of the development of *all*, or, at any rate, the *principal*, organs of the system. Such, when contrasted with the disposition or character of the individual concerned, are alone entitled to the term of *facts*, since the phrenological induction is drawn, not from the size of a *single* organ, but from the relative proportions of them *all* being taken into consideration. I also exclude the ideal developments which the phrenologists have ascribed to the characters of *Shakspeare*, and their vague surmizes touching the development and character of nations.

INTELLECTUAL FACULTIES.

NUMBER.	ORDER.	INDIVIDUALITY (UPPER).	TIME.	TUNE.	LANGUAGE.	COMPARISON.	CAUSALITY.
Moderate.	Full.			Moderate.	Full.	Moderate, or rather small.	Moderate, or rather small.
Moderate.	Full.	Moderate.	Moderate.	Full.	Full.	Moderate.	Full.
Full.	Rather full.	Full.	Moderate.	Moderate.	Very small.	Small.	Very small.
Rather full.	Moderate.	Full.	Full.	Full.	Large.	Full.	Large.
Moderate.	Large.		Full.	Full.		<i>Rather large.</i>	Large.
Small.	Moderate.	Large.	Moderate.	Full.	Large.	Full.	Rather full.
Rather large.	Large.	Full.	Large.	Rather large.	Very large.	Large.	Large.

large ; whereas, were the body thrown upon its face, they would be as unequivocally small. In addition to this, we shall find that the same phrenological report will admit of any interpretation, and apply to almost every variety of character. In the Table opposite, I have contrasted the developments of Thurtell, Haggart, and Pallet, with those of Miss Clara Fisher, a child of eight years of age, Raphael, Sheridan, and Voltaire.

When the organs of *acquisitiveness*, *secretiveness*, *combative-ness*, and *destructiveness* are large, they are supposed to indicate the disposition of a thief and murderer ; but their activity may be restrained by the counteracting influence of the organs of *benevolence*, and *conscientiousness*. On referring to the Table, it will be seen that Sheridan was as good a murderer as Pallet, in as much as, while they are both alike deficient in benevolence and conscientiousness, that excellent Dramatist possesses the organ of destructiveness as large as Pallet, and that of combativeness *larger*.

Voltaire, it will also be seen by the phrenological indications, was a *better* murderer than Pallet, Haggart, or Thurtell. Pallet has the organs of combativeness and destructiveness *large* ; in Voltaire they are *very large* ; in benevolence and conscientiousness both are deficient.

Voltaire should also have excelled Haggart as a thief. Both have secretiveness *very large* ; but Haggart has acquisitiveness only *moderate*, whilst, in Voltaire, it is *large*. The philosopher of Ferney should also have been a more atrocious murderer, because his organ of destructiveness is

larger, and he has the organ of benevolence less developed than Haggart.

Again, it is really impossible to look at the development of Thurtell, and seriously believe he murdered Weare; the poor man must surely have been innocent, and executed by mistake, for he possesses the organ of adhesiveness, which disposes to "*fervour and constancy of affection*" *very large*, (and it is unlikely, with such a development, he would have murdered his *friend*,) that of veneration, which gives rise to "*religious sentiments*," and "*respect and deference to persons*,"* *large*, and benevolence, (the source of every generous feeling,) *very large*. How is it possible, therefore, to reconcile these indications with his real character? The difficulty is solved by the phrenological report, which shall speak for itself. "The murder committed by Thurtell was a pre-determined cold-blooded deed; nothing can justify it. Revenge against Weare for having gambled too successfully, and, as he imagined, unfairly with him, prompted it; *but there is every probability that Thurtell laid the unwarrantable unction to his soul, that he would do a service to others by destroying Weare. He considered Weare as a complete rascal, one who had robbed many as well as himself, and one who, if he lived, would have robbed many more:*"† thus the organ of *benevolence* is made to excite the organ of *murder*; and the phrenological deduction is

* Combe's System of Phrenology.

† Phrenological Journal, Vol. i. p. 331.

characteristic of all the beauty, excellence, and purity of its philosophy !

By this Table it will also be observed that Voltaire should have been a more atrocious murderer than Thurtell, because Voltaire has the organs of combativeness, secretiveness, and destructiveness, all *very large*, and is deficient in the moral sentiments of benevolence and conscientiousness, which Thurtell possesses in a higher degree, so that Voltaire, in point of fact, had less to restrain him from committing murder than Thurtell, who, it would appear, ought to have been a mild, benevolent, and religious character.

The histrionic abilities of the celebrated Miss Clara Fisher, are next considered to be satisfactorily indicated by the organs of *concentrativeness*, *secretiveness*, *imitation*, and *ideality* ; whilst the other organs of the system are supposed to exert, whenever it is necessary, their co-operating power. Haggart and Pallet, it will be seen, might have worn the buskin, and been an ornament to the British stage. Both possess the organ of concentrativeness larger than Miss Clara Fisher ; both equal her in secretiveness and imitation ; and all three are deficient in that ideality, which, we are informed, “ adds splendour to the performance.” Thurtell, however, possesses this latter organ in the same degree that she does, and the majority of the other organs concerned larger ; so that, in early youth, he should have shone a Roscius, or, in more advanced life, a Kemble.

The abilities of Raphael are referred to the development of constructiveness, form, size, and imitation, which were, it is said, the “ whole elements of his future great-

ness.* Now, the organs of constructiveness, form, and imitation, are all in Haggart reported to be *large* and *full*, and size is moderately developed; whilst, in Pallet, the latter is full, and the others referred to all of goodly dimensions; so that Nature probably designed the one for a Michael Angelo, and the other for a Salvator Rosa. Miss Clara Fisher, were it inconvenient to notice the organs of combativeness and destructiveness, (and it would be ungallant to compare her development, in every respect, with that of the evil company she has met with in the Phrenological Journal,) might be shown to approach very nearly to the genius of Raphael; so that the phrenological report of the few facts that are on record may very clearly be made to correspond with almost any character.

The most expert phrenologists have not, however, always been so fortunate as to return such an account of the developments as will, like the above, admit of any explanation; they have occasionally announced indications of character precisely the reverse of those manifested by the individual. Thus Voltaire, who, in France, reared the standard of infidelity on the ruins of every moral and religious principle, possessed a *large* organ of *veneration*;†

* Phrenological Journal, Vol. ii. p. 331.

† This fact is *admitted* by the phrenologists, who urge, in reply, that the organ of veneration, which, be it remembered, was discovered by examining the heads of persons "*eminent for piety*," and the "*portraits of saints*," disposes the possessor also (by a kind of poetical license) to respect titles, wealth, and power," and "pay deference to authority." (*System of Phrenology*, p. 300.)—In reply to this, it must occur to every one, that

and Sheridan, the most amusing and witty man of the Augustan period in which he lived, will be found to have been deficient in the development of the organ of wit.*

Voltaire did not bow to his superiors, either in rank or wealth ; and was, from his own indiscretion and impolicy, frequently obliged to retire an exile from his native country. His intimacy with Frederick of Prussia was entirely sought and occasioned by the prince himself ; nor did Voltaire, on any occasion, play the Polonius in his court. (*Vide* Condorcet's life of Voltaire ; Marmontel's Memoirs of himself and Contemporaries.) The phrenologists, urged by the extreme emergency of the case, next go so far as to actually assert that Voltaire was "*a religious man !*" He was, we are assured, of the "*Religion of Nature ;*" and the organs of veneration and causality, (*Phrenological Journal*, vol. iii. p. 572,) by their combined activity, prompted him to erect a "temple to the Supreme," or, in the words of Cowper, to "build God a church, and laugh his word to scorn." Voltaire, on these grounds, (the coadjutor of Alembert and Diderot,—the author of the "*Dictionnaire Philosophique*,"—the reviler of revelation, in whose eyes all religion was a farce, and every notion of futurity a jest,) has thus been canonised in the Temple of Phrenology ; and, considering the principles to which the phrenological doctrines lead, perhaps it would have been impossible for them to have found a more appropriate tutelary saint !

* The phrenologists have been at the pains to present us with garbled extracts from Moore's interesting life of Sheridan, in order to prove that the author of the *Rivals*, the *School for Scandal*, &c. was not really a witty man, (*vide Phrenological Journal*, vol. iii. p. 34.) His "*reputation for wit*" resulted, it is said, simply from his "*capacity of recollection*," which enabled him to "*treasure up, for his own use, every gem of thought which might happen to come in his way*." He, besides, took notes, composed with difficulty, &c. The circumstance of Sheridan's having taken notes of those bright and transient thoughts which only occasionally, it would seem, gleam across the path of genius,—the fact of his having submitted the happiest passages of his productions to all that "*limæ labor ac morâ*," which was dictated by a highly cultivated and elegant taste,—cannot dimi-

In the Edinburgh Museum is the skull of a Malay, a native of the Bali Islands, who was a notorious robber and murderer. His head will be found to indicate, by the development of the phrenological organs, that he was a good, an intellectual, and a benevolent man. The skull will be found of a greater capacity in *size* than are the crania of many Europeans with which it may be compared. The organs of combativeness, destructiveness, secretiveness, &c. are comparatively small, and the intellectual organs, absolutely and relatively, very large. Sir William Hamilton contrasted the phrenological measurement of this skull with that of the celebrated Buchanan, by which it is seen that the Bali murderer, who was executed for killing his wife, by sawing off her head, possessed the organs of veneration, benevolence, &c. in a higher degree than Buchanan, and those disposing to combativeness and destructiveness in a less degree; whilst, on the other hand, Buchanan, one of the most intellectual characters Scotland has produced, has all the intellectual organs less fully developed than they are found in the Bali robber. So far as it goes, this com-

nish anything from his reputation. As well might it be argued, that Gray was no poet, because he composed with hesitation and labour; but we have, in Moore's life, the testimony of Fox, that Sheridan was one of the wittiest of his contemporaries, (*see the Life of Sheridan*, chap. vi. p. 211,) a passage passed over in silence by the candid spirit of the phrenologists, who insinuate that all Sheridan's wit depended *entirely* on the excellence of his *memory*; yet, were this to have been the case, the difficulty, so far as Phrenology is concerned, would only be aggravated, because the *memory* of wit is supposed to be dependent on the *very organ* which is so deficient in the *size* of its development.

parison affords a very triumphant refutation of Phrenology; and the authenticity of both skulls, and the atrocious character of the Bali murderer, is, I understand, sufficiently ascertained.*

Considering Phrenology merely as a doctrine of chances and contingencies, we know that those cranial enlargements which are termed organs are found invariably in almost every human head; and all the propensities, sentiments, and intellectual faculties ascribed to them, are the common and natural attributes of every man; so that, while there are few skulls without such prominences and signs, there are still fewer individuals who do not possess, in a higher or less degree, some of the mental endowments, which are supposed to result from their activity. The chances are therefore always in favour of the phrenologist—finding, that the individual who manifests a certain number of those faculties will have, at any rate, some of the developments, or signs, to correspond. In other words:—"Supposing there was but one eminence on a given cranium, and the phrenologist had to infer, from a knowledge of the faculties, the

* In regard to the Bali murderer, (says Sir Walter Hamilton,) the evidence regarding the authenticity of his skull, and the authenticity of his character, is contained in Mr Crawford's Letters to Professor Jamieson. These mention the name, and detail the atrocities, of this wretch, whose cranium was procured after execution by Mr Crawford, who holds a high official appointment in the Indian Islands, and is well known in this country as the enlightened historian of the Eastern Archipelago. (*Correspondence with Mr Combe.*) I need not enter further into the evidence on this subject, as it has already been a subject of controversy, and will, I apprehend, be further noticed in Sir William Hamilton's forthcoming publication, entitled the "Fictions of Phrenology, and the Facts of Nature."

eminence existing on the cranium, he might here commit himself, in *any one single given case*, by wrongly inferring the presence of the sign of that faculty he had observed in the individual; but as the eminences are exceedingly common things, like the faculties they represent, a highly developed character, has a chance of being accompanied by an indication, which chance is greater in proportion to the frequency of the eminence, and may be expressed by a fraction, of which the *numerator* is the number of times in a fixed number of skulls that the organ is present, and the *denominator* another number expressing the number of times it is wanting. Thus, if the sign of music be present in three men out of four, the chance in favour of a conjecture made, that the possessor of a high musical faculty possesses also the sign of it, becomes as three to one, and may be expressed thus,— $\frac{3}{4}$.* As, therefore, the prominences or organs increase in number, the chance in favour of the phrenologist multiply in proportion; so that, considering they calculate on the existence of 35 organs, which, taken together, are endowed with as many, or even more than 105, different modes of manifestation,† it is singular they have hitherto adduced so few cases in favour of their theory. In addition, it is to be remarked, that while these enlargements, or prominences, are so numerous, and possessed by almost every individual, the phrenologists can represent their relative

* This doctrine of chances is very clearly and precisely stated by Dr Milligan.—*Vide Magendie Physiol. Trans. Note*, p. 549.

† P. 21.

sizes or proportions, as may be most convenient to themselves, because they have not yet adopted any fixed *scale* of measurement, so that the organ which one man may consider relatively large, another may term only moderate, or even small.

In the head of Voltaire, and of Mary Mackinnon, organs are marked, by Mr Combe, "*large*," and "*enormous*," which Sir William Hamilton, on remeasuring accurately, finds to be, according to any average, incorrect. But how can such a difference of opinion be determined, when there is no determinate scale of measurement to which the disputants may refer? The descriptive language of "*enormous*, *very large*, *large*, *moderate*," &c, has not been hitherto, nor is it at present, regulated by any scale whatever; hence we are justified in concluding, and must agree with Sir William Hamilton, that "so long as Phrenology is the comparison of two *hypothetical quantities*,—a *science of proportion*, without a determinate *standard* and *acknowledged scale*,—so long as it can be maintained, that its facts, if not assumptive, constitute only a partial induction that can never represent the universality of nature,—it is idle to dispute about a law which defines no phenomena, and the truth of an hypothesis that has no legitimate constitution." *

In taking a retrospect of the arguments advanced in the

* Correspondence with Mr Combe.

preceding pages against the principles of Phrenology, I find they may be reduced into the following ante-phrenological propositions.

I.—On examining the brain itself, no evidence whatever is found to exist in favour of its being supposed a congeries of organs ; its structure, on the contrary, is everywhere continuous, and strikingly illustrative of the unity of its action.

II.—The form, size, and extent of the supposed organs are determined by no appearances indicating the limits of their individual expansions : the division of the brain is arbitrary and unfounded ; nor could the phrenologists, were the organs dissected out and set apart from one another, recognise them individually by any characteristic distinctions.*

III.—No pathological evidences, from cases of partial insanity, can be adduced in favour of Phrenology.† After the most complete state of mental derangement, the ablest pathologist has been unable to detect any morbid appearances in the brain ; and when such have been presented, no relation has been found to exist between the aberration of a certain faculty, and any peculiar condition of that part of the brain to which it is ascribed.‡

* P. 24, 25.

† P. 17, 18

‡ I am aware the phrenologists have referred to cases in which they have presumed, that the aberration of a mental faculty has been accom-

IV.—The brain attains its full complement in size *before* the evolution of the mental faculties, so that the powers of the mind cannot be considered to be evolved by the gradual enlargement and development of the cerebral substance.*

V.—The size of the brain, by whatever standard it be estimated, is not indicative of any superior or inferior degree of intelligence, or mental ability;† and the law which applies to this organ as a whole, will apply to it equally in all its individual parts.‡

VI.—The four temperaments, which, it is alleged, form

panied with what they term "*diseased action*" of the organ to which it is referred. Thus, Dr Spurzheim states, that he once saw a man witness the death of his own child, by its being accidentally drowned, whereupon he immediately applied his hand to the organ of philoprogenitiveness, which suffered pain! In support of this proposition, however, I might accumulate the authorities of Morgagni, Dr Greding, (who made no less than 216 dissections of maniacal patients,) Pinel, Haslam, Meckel, and a number of other eminent authors who have pursued with peculiar ardour this investigation.

* The truth of this proposition is mentioned (p. 34) as having been "*proved*." It is so, by the latter's table of measurement being found to correspond with the reports which the Wenzels have given of the results of their experiments.—See the *Note*, p. 33.

† In confirmation of this statement, I may observe, that the heads of Byron, Shelley, and Keats, were all remarkably small. "Keats' head," says Leigh Hunt, "was a puzzle to the phrenologists, being remarkably small in the skull, a singularity which he had in common with Lord Byron and Mr Shelly, neither of whose hats I could ever get on."—(Lord Byron and some of his contemporaries, by Leigh Hunt, p. 246.)

‡ P. 49.

part of the “*organic constitution of the brain*,” and which are on that assumption supposed to modify and determine the degrees of activity ascribed to the several organs, do not co-exist originally, or exclusively with any such organization, and their influence founded on such an hypothesis is purely imaginative.*

VII.—It is impossible, during life, to ascertain, with any certainty, by the external configuration of the skull, the development of those particular parts of the brain which constitute the several phrenological organs.

VIII.—The phrenologists have not so far extended their researches into the inferior animal creation as to warrant their drawing any analogies or inferences in favour of their theory. Hitherto they have made but few investigations, and their inductions from those are very limited and partial.

IX.—There being no fixed scale, or standard of measure-

* From the time of Hippocrates down to that of Dr Thomas, (to whose amusing theory I have adverted, p. 48,) it would be a task of some useless difficulty to recount the number and variety of the theories which have been started respecting the temperaments. The majority of them all differ, *toto cælo*, from one another. I have merely been desirous of shewing, that instead of being “organic constitutions,” they are invariably the consequence of circumstances which affect the constitution *generally*,—so that the same individual, in the course of his life, may experience successively the lymphatic, sanguine, bilious, nervous, &c. The phrenologists, I perceive, have reviewed Dr. Thomas’s theory with ludicrous gravity, and find their “*own experience strongly in favour of his accuracy*.”—Phrenological Journal, vol. iv. 453.

ment, which can be referred to, in order to determine the relative sizes and proportions of the several organs, the theory of Phrenology is not at present reduced to any definite principles of practical application; and the manipulator, in taking measurements, can only be guided by the bias of his own judgment, which prejudice, fancy, or interest may mislead.

X.—The phrenologists have not yet advanced a sufficient number of *facts* to prove even the *possibility* of there being any truth in their system; and among the few they have recorded, some will admit of *any* interpretation, and others present us with indications directly contrary to the disposition and character which the individual they concern manifested.

In conclusion, it may be expected I should say a few words respecting the probable tendency and influence of the phrenological principles. I forbear, however, entering at much length into a subject which can only give rise to a melancholy and humiliating prospect; for it must be very obvious, that if the actions of men are regulated entirely by the activity of the phrenological organs, over which they have no influence,—if every thought, feeling, and disposition, must be referred to the same blind mechanical impulse,—if virtue the most transcendant, and vice the most appalling, are the consequences only of the same physical and irresistible power of necessity,—it requires little reflection to perceive, that the moral relation of man to society assumes

a new character. He is degraded into the condition of a mere *automaton*; he has no more control over his own conduct than the hand of a time-piece has over the mechanism that directs it. Here all responsibility ends; and when that delicate organization, which, from its peculiar structure and activity, gave rise to perception, memory, and judgment, falls into decay, the mind, it must be presumed, will inevitably perish with it, and sink into the blank and dreary void of hopeless annihilation.*

How can the pernicious consequences of these doctrines be better illustrated than by the fact, that the phrenologists themselves, in the blindness of their credulity, insist on the influence which their reports should have in the jurisdiction of criminal courts! There see the notorious thief, "if acquisitiveness be large, and benevolence small," acquitted of his offence, and let loose upon society, or imprisoned for life in a lunatic asylum, on the benevolent charge of *insanity*!†—There, again, the assas-

* It is in vain for those who cannot altogether reconcile themselves to the incongruities of the phrenological system, to argue, that this is not the necessary consequence of its doctrines. The mind is made to result as an effect from a certain condition of organization; and when, therefore, that organization is itself destroyed, it must be inferred, that the mind, instead of being destined to "flourish in immortal youth," will perish with it, "even as a vapour that appeareth for a little time, and then vanisheth away."

† This latter is actually the *humane* proposal of Mr Combe. "Allow," says he, "the public prosecutor to charge the individual, not with the crime, but with possessing irresistible tendencies to crime, and assemble a jury to hear the evidence of the charge;"—if guilty, "the jury might safely return a verdict of *insanity*, and the boy would at once be deprived of

sin, pardoned of his crime, because *Nature*, in her munificence, gave him such a development of organs, that the "*impulse*" to murder became "*irresistible*!" Conceive the most amiable and benevolent of our fellow-creatures tried and estimated by such a standard, and those who have "the evil signs upon them" universally shunned, pitied, and despised, as though the curse of Cain itself were written upon their brow! Some people have been described who mourn over the birth of their children, considering them only born to endure sorrow and calamity;* but with how many pangs of misery must a mother contemplate her child, who, fresh from the hand of its Creator, possesses such a configuration of head, as will in all probability dispose it in future life to the perpetration of the most atrocious crimes! Never was any system conceived in itself more incongruous, and in its consequences more hostile to human happiness! Yet, it will be said, some good, intelligent, moral, nay even religious, characters will be found among the select number of its advocates. All things are possible, and the contagion of this theoretical hallucination may, for a time, bewilder a few doubting and unsettled minds; yet, such have not examined the theory impartially; they open not their eyes to the palpable and acknowledged consequences of the system; they—not the sceptics to Phrenology—should

liberty, and freed from responsibility of human laws for life."—System of Phrenology, p. 514.

* The *Trausti*, described by Herodotus, assemble to weep over the birth of a child, lamenting the evils of the life into which it is ushered.—Lib. v. § 4.

incur the charge of ignorance, resembling in their wisdom the library rats of La Fontaine, "qui les livres rongeurs se font savans jusqu' aux les dents."* But the truth is, that Phrenology has made very little progress. Drs Gall and Spurzheim have, by their personal exertions, to a certain extent, forced their doctrines on the attention of the public; they have been zealously promulgating and defending them for the last *thirty-three* years, and, during the whole of that period, have not succeeded in making a convert of a single man of any scientific eminence. The census of their disciples is not to be estimated by the number who attend their lectures; for so long as Dr Spurzheim will, like a "star" in the dramatic firmament, visit only occasionally the principal collegiate and metropolitan towns, so long as

* "Some wicked wits," says Pope, "have libelled all the fair." Certain it is, however, that in the "Modern Athens," some of the fair sex have been seized with the Phrenological mania, and educate their children, hire servants, and judge of their friends, by the calliper reports. King James, in his curious *Daemonologie*, dwelling on witchcraft, asks,—“What can be the cause that there are twenty women given to that craft for one man? The reason is easie, for as that sexe is frailer than man, so it is easier for them to be entrapped in these grosser snares, as was over well proved to be trew by the serpent's deceiving of Eve in the beginning.” Muralt, many years ago, complains of the “curiosity of woman to know things to come, and their fondness for fortune-telling and credulity, (Letters on the French and English Nations, letter 1, p. 12;) whilst Wendeburn observes, “Ladies, mistresses of families, are not ashamed to drive in their own carriages to the door of the cunning man.”—(View of England, Vol. ii. p. 485.) The transcendant merit of the phrenological ladies is, that they have turned amateur anatomists, and enjoy a peculiar gratification in seeing the human brain dissected!

he will give an amusing course of lectures, interspersed with popular anecdotes, those who have not before heard him will attend ; but were his doctrines left to make their way by their own exclusive merits, there is little doubt he might soon, like the Arabian wanderer, “ return to the place of his birth, and say, the friends of my youth where are they ?” And an echo would answer—“ *where are they ?*”

THE END.

10

ANTI-PHRENOLOGY;

OR,

OBSERVATIONS TO PROVE THE

FALLACY

OF A

MODERN DOCTRINE OF THE HUMAN MIND,

CALLED

PHRENOLOGY:

BY

JOHN WAYTE, M. D.

" AUDI ALTERAM PARTEM."

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P R E F A C E.

From the time Phrenology was first made known to the Author, he has repeatedly endeavoured to discover whether it were built upon that sure foundation, which should induce him to adopt and advocate it; but the more he examined, the more he felt convinced of its fallacy, and conscientiously believing that the diffusion and practical application of its principles will produce consequences injurious to society, and quite contrary to what its promulgators anticipate, he has not scrupled publicly to avow himself an opponent.

He does not expect to bring those over to his opinion who are already strongly wedded to the system, but he does hope to prevent others from becoming converts to it.

To Phrenologists he would say, that having no desire to impugn the purity of their motives, he only requests them in return to give him credit for equally good intentions; also to remark, that as Dr. Spurzheim, when speaking of the apathy which medical men shewed for the science, hoped to be excused if any severe expressions should escape him,* whilst endeavouring to convince

* Lect. xvii. *Lancet*.

them of their error ; so the Author, in his endeavours to convince Phrenologists of theirs, looks for a similar indulgence.

As it might appear strange to many, that no notice has been taken in the following pages, of a recent work, entitled "Evidences against the System of Phrenology," the Author begs leave to state, that his Manuscript was quite prepared for publication prior to his having heard of it. He has since perused the Evidences with pleasure, and considers them to bear the impress of deep research and great talent. In these, Mr. Stone has fully detailed the history of the science, in order to prove that Drs. Gall and Spurzheim have not any claim to its discovery ; a point which the Author never contemplated as necessary, from its not being essential to the main object of his inquiry (namely) whether the doctrine be in itself true or false. If it shall be found to give the true exposition of man's understanding, the Author's opposition cannot prevent its progress, upon the principle, that "*Magna est veritas et prævalebit*," on the contrary, if erroneous, he trusts that his exertions will not have been altogether fruitless.

Lynn, June 9th, 1829.

ANTI-PHRENOLOGY.

The Philosophy of the human understanding is now supposed to be brought to an unprecedented degree of perfection, by a system which the March of Intellect has produced, and which professes to teach all its intricate operations in a superior manner. To the discoverers of this new light, the science of mind must be almost a "reading made easy," since they avow an intimate acquaintance with all mental manifestations and their respective organs, so as to demonstrate unerringly where they severally reside within the skull.—Perspicuity, Precision, and Truth are said to characterize it; hence we may presume that it will soon claim a rank among the exact sciences.

This novel and in every respect singular doctrine, received its earliest publicity, in any tangible and regular form, from the pen of Dr. Gall, a German, who named it Craniology; but as this title could only confer a superficial char-

acter, since it merely implied the skull or bony covering, and not brain, which alone is the organ of mind, it was deemed expedient to substitute the word Phrenology, a term more justly expressive of the desired object : but even this improvement does not appear sufficiently comprehensive, because its etymology bears no reference whatever to the cranium or skull, which is unquestionably the Phrenologist's mind-gauge, or sole index of mental organs. I should therefore say, with all due deference, (*"et fas est ab hoste doceri"*) that the compound appellation of Cranio-phrenology was preferable to either, because it embraces every instrument which the Artist employs.

It is now fully before the Public, and at the option of any individual to canvas and scrutinize, advocate or oppose, as he may think proper ; and should a little freedom of animadversion be indulged in, the Phrenologists must not forget that they have delivered their opinions on all Metaphysical writers who preceded them, with no sparing hand.

Phrenology is a plant that has not thriven kindly on the Continent, although indigenous to that soil, and an attempt is making to naturalize it in this fertile Country, Scions of which, springing from nurseries, called Phrenological societies, are thence propagated through the kingdom. John Bull has often perfected inventions that

have been made by his continental neighbours, and probably he hopes in due time to elevate his German discovery from a speculative to a practical purpose. Should he succeed, all will be well, and he may have much reason to rejoice; if not, he has only to disregard the being laughed at for an excess of credulity, in fostering a delusive chimera. Some of my readers may coincide with, others oppose this theory of the human mind, but I take it for granted that all are desirous of discovering truth or error in any branch of knowledge, and of welcoming the former from whatever source it springs; ("the flower's divine where e'er it grows") and therefore that they keep themselves open to conviction, without any fear or shame of practising retraction. At present I candidly confess myself an opponent, being unable to admit the soundness and truth of its doctrines; but it does not follow that because I oppose a question to day, I might not upon good reasons advocate it tomorrow, without meriting the name of a changeling. With this open unprejudiced feeling, I purpose offering a few remarks upon the system, which in my opinion has a tendency to operate in extremes; either by doing the greatest service or disservice to mankind, according as it may prove to be right or wrong: and since, if fully recognized, its operation could not be limited, but must ramify through every department of society,

I am persuaded that the utmost caution and judgment should be exercised before so influential an agent obtains universal acceptance.

The Phrenologist does not, any more than the Metaphysician, attempt to explain the *Essence* of our reasoning intellectual faculty. Both, in the construction of their individual systems had an eye simply to the manifestations or operations of mind; but whilst the latter has laboured to convince mankind, that *these* result from an *unity* of action of one entire Brain upon every external object presented to it through the media of our five senses, and effected by some unknown hidden process; the former has taken a totally opposite view, contending for a perfect divisibility of action, and asserting that the human brain is composed of a determinate number of distinct organs, (thirty-five) which represent as many faculties or powers; and further that every individual organ can be pointed out and delineated upon the outside of a skull. The Metaphysician does not presume to say that his own view admits of positive proof, but from certain rational arguments, he esteems it the most probable and correct; still he will not dogmatically affirm its infallibility. The Phrenologist's language, on the contrary, possesses little caution; it boldly declares that his doctrine teaches the only true Philosophy of mind, for that under such and such portions of the skull, such and such

organs are constantly seated. Dr. Spurzheim says "With respect to many individual parts I have been certain of their *functions* for a long time, and I could challenge any one to bring me an exception, but of *some others I will not speak so decidedly**."

Had Phrenologists not delineated on the head any other organs than what they knew to a certainty, one might be only induced to think them rather dogmatical, but when we find them depicting as exactly, organs whose nature and even existence are doubted, then we have a legitimate right, to question and distrust the accuracy and soundness of the whole science; for surely it evinces great imperfection to map out a brain into so many distinct faculties, name them definitively, and then be uncertain as to the reality of *many*. What should we think of a Geographer, who, having clearly delineated the several places of a newly discovered country, afterwards informs us in his work, that he could not speak decidedly as to *some* of them? Would his Chart be worth a groat?

* Dr. Spurzheim's 3rd Lecture— *Lancet* Vol. vii.

I may here remark that a course of Lectures on Phrenology was delivered by Dr. Spurzheim in London in 1825, which I perused, and from which I shall frequently quote with confidence, in consequence of their correctness being allowed by the Dr. himself, as stated in No. 275 Vol. 1. 1828—9 of the *Lancet*, in the following terms. "Dr. Spurzheim's Lectures on Phrenology, in the like manner appeared with the consent and *underwent the revision* of the Lecturer.

The advocates of this doctrine are straining every nerve to promulgate it widely, and rivet public opinion in its favor; by establishing societies, by itinerant lecturing, and by issuing periodicals. They have unquestionably full liberty to make such exertions, and fortunately, equal freedom is enjoyed by those who disbelieve their system, to point out and make known every argument which may go to prove its unsoundness, folly, or danger. Although through its staunch supporters Dr. Gall, Dr. Spurzheim, Mr. G. Combe, and Mr. de Ville, great notoriety and importance have been obtained for it, yet I think they will be transitory, for no discovery ever procured lasting fame, which was not well founded upon incontrovertible facts. In the sequel I hope to shew, that their deductions are based upon incorrect premises, and if persons will but examine the principles of Phrenology attentively and dispassionately, they cannot fail of detecting an abundance of gratuitous assumptions, with erroneous and absurd inferences. At the same time that I thus express myself strongly, I fully and freely exculpate its advocates from any intention or wish to impose upon the public a system, which they themselves do not firmly believe sound, and pre-eminently superior to all others. They have from time to time, pruned, refined, and shaped it, so as to draw very largely upon public faith; and they seem anxious

to obtain for it an ascendancy which shall overpower and bury all other systems in oblivion, and thereby assume full authority to model and regulate education, and institutions of every kind, after its own way. At an early period of its promulgation, a most talented abettor being very desirous of learning the opinion of that distinguished German Physiologist Blumenbach, as to the merits of his favourite science, requested it, upon which the venerable Professor is said to have replied in the following pithy distich :

“What is *true* is not *new*,

“And what is *new* is not *true*.”

This salutary check did not operate at all in damping or diminishing his ardour. In Edinburgh very considerable interest became early shewn for this new study, and a Phrenological society was formed under the auspices of Mr. Combe, whose talents appear “*digna meliore fato*.” This gentleman has designated Phrenology, the “greatest and most important discovery ever communicated to mankind.*” Would it not have been wiser to have withheld so high an encomium, until time had proved the science unerringly correct, and indisputably beneficial to mankind ? but we are all prone to laud our Hobby-horses to the skies ; it is human nature. At the same time, Phrenologists might have

* System of Phrenology by George Combe.

paid rather more deference to the opinions and labours of such men as Locke, Reid, Stewart, and others, than to say that up to *their own* time "the philosophy of man was a perfect waste, with not one inch of ground in it cultivated or improved.*"

In commenting on this modern theory, I can assure my readers, that no personal animosities have at all influenced me; and although I have found reasons for believing it erroneous and visionary, yet that my mind shall remain open to conviction, should any new and true light be adduced, calculated to obviate those difficulties which now surround it.

I may be allowed to remark, that the brain and nerves of all animals serve particular physical purposes, as sensation, motion, &c.; that they are essential to the well-being of the senses; and it would seem that these, in conjunction with some unknown operative principle, go to form the various instincts; and that instincts, with the addition of a reasoning faculty, and the gift of speech, compose the human understanding. My present intention, however, is not to engage in the disquisition of different metaphysical theories which have appeared in the world, as this would lead me too far astray from my present design; but these having been at one fell swoop

* Edinburgh Review Sept. 1826. Art. Phrenology.

condemned to utter worthlessness by the Phrenologist, I shall simply examine the claims which *he* has set up for superior accuracy and merit.

Most of my readers have doubtless seen either plates or plaster of Paris casts of the human skull, intersected with numerous lines and figures, denoting the different sites and boundaries of various organs. In this way the Phrenologist has divided each side of the head into thirty-five distinct compartments; one side being said to afford an exact counterpart of the other. Each of these compartments represents a separate organ or faculty appertaining to the same sized portion of brain which lies immediately under it; not a superficial layer only, but the whole substance of that extent and form down to its base. "Many people think," says Dr. Spurzheim, "that because the organs are marked on the surface of the skull, that they are really situated on the surface of the brain, immediately below the place marked; but the *organ itself occupies the whole of that part of the brain situated below the marked place.*"*

This declaration conveys an idea that every organ runs a vertical course; if so, I aver that the anterior, lateral, and posterior organs can have little or no brain. On the other hand, should the anterior, lateral, and posterior be intended to pursue a horizontal direction, then

* Dr. Spurzheim's 3rd Lect. Lancet, Vol. vii.

these must woefully break in upon the brain of those which are situated on the summit of the head, since they must take a perpendicular direction, and, as we are told, quite down to the base. So that although this nice apportioning of brain to each organ from superficies to base, may appear very plausible on paper, and seem upon the surface of a skull quite demonstrative of a plurality of organs; yet when analyzed, there will be found a direct anatomical interference and contradiction to this dogma. Their classification of organs is into two ORDERS, called FEELINGS, and INTELLECTS; the former being subdivided into two genera, named *Propensities* and *Sentiments*: and the latter likewise into two, called *knowing* and *reflecting*. These form three groups on the Cranium. 1st, *Propensities* which are common to man and other animals, situated in the lower parts of the head, laterally and postèriorly: 2nd, *Sentiments*, a few of which are common both to man and beast, occupying the central and upper stories of the head: and 3rd, *Intellects*, taking possession of the forehead.

Each organ is considered as being endowed with an *independent* action, and yet in some obscure, undefinable way to be under each other's *controul*, according to the superior degree of power or activity which either may happen to possess; such superiority being in great measure indicated by what the Phrenologists term full

developement or size, which causes a prominence of the skull over any organ that is large, and partly by a natural language.

This view of the human mind is stated to be a science of *observation*, not made exclusively upon man, but drawn promiscuously from various kinds of animals, according to their known instinctive propensities suited the purpose, hence it is emphatically pronounced to be founded on *nature*: and from very many passages in the writings of Phrenologists, we are desired to go to nature, and make enquiries of her, to satisfy our minds as to the correctness or error of their views. To this request I most willingly accede, in order to discover whether nature and the Phrenologists are true to each other, or rather whether *they* have interpreted *her* so accurately, as to find her yielding them brains moulded into a congeries of definite organs, each answering the express purpose or function which *they* have assigned to it. They take for the ground of their argument, that in an animal body there is a distinct apparatus for each sense, as for sight, hearing, &c.; likewise peculiar organs for each secretion, as the liver, kidney, stomach, &c.; therefore say they, particular faculties, intellectual as well as animal, *must* be attached to particular instruments; from which deduction they began to parcel out the brain into so many distinct organs with separate functions, and as these are said to

proceed from the surface downwards to the base, nothing can more clearly imply a real divisibility of substance.

Their proof, then, of plurality of organs in the brain, is drawn from analogy with other corporeal parts. It is well known that analogical reasoning can seldom be depended on for the foundation of any science, and is not exactly the inductive mode of philosophizing recommended by Bacon.* An analogy, to be at all valuable, should bear a striking resemblance in the comparison; such however is by no means the case in the present instance. The organs of sight, hearing, and the different secretions, which have been adduced as analagous examples, are very unlike phrenological organs. Each of the former can with great ease be dissected from the body, and shewn as purely individual organs. Anatomists can also demonstrate every muscle in an animal; can divide, and distinguish one membrane from another; but the most expert dissectors of the brain, even Drs. Gall and Spurzhiem, (who I admit evinced more dexterity in this work than many others) have not been able to divide *it* into separate parts, answering to their mental faculties. They cannot remove organ after organ, clearly

* "But experience is by far the best demonstration, *provided it dwell in the experiment*, for the transferring of it to other things judged alike is *very fallacious*, unless done with great exactness and regularity." Shaw's Bacon, vol. 3. Aph. 70.

and distinctly, so as to present them to our view, like the eye, tongue, kidney, liver, or stomach; and no Physiologist presumes to recognize a variety of function, as proved, unless he can demonstrate a divisibility of structure.

Phrenologists attempt to defend this position by saying, that we must acknowledge hearing and seeing to be two very different functions, and yet that we cannot trace any structural difference of their nervous endowments within the brain. Certainly we cannot, for which reason we are not warranted in asserting that there is any; but we do perceive a very different mechanism or construction of each organ *outside* the brain, and there, I think, the chief distinction resides. I will ask any advocate for Phrenology, whether he might not with as much reason infer analogically, that because milk, bile, saliva, tears, and many other secretions are all different, there must be as many different kinds of blood to produce them? Will he say that such is the fact, when he knows the same arterial blood to be constantly and regularly supplied to every organ for preparing those divers fluids, and also that the only appreciated difference is found in their individual structure? If then one fountain of blood suffices to form different fluids, why should not one undivided brain be adequate to afford nervous influence for a multitude of animal and intellectual purposes? Seeing therefore no

proof of plurality of organs in the brain, deducible from their own data of anatomical analogies, I say that nature is at variance with this phrenological position. But supposing for a moment that the brain is divisible into a series of independent organs, I would ask any person of even common sense, whether it is at all probable, that the very limited number laid down by Phrenologists, can provide for the innumerable propensities, feelings, sentiments, and intellects of the human mind? A northern reviewer has very pertinently asked, why there may not exist three hundred and fifty, or three thousand five hundred, as well as thirty-five faculties to answer all the various tastes, habits, accomplishments, and propensities of man? The answer given, is, that action here is confounded with power, or faculty, for says Dr. Spurzheim "a small number of powers may produce an infinite number of actions by their combinations,"* and he adduces the alphabet as an illustration of the power of numerical increase by combinations, and concludes by observing "I see no reason for believing therefore, that there are too many, or that there are not enough."† This being his opinion, it appears rather singular that after the whole superficies of the skull had been preoccupied by thirty-three organs, he should *think* more necessary, and particularly that he could possibly find room for

* Lect. xiii. Lancet.

† Lect. xiii. Lancet.

them ; yet he afterwards added *two*, and hence we may conclude that room will easily be found for others, when future discovery shall produce them. One of these newly discovered organs, called Marvellousness, is situated on the head, at an angle where the organs of Ideality, Hope, and Cautiousness meet, so that one or other of these must have surrendered a portion of brain, or each subscribed a corner to make up this marvellous faculty. Without enlarging upon this principle of accommodation, I am quite at a loss to perceive any analogy between the alphabet and the human brain ; the one, arbitrarily composed of twenty-six letters, and of human invention, the other, one and indivisible in nature. The idea likewise of combinations between different mental organs, in order to form new actions, is quite incompatable with that anological reasoning which Phrenologists took for their guide, since we discover no combinations among the corporeal organs in order to produce new functions, each having a specific duty to perform. Do any two organs of the senses combine to form a third function ? or any two secreting organs to make a new fluid ? Why then should the phrenological claim such a privilege ? Let us however bring this combining power to another test, and see whether these thirty-five faculties are all-sufficient. We observe among them an organ called Philoprogenetiveness, denoting the

love of parents for their offspring, an instinctive feeling belonging to man and other animals, which nobody questions ; but nature has endowed us with another feeling equally undeniable, instinctive, and strong ; namely, *A love of children or offspring for their parents* ; yet the Phrenologists have not afforded us any organ to answer it, and I challenge them to produce this feeling with any combination of their famed thirty-five. Fraternal love is another equally distinct, natural feeling ; but they have given us no Philadelphic organ, neither will any two or more combined, produce it. A portion of brain has been discovered for a new organ called Mirthfulness, but other passions, equally influential, as sorrow, fear, anger, revenge, envy, hatred, malice, &c. have none allotted to them in this new enclosure act ; nor will any combinations of others suffice to form them. This combining principle also tends to undermine the very foundation of their system, which declares, that every faculty or “*particular understanding*” must have a “*particular instrument*” to represent it. By this instrument they mean a portion of brain, which cannot be obtainable upon their combining plan, every inch of it being previously engaged by the thirty-five organs. It seems therefore absurd, to suppose that these thirty-five organs can engender every other animal and intellectual feeling, unless the composite faculties are allowed to

be brainless, a thing in direct contradiction to their own rule.

In support of this dividing system, we are told, that "the doctrine of plurality of powers is very ancient,"* that Philosophers have not been satisfied with one single power of the mind, but have divided them into imagination, memory, judgment, association &c. True, they have admitted these diversities of operation, but always considered them as so many attributes, states, or modes of acting of an *entire brain*, and never dreamt of assigning particular portions of it to each. They saw a reflecting or reasoning principle at work upon every minute occurrence afforded by the external world through the medium of the senses, and formed their opinions from the resulting phenomena; for not being able to find any division of the brain into organs, they did not allow themselves to be borne away by visionary hypotheses upon the existence of such a structure.

Another strong unanswerable argument against plurality of organs is, that all consciousness is *single*. We cannot imagine or think of two things at the same instant of time, neither can we reason upon two subjects at once: for however rapid the transition from one thought to another, we are always *conscious* of that trans-

ition ; and it matters not whether the subject be trivial or momentous, simple or complicated, the whole mind must be employed in thinking of it. If such were not the case, if separate parts of the brain were endowed with separate and independent intellectual faculties, we should have a right to expect the power of employing as many of them as we please at the same moment : Further, was the brain in truth composed of distinct organs, we ought not by any analogical reasoning, to find the whole of them affected, when any individual becomes injured. Thus facts shew us that one eye, one ear, one kidney, or one limb may be affected, or even lost by injury or disease, without the other at all suffering ; but what is the case with respect to brain ? here the analogy will not obtain. Remove a portion of the skull over whatever *assumed* organ you please, press upon the brain beneath, and instantly all consciousness disappears ; *every* mental faculty becomes inert, and the person falls senseless to the ground. Take away your pressure, and both the intellectual and animal powers return. Surely, upon the phrenological principles of plurality of organs extending from the surface of a brain to its base, of there being a duplicate of each, of their possessing an independent action, we have a right to anticipate a very different result ; for example, if the organ of language was pressed on, the person ought only

to lose the power of uttering any tongue that he might have acquired; if number, only the power of calculating; or if tune, that it would only spoil his fiddling: but not finding this partial effect, we are justified in doubting, and almost denying, the truth of the whole system.

Exclusively of the arguments already adduced against plurality of organs, I must not omit to state, that by their own admission great discrepancy of opinion prevails among themselves, as to the number, identity, and application of faculties. If you compare the thirty-three organs of Dr. Gall with Dr. Spurzheim's thirty-three, you will find a remarkable difference. Gall has delineated an organ of tenacity of life—of the instinct of self-preservation—of the choice of nourishment—organs of the external senses, and of personal memory;—all of which are consonant with what we observe in nature, so far as regards the actions themselves; but neither of these are adopted by Dr. Spurzheim; whilst his organic vocabulary of Conscientiousness, Form, Space, Resistance, and some others, find no place in Gall's list. Gall denied an organ of Hope, Dr. Spurzheim (as we might expect) entertains it strongly. Gall spoke of an organ of Religion and Holiness, asserting that it indicated a proof of God's existence; whilst Spurzheim calls the same Veneration, but thinks that it is not *necessarily* indicative of a

religious feeling. He says, "I have seen, however, individuals who have had this cerebral part very much elevated, and yet have not been *religious* ;"* and again, the middle part (meaning the organ in question) is that which gives rise to feelings moral and religious, to pay respect to *beings around us*, and pay veneration to *supernatural beings*, or to saints." Some may be disposed to deny any difference of opinion on this important organ, between these two eminent Phrenologists, Præceptor and Pupil ; but I wish them to consider, that a purely religious feeling, or worship of an Almighty Creator and Ruler of the world, as intended by Dr. Gall, is totally different from that which pays homage to beings around us ; and on beholding a finely developed organ of veneration, we must be quite at a loss to know whether its possessor entertains any religion, and a belief in holy writ, or whether all his veneration is to be expended upon *sublunary mortals*, in other words whether it is *idolatrous*. To admit an unison of sentiment upon this organ between the two Professors, is allowing too great a latitude of function ; and moreover when I read that "we may *steal* from others, and *cheat* others, and yet be *benevolent*,"† I am utterly at a loss how to reconcile such glaring contradictions and perversion of language. By this phrenological

* Lect. viii. Lancet. † Lect. viii. Lancet.

dialect, if we meet with a person who has the organ of benevolence fully developed, (and whom we ought, in consonance with the true meaning of languages, to consider kind-hearted and *well-disposed*,) we must not be at all surprised at his stealing our purse. But how are we taught to reconcile the differences of opinion entertained by Phrenologists? In the following loose and unsatisfactory language: "If Dr. Gall chooses to say *one thing*, and I choose to say *another*, a third might say, I will see for myself."* "If we differ in opinion with each other, we must go to nature."† This, to me, is quite decisive of the imaginary hypothetical texture of Phrenology. I hold nature to be true and unvaried in her works; therefore, it is quite impossible that in any particular organization, she can be *one thing* to Dr. Gall, *another* to Dr. Spurzheim, and a *third* to Mr. Coomb; all of whom differ upon the organ of Inhabitiveness.

Another argument brought forward in favour of plurality, is, that "a man may be insane on some points, and yet remain in full exercise of the intellect upon all other subjects,"‡ as illustrated by instances of madmen, who "hear angels sing and devils roar, &c. only on one side"|| of the head. Inimitable elucidation this!! on which I

* Lect. iii. Lancet. † Lect. ix. Lancet. ‡ Lect. ii. Lancet.

|| Dr. Spurzheim's work on Phrenology, 2nd edit. 1815.

have merely to remark, that insanity of every kind, is an unnatural, morbid state, and quite inadmissible as evidence of the truth or error of any mental manifestations. A court of law never entertains for one moment an idea of correct evidence being give by a lunatic of any description, and a Philosopher never acts wisely in bringing him forward to substantiate sound doctrines.

I have hitherto been combating the principal tenet of Phrenology, namely, plurality of organs, and endeavoured to shew that it has no foundation either in anatomy, physiology, pathology, or analogy. Another tenet has been broached equally hypothetical ; they assert that the brain is *double*, yielding a duplicate of each organ, inferred by their favourite mode of reasoning, from their being two eyes, two ears, and likewise from the nerves being given off in pairs. By this ingenious device they in some measure overcome an argument, which must otherwise completely refute their system, (to wit) that considerable portions of brain may be lost from injury, without any apparent diminution of intellect upon recovery ; and their explanation of this is, that the *corresponding organs* on the opposite side remain sound. There are however no solid arguments in favour of a double function of the brain, nor even of a perfectly double structure. True it is, that the brain *apparently* consists of two halves ; that it sends off from its base the

nerves in pairs; one to each eye, to each ear, and so on; but it should be particularly borne in mind, that there is an union or commissure between the two halves, and that their function is single. The motion of both eyes is quite synchronous, and their vision *one*; we have no *double* hearing, smelling, or tasting; and it is not because one eye may be lost, or one sense of hearing gone, or one limb removed, that we are to infer a double structure and action of the brain; for the analogy to be just, should extend farther. Thus every one knows that man can exist and officiate with only one eye, one ear, or one arm &c., and since Phrenologists inform us that when one or *more* organs on either side of the brain are lost from injury, their *fellows* supply the defect, they ought upon this principle to make him exist, and perform all intellectual and animal functions with only one *half of his brain*; when they can demonstrate this, by showing me the man that under such a condition can "live, and move, and have his being," all my opposition shall cease. They seem to have erred at the threshold, in comparing an organ which is apparently composed of two halves, with those that have duplicates, and many examples of each are observable in an animal frame. To the former belong the heart, tongue, nose, skull, and its contents the brain: to the latter arms, legs, eyes, and ears. So that the two classes of organs are very dis-

similar and distinct from each other. Dr. Spurzheim informs us that "one of Gall's friends, a Physician, often complained that he could not think with the left side of his head; the right side is *one inch higher* than the left."* Before this I never heard of any sane person making so singular a complaint, and it would have been desirable to know what his peculiar sensations were, which led him to make this discovery. If it depended upon the less perfect developement of organs on the thoughtless side, its existence should have been perpetual, but we are not informed that this was the case.

Two other anatomical objections to this system demand our notice; the one is a difference of parallelism between the brain and outer surface of the skull, and the other a difference in form, (often very remarkable) between the two halves of a skull, supposing a mesial line to be drawn longitudinally from the nose backwards to the nape of the neck. As regards the first objection, I must be allowed to state, for the information of non-medical readers, that the skull is composed of two tables or plates of bone, united to each other; consequently, the surface of the inner plate cannot possibly be parallel with that of the outer, any more than the least of two circles can be parallel with the larger; but I shall not cavil

Dr. Spurzheim on Phrenology, 1815.

about the difference that obtains between the brain and superficies of the skull at many parts, because it is slight; yet in *one*, where several intellectual organs are situated, there is so striking and unequivocal a disparity of parallelism, that it cannot pass unheeded. This part is the forehead, immediately above the nose, where the two plates or tables of the skull are separated from each other, thereby forming cavities called by Anatomists *frontal sinuses*. These cavities are of different dimensions in different persons, and often of considerable size. Dr. Spurzheim himself admits his having seen them “an *inch*”* in diameter, which must have separated the internal and external plates to the same extent, consequently the brain must have been at a like distance from the outside of that skull; and since brain, and not bone, is the seat of intellect, how can it be possible to know with precision, or any pretensions to accuracy, its actual developement at this part? and yet directly over it are placed several organs. I am not acquainted with any anatomical fact which speaks more strongly against Phrenology, and even Dr. Spurzheim’s admissions on this part, speak volumes. He says, “There are difficulties above difficulties in the forehead.”† “In judging of the powers situated hereabouts, there is the difficulty of the frontal

* Lect. xi. Lancet. † Lect. xi. Lancet.

sinuses to overcome ; I grant that, but they do not interfere with the organ of Colouring, although *they do a little* with Individuality and Size." Just in proportion to the magnitude of these sinuses, will the brain be *nearer* to or *further* from the outside of the head, from which alone we can possibly judge of large or small development. With a full development or prominence hereabouts, the Phrenologist is bound to admit, consonantly with the terms of his art, (since *a priori* he cannot know the size of the frontal sinuses) that the organs under it are well developed, although it might be that the *brain* does not approach within *an inch* of the surface; whilst on the other hand, there may be scarcely any fullness here, when great development must be denied, although the *brain* may be found *nearer* the surface, and, in fact, be better developed than in the former case. With this structure in the forehead, how is it possible to judge from mere external inspection, whether the brain protrudes much or little ; and as the superficies of a head is made the Phrenological index of its brain and powers within, was it not preposterous to place organs in a part of such variable and uncertain structure ? Ingenuity is seldom wanting to support favourite theories, or overcome difficulties. A staunch supporter, and author of illustrations of Phrenology, admits that in marked cases of large frontal sinuses, the external table

of the skull is not a *correct* index of the shape or quantity of brain behind it; but he asserts, that "while a man is in the prime of life, and healthy, and manifests the faculties of the frontal organs, such a cavity seldom exists. It is *only* in old age, or in subjects that have not manifested such faculties as are referred to, (or have manifested them only in a low degree, owing to disease or natural conformation) when it is *formed*; the *brain retiring*, and, by a wise provision, the *inner table* of the skull *following it*." !!*

I have no reason for calling in question the learned author's abilities, and general scientific attainments, but I presume that he is no practical anatomist, otherwise he would have known that although the frontal sinuses are sometimes small, and occasionally wanting, yet that they are neither peculiar to old age, (being fully developed in the vigour of life) nor are they by any Anatomists accounted a diseased structure. He would have known that purely on account of their general occurrence, medical students are always taught to expect them, and regard them as parts of the skull, upon which they are not to apply an instrument used in trepanning: and as to the brain retiring, and internal table of the frontal bone following, I believe it to be purely hypothetical. I never heard or read of such a thing

* Sir G. S. Mc Kensie's Illustrations, p. 228.

as a retiring brain, even in old age ; and why it should recede from the forehead, in preference to any other part, it is impossible to imagine, since we very frequently observe the *intellects* remain strong, and clear, after the *animal faculties* have become very enervated and decrepid. If the brain does shrink or become somewhat less in old age, which I will not dispute, we should rather expect to find its diminution general ; consequently, if nature was desirous of following it with the inner table of the skull, she would most probably cause a *general*, not partial separation of the two tables, or else an universal *thickening* of the bones. The contrary of which almost invariably occurs in old age, the intervening cellular part, or what Anatomists call the diploe being then obliterated. On going to comparative anatomy, we observe the *young and healthy* calf, sheep, and other brute animals with conspicuous frontal sinuses, and we may presume that in these the brain will not be deemed retiring, since old age is esteemed a necessary condition for that process. I therefore maintain that the frontal sinuses are a perfectly natural structure, neither morbid, nor peculiar to old age, nor to those who have not manifested the faculties prescribed to this part by Phrenologists. Should that view of the development of the frontal sinuses be correct, as recently given by Dr. Milligan in his edition of

Magendie's Physiology, it is very clear that old age has nothing whatever to do with these sinuses.* The last anatomical objection that I shall adduce, is the difference of size and shape which often exists between the two halves of a skull. This I admit is frequently small, but in very many instances remarkable: as a case in point I shall adduce Dr. Gall's medical friend, who could only think on one side of his head, and the right side of which was one inch higher than the left; and unless my eyes greatly deceived me when at Edinburgh some years ago, an eminent pillar of this new school appeared to have a most marked difference between the two sides of his head posteriorly. To those who entertain the opinion that the two halves form one brain, with an unity of action, these differences are of no moment; but to the Phrenologist, who advocates a duplicate of organs, and that those on one side have an *accurate* counterpart in the

* "The developement of the internal table of the skull, and consequently of the frontal bone, follows the developement of the *brain*; but the developement of the external table of the frontal follows the developement of the bones of the face. Now, the brain, we have seen arrives at its full size in the *seventh* year; which therefore, is the period of completing the developement of the frontal bone. But the bones of the face continue growing to the *twenty first* year; and hence it is, that Anatomists find the dimensions of the *frontal sinuses* go on increasing to that year; and the same authors generally find the *sinuses* commence at the *seventh* year."

Vide Medico-chirurgical Review, April, 1829.

other, it must be a matter of regret and embarrassment to find a want of uniformity between both. To detect these differences of shape and size, a front or back view of a person's head is necessary.

In order to form a more mature and correct judgement of the merits of this conjectural science, a few more particulars remain for observation. These are, *First*, the influence of size or full developement of organs, together with the great disproportion of brain observable between Intellects and Propensities: *Second*, the admission of brute instincts and propensities in determining the mental faculties of man, as exemplified in many organs; and *Third*, the application of Phrenology to education and the callings of life.

In tracing the Phrenologist's reasoning with respect to the influence of size of brain, we discover many discrepancies and apparent contradictions: at one time he labours to prove that size is of the first consequence, and at another of little moment.

Dr. Spurzheim observes, "I shall be able to shew you, that a person having a very *small brain* does not and *cannot display much mental power*;"* in illustration of which, he produced models of two brains of idiots very small, and a cast of a *supposed* head of Lord Bacon very large.

* Lect. i. Lancet.

I will appeal to the good sense of my readers, and ask whether this offers to our view that just comparison, on which we can form a correct judgment; for original deformity or disease to be placed by the side of soundness and great perfection? In fairness, ought it not to be a comparison between small and large heads, where the owners of both have not evinced any signs of mal-formation or idiotcy? Independently of this, *all* idiotic heads are not deficient in frontal developement, (I know an idiot with a very well formed head) and there is also much diversity in their size and shape.

This unjust comparison brings to my recollection another very similar. One evening I visited the Phrenological Society of Edinburgh, and there were exhibited by the side of each other, for the sake of contrast, and as evidence of the correctness of the science, three skulls; an idiot's, a Carribbee's, and that of some fully developed unknown. The Carribbee's head being flattened on its forehead was exhibited together with the Idiot's to exemplify deficient or total want of understanding. It is however an accredited fact, that certain of the Carribbee tribes are in the habit of making the forehead flat by artificial pressure during infancy and childhood, yet without loss of intellect, and I have seen such a head of a very clever Carribbee Indian chief; the exhibiting them therefore as exemplars of weak minds

was incorrect. Dr. Spurzheim seems inclined to distrust the accounts of any artificial cause of this depression, and cannot well imagine how pressure can be applied to a forehead by any apparatus without producing a counter-pressure, and counter-flat, on the back part of the head. He says "If there be pressure applied to the forehead, I should like to know how the apparatus is applied without producing counter-pressure? I find the anterior part of the head much depressed, and I find the posterior part very much developed, now if a string were tied all around the head, it must prevent developement all around. I cannot conceive of there being pressure without there being counter-pressure."* Unquestionably pressure requires counter-pressure, but each may be of similar or dissimilar kinds, and very little mechanical ingenuity is requisite to effect that pressure and counter-pressure which will produce exactly what Dr. Spurzheim represents in his Carribbee heads (namely) an anterior depression with a posterior developement. If you apply a ligature of tape tightly round a head, it must inevitably produce equable pressure on all parts, and of course equally prevent developement; but if a flat unyielding piece of wood or other solid material of a length greater than the width of the head be laid upon the superior prominence of

* Lect. 2. Lancet.

the forehead, and if to the centre of this wood a narrow bandage be fixed and its ends carried round the head, over the ears, and tied at the base of the occiput, we shall produce a flattening of the forehead and a prominence or great developement of the occiput or posterior part, this being situated quite above the ligature. Without knowing precisely in what manner the Carribbees effect this change of form, there can be no difficulty in devising a mode, neither is there any necessity for entertaining an idea that it is natural, and consequently that their animal faculties so greatly predominate over their intellectual. In furtherance and in confirmation of this principle, the Dr. adverts to a difference between the heads of men and women, shewing by *Phrenological* admeasurement that the former are superior or stronger in the intellects, but weaker in the animal feelings or propensities, with the exception of those situated on the sides of the head. His expression is, "females often say to us, that we do not *feel* like them; and we reply, that they do not *think* like us."* "Now, if we look to the configuration of the heads of each sex, we find, that the heads of men are thicker on the sides than the heads of females, and longer from the ear to the top of the forehead; whilst the heads of females are flatter on the sides, and there is *a larger portion of brain from the ear to the occiput* than

* Lect. i. Lancet.

in males," where the organs of Amativeness, Combativeness, Philoprogenitiveness, Love of Approbation and Esteem, reside. We are here told in express terms, that there is less brain in the frontal region, and more in the occipital or posterior region of the head in women than in men; and since we are informed, by phrenological charts of the brain, that all the intellectual faculties are situated in the forehead, it cannot be doubted that female intellects are, upon these principles, held rather cheaply. I am not desirous that even to the fair sex, truth should be sacrificed to gallantry; but I shall endeavour to shew, that there is no solid foundation for the inferences which have been drawn from this supposed disparity of form between the two; neither am I inclined to consider these peculiar differences generally correct.

If we survey the whole range of animated nature, we perceive the heads of males and females alike in all respects but size, those of the latter being generally less, not in *individual parts*, but as a *whole*. For examples, take the following Genera; look at the difference of size between the heads of male and female rabbits, cats, horned cattle, sheep, and birds; yet are we able to discover any difference in their instinctive animal propensities, either in number or degree? Do we observe *male* birds or quadrupeds less amative, or combative than female? Certainly not;

but keeping to our own genus, which is far preferable in the comparison, do we find *women* more fond of approbation, more vain and conceited, more combative, amative, or philoprogenitive than men ? Undoubtedly not. The abundance of coxcombs and lewd debauchees, proclaim the falsity of this opinion. Does the mane of a lion, the beard of a man, or the variety and superior beauty in the plumage of male birds, alter or exalt the instinctive or mental powers above their female companions ? They serve simply as badges of distinction between the sexes, and are taken as such : wherefore then is a trifling difference in the size of head between man and woman adduced as a proof of difference in the intellectual powers, so disparaging to the female ? The general education of men and women is certainly in many respects different, which undoubtedly serves to modify their habits, manners, and mental endowments, but does there exist less aptitude in women to learn or to reason ? Were it not an invidious task I could mention numerous bright examples among the fair sex of superior genius, and intellectual attainments ; why then frame those distinctions, which do not appear founded in nature, and which daily experience contradicts. Great importance we find attached to size in many more of their arguments ; thus Dr. Spurzheim observes, “ You would not say that a man had a *villainously high forehead*, although you might

describe him with a *forehead villainously low*. Here are two skulls, one high and *large*; the other *small* and *very low*. Would you not say this (the least) represented the *ignoble* faculties? ”* Where shall we find a more uncharitable paragraph? the denouncing as villainously formed that forehead which happens to be “small and very low.” Who has fashioned every man? who has given one a low forehead, another a high, but the Creator? To attach infamy then to the structure of organs, is not impugning man, but his Maker. Man did not create them, he cannot alter them, and if they be formed for villany and vice, how can he change their functions, and direct them to virtue? Independently of this you will find in the charts every ignoble faculty situated on the sides and back of the head, how therefore can the forehead at all represent them?

Passing over for the present the *irresistible* action of an organ, I think it will be allowed that large size or its synonymism full development, is esteemed of the first consequence to a Phrenologist; that by it he essays to point out who is wise or foolish, and to distinguish a saint from a sinner. He has certain modes of measuring heads to ascertain the actual size of their different parts, and can tell us what he considers a tolerably de-

† Lect. i. Lancet.

veloped head should measure ; also that from a general developement "the finest heads may have no protuberances whatever ;* " and again "size must be considered in the examination of the head."† Does not all this shew that next to pluralities, size is a very essential part of this doctrine, and a most characteristic feature. ? We are told in one lecture, that "a very small brain does not and cannot display much mental power,‡ you will never find that those men who excel in mental powers, have very small brains," also "since men of great talents have larger heads than idiots, cannot we measure the *powers of the mind* by the size of the head ?" and a *supposed* head of Lord Bacon is adduced as an instance of immense organization of brain and mental power; yet in a succeeding lecture, we read that "you cannot go from one to another, and say, your head is larger than your neighbour's, hence you have more talents."|| And this forsooth, because they say, that you cannot from the "*absolute size* of the brain, judge of the qualification of mind."§ Yet what, I would ask, are "*small* and *large*," but absolute terms ? Was not Lord Bacon's talent thus measured, and his head selected for being *absolutely* immense ? and the "*small* and very low skull " as *positively* portraying the ignoble sentiments ?

* Lect. iii. Lancet. † Lect. i. Lancet. ‡ Lect. i. Lancet.

|| Lect. ii. Lancet. § Lect. i. Lancet.

I am inclined to suspect that Phrenologists in their various examinations of heads, have discovered many superior intellects and clever fellows with small or moderately developed organs, which would greatly tend to undermine their system, and therefore sought to modify the meaning of size. Be this as it may, they have thought it necessary to introduce a quality or condition of organ, tantamount to full developement, which is termed *activity*; a quality very undefinable, in the sense used, and difficult of detection, for we are told "the study of determining the nature of a function is more easy than it is to determine the degree of *activity* of a function. * "

Phrenologists we know profess to have learnt the former from observation and experience, but the latter we are left to discover by intuition, as they fail to acquaint us by what physical appearances it is to be known, simply observing that "different degrees of activity cannot be measured by size alone,†" seeing that a small muscle is often stronger and more active than a large one. If then brain and muscle will bear comparison, why may not a small brain be stronger, more active, and more intellectual than a large one. But we often find them identifying *size* with *activity* although they deem them totally distinct. "Persons come to me (says Dr. Spurzheim) who

* Lect. ii, Lancet. † Lect. ii, Lancet.

have not studied the subject much, and say, Have I such an organ? have I such a power? I always say yes, that is true, that organ does exist, but the question should be put in a phrenological way—Have I this or that organ *small* or *large* in proportion to the other organs? ”* What can here be meant by the terms *small* and *large*, but activity in the latter and want of it in the former, which is fully admitted in the following sentence: “In a general way we should say that these parts were *large* in proportion to the other parts of the head of this individual and *therefore more active* ”† and their great object in examining the head of a Murderer (who must have the organ of destructiveness active) is to learn whether this organ be large or fully developed; and if they find it so, the fact is proclaimed, and they triumph exceedingly at the precision and accuracy of their science.† I learn from good authority that they were in the high expectation of finding a huge destructive faculty in the head of that cold-blooded murderer Corder, but alas! it was not there. Another fiend-like murderer

* Lect. 3. Lancet. † Lect. 7 Lancet.

‡ “Therefore finding one part *more developed* than another, you may *be sure* that the fundamental power situated there will be *more active* than another.”

“What has hitherto been said, is merely the physiological part of phrenology, namely, that the *size of the organ* is merely sufficient to determine the *activity*.” Lect. 16.

has since been dissected at Bury Hospital, in whose head the organ in question was *very small*.

It appears to me that more consistency, perspicuity, and skill would have been shewn, had not Phrenologists, endeavoured to establish a distinction between power and activity, but, by aiming at this, and alleging that organic development might be large, yet its activity small, they have mystified the subject, and created a labyrinth of difficulties without means of extrication. I firmly believe that if you were to ask the most expert Phrenologists to recognize the activity of an organ, without any consideration of its size, that he would be unable to answer satisfactorily. He tells us that peculiar "bodily constitution, exercise of the individual parts destined to certain offices, will produce a greater degree of activity in them"* and that we are to learn *its presence* from natural language: but this is to very little purpose, if he cannot point out to us the physical condition of those parts, so as it may be cognizable to our senses; because without it we are left to *inquire* respecting the individual's constitution, degree of exercise of certain organs, his education, and situation in life; and since all these essential points can only be learnt by inquiry, where is the great utility of burthening our memories with this science of protuberances? From time immemorial the true

* Lect. ii. Lancet.

characters of men have been learnt from observation and inquiry; "tell me what company a man keeps, and I will tell you who he is." The least therefore to have been expected from this "most important discovery," was, that we should be able to dispense with all such preparatory scrutiny of character, and unerringly to detect the presence of talent, vice, or virtue, in all degrees, by a simple survey of the head.

It appears that Dr. Gall made this practical use of his art, for we are told that "he was bold enough to address every person in whose head he observed any distinct protuberances."* So that HE determined the actions by the protuberances. From the guarded circumspection of the *present* Phrenologists, I should suppose that Gall had fallen into errors, in not finding character and prominence to correspond to his wish, and that he had occasionally mistaken his man; at all events we know that now they do not venture to speak of the application of organs, without first learning the situation of life and education of a person, in other words, when they have heard his character they know it.† They however en-

* Dr. Spurzheim's Work 1815.

† "Suppose I see an individual with certain intellectual powers strong; if I know *certain conditions*, then I may speak of the application, but without knowing the situation in which the person lives, or of the education he may have received, I cannot speak of their application. Lect. xvi. Lancet.

ertain private opinions, and give shrewd guesses. If a combination of full developement is perceived in the organs of self-esteem, firmness, and love of approbation, then they consider the possessor to be very conceited, and touchy, and that one must take care of him in society. If they see a person with a large organ of self-esteem what do they learn from it? "I know (says Dr. Spurzheim) that the person has a good opinion of himself, and that is all."*

To aid and illustrate phrenology they have brought physiology, which Dr. Spurzheim prefers calling "natural language." This language may, and often does prove serviceable to us in the study of character, but although so much has been written on it by Lavater and others, who ever thinks of confiding on its accuracy in the present artificial state of society, and from the difference it assumes in different countries: The natural language therefore of man must be at all times most fallacious, particularly as he can dissemble and play the hypocrite. In applying this principle to the different organs, Dr. Spurzheim when speaking of Secretiveness, says, "How can I know when this power is active? By the natural language, by the appearance of the whole countenance; such a person looks sideways, looks about the room, but never looks you in the face."† Very plausible indeed!

* Lect. xvi. Lancet. † Lect. xiii. Lancet.

but may not these same facial signs arise from modesty, clownishness, or sheer stupidity ? and when he tells us that such a person "will avoid company, and if brought into it will soon try to get away,"* I should say that these traits are much surer indications either of sheepishness, or excessive timidity, of very little knowledge of society, or intercourse with the world ; than of *cunning* as Gall would have it, or a tendency to *conceal* according to Dr. Spurzheim's idea. In illustration of this faculty the Dr. adduces the dog who finds a bone, and who "after he has satisfied his appetite, will conceal it until a future day," † also the man who can keep a secret : now neither the dog nor man may be one iota more averse to company, or try to avoid it for having these propensities, and hence, the rule given for ascertaining their activity by natural language, will not apply.

Mr. Combe has been very erudite in endeavouring to illustrate the difference between power and activity. He first appeals to mechanics, and says "The balance wheel of a watch moves with much rapidity, but so slight is its impetus, that a hair would suffice to stop it ; the beam of a steam-engine traverses slow and ponderously through space, but its power is prodigiously great." ‡ He then proceeds to muscular mechan-

* Lect. xiii. Lancet. † Lect. vi. Lancet.

‡ System of Phrenology by G. Combe.

ism, and observes that, "The Greyhound bounds over hill and dale with animated agility; but a slight obstacle would counterbalance his momentum, and arrest his progress. The Elephant on the other hand, rolls slowly and heavily along; but the impetus of his motion would sweep away an impediment, sufficient to resist fifty Greyhounds at the summit of their speed." Lastly he appeals to mind, and instances orators who have great "fluency of elocution" and "quickness of parts," but who are "neither impressive nor profound," as examples of *activity* only; and slow but impressive and energetic speakers as specimens of *power*. All this may be very imposing, but is the logic sound? If I can shew the converse both mechanically and mentally, that power may be united with, and result from *activity*, also that slowness is not an essential requisite of power; Mr. Combe's reasoning must be esteemed unsound, and we have only to admire his rhetoric, which I do in sincerity. In opposition to his rapid balance wheel of the watch, which may be stopped with a hair, I will adduce a cannon ball, which, rolled *slowly* onwards exerts very little power and may be stopped with a straw; but give it activity from the cannon's mouth, and who will deny or be able to resist its power? Again, are not *activity* and immense *power* combined in the *rapid* escape of steam from the boiler of a steam engine, which puts *the slow and pon-*

derous beam in motion ? And now with respect to animal mechanism. If Mr. Combe's Grèy-hound is *active* with little *power*, is not my Lion or Tiger active with great power ? If his Elephant is an example of *slowness and power*, is not my swift-swimming, tide-resisting Whale an example of *activity and power* ? I can even accommodate the Phrenologists with specimens of mind the reverse of Mr. Combe's, and bring to their recollection orators who are both *profound* and *impressive*, yet most rapid and fluent in elocution. Lord Holland, Mr. Jeffreys, and the Rev. Robert Hall are illustrious examples of great mental *power* combined with much *activity* or fluency of speech. From this it will be perceived that neither upon mechanical nor even mental principles is Mr. Combe's logic quite sound and unanswerable ; and to bring forward the manifestations of mind, which never have been proved to be mechanical, in comparison with pure mechanical principles, is an illegitimate and weak mode of philosophizing.

Whilst engaged on the influence of size in individual organs, I wish to make a remark on the comparative magnitude of the three great classes, Intellects, Sentiments, and Propensities. In looking at the head phrenologically divided into organs, our attention cannot fail of being arrested by the great disparity observable between these three classes. The Intellects, amounting in

number to nearly one half of the thirty five, do not occupy apparently more than one fourth, certainly not more than *one third part* of the whole skull. The brain allotted to the sentiments and animal faculties is very considerable, but to the intellectual, whose important and difficult duties we presume would naturally require an equal if not superior portion, exceedingly small assignments have been granted, and they appear inconveniently crowded about the eyebrows and frontal sinuses. This glaring disproportion has always surprized me, because I cannot discover any sound arguments to support it. Shew me, on removing the skull, that the whole brain is divisible by the knife or any other instrument into thirty-five distinct organs, and that fifteen or more of these are discoverable in that part given to the forehead, and I shall not require further evidence: but the assuming such a division, and the bare declaration that "it is necessary to divide it (the forehead) into smaller portions than we have done the other parts of the head,"* without a shadow of reason in support of it, does not satisfy my mind.

For not believing this doctrine orthodox, I may be pronounced very sceptical, or my intellects may be still more confined and crowded than Phrenologists have described those of

* Lect. x. *Lancet*.

mankind in general, or they may be more obtuse and confused ; still, without much stronger evidence in favour of it than has hitherto been adduced, I intend remaining a sceptic.

Having disposed of size, I shall advert to the use that Phrenologists have made of brute animals in the formation of their system, and which appears to have been carried to a ridiculous extreme. When we compare man with brutes, in the common possession of certain sentient and instinctive principles, the comparison is legitimate and just, because we know the facts to exist ; but when we proceed to assert without proof, that particular parts of a brute's brain answer to certain organs, and impel him to perform certain known propensities ; and that if man has any thing like such a conformation of brain, as shewn by the head, he must also have the same propensities ; then I say the comparison becomes gratuitous, weak, and unphilosophical.* I shall exemplify this in one organ only : "ex uno disce omnes." Dr. Gall had observed in carnivorous animals, more especially in the

* "Urbem, quam dicunt Romam, Melibæe, putavi
Stultus ego, huic nostræ similem, quò sæpe solemus
 Pastores ovium teneros depellere fætus.
 Sic canibus catulos, similes, sic matribus hædos
 Noram : *sic parvis componere magna solebam*.
 Verùm hæc tantùm alias inter caput extulit urbes,
 Quantum lenta solent inter viburnâ cupressi."

Virg : Bucol : Ecl : I.

accipitrine or hawk genus, a broad head and full developement over each ear, and he set it down as being that portion of brain which furnished the propensity to kill; and afterwards observing a fullness of head over the ears of several murderers, he at once concluded that this must be identical with that of carnivorous animals, and forthwith called it the organ of murder. I ask whether he had any sound data for declaring that carnivorous animals killed others in consequence of their having a full developement of head over their ears? How could he know the one to be a *cause* of the other? Who or what informed him that his conclusion was just? No mortal could, and analogy here will not bear him out; for if we examine the Heron genus of birds, which are as decidedly destructive of animal life as hawks, we shall find no such corresponding breadth of head at this particular part, but on the contrary a narrowing.

To strengthen this opinion of his preceptor, Dr. Spurzheim has cited many destructive carnivorous brutes, such as the wolf, fox, polecat, weasel, and others, which are unquestionably broad at this part; and as a contrast he adduces the heads of hares, rabbits, and roes, which are herbivorous. From this disparity between the two examples, one might at first view be induced to imagine the Phrenologist correct; but on reflection, I think we can discover a more just

and probable reason as well as necessity for greater developement or width of head in the carnivorous animals. On considering the instinctive appetite of these rapacious creatures, we find it solely for flesh and blood ; to obtain which they must often have to contend with other animals of much superior size. For example, weasels, destroy rabbits and hares, though very inferior to them in size. This then seems to imply a need for some remarkable muscular power or appropriate weapons, or both ; and in examining these destructive animals we find both. The falcon tribe require great strength of jaws and neck, to hold and tear in pieces their prey. The wolf, fox, weasel, and polecat depend upon these powers for similar purposes. Now, we invariably find, that where great power is required, more numerous or stronger muscles are essential, the attachments of which necessarily require a broad surface ; and here we have it for receiving those muscles on the back part of the neck, which are used for bearing off prey, for tearing it pieces, or for shaking it ; and illustrations are seen in the tiger, which with the greatest ease bears off a man in its mouth ; in the kite, whilst tearing in pieces a lamb ; and in the dog, which gives its victim a most terrible shake, as well as gripe. The herbivorous animals on the other hand, as the hare, rabbit, and roe, (Dr. Spurzheim's own selection) do not require great

strength of muscles in the posterior part of the neck, and consequently there was less breadth of head necessary for muscular attachments. Few animals are more weak in the neck than the rabbit and hare, and their heads are narrow, whilst the cat, an animal of no larger size, has great power of neck, and a broad head. This explanation adapts means to ends, and appears more rational than the one given by Phrenologists, who must be as ignorant of what part of brain gives the impulse to destroy, as the animal itself. But a fact which has still more strongly impressed on my mind, the delusion of comparing man with brutes in mental organs, more particularly in reference to the one under consideration, is this; we never find it to be the natural inclination or act of any carnivorous animal, however savage, to destroy its *fellow*; but it kills other animals in order to satisfy the appetite of hunger implanted in its nature, and not from any *evil principle*: this therefore does not bear the most remote comparison with the *murderer*. He destroys his fellow-creature, not to satisfy hunger, but either under an insane impulse, or what is far worse under a most depraved moral principle; from a want of that fear and love of God, which causes him to despise his commandments.

Man, in the commission of this foul crime, has no example set him by the brute creation. I may perhaps be here reminded, that the rabbit some-

times makes away with her young ; it is true, but this cannot arise from her having the organ of destructiveness, which is denied her by Phrenologists themselves, and most school-boys know that this proceeds from their officiousness in disturbing her when approaching the period of parturition. I will ask any candid person whether the destruction of life by a carnivorous animal, committed in order to satisfy the call of hunger, and the murder of man by man, bear the least analogy to each other ? and whether if Phrenologists knew the seat of that organ in brutes which impels them to destroy, as well as they know their alphabet, they had any reason for identifying that action with murder ? To the comparison of man with man mentally, I cannot possibly entertain an objection, but for the reasons which I have just stated, I enter my protest against instituting analogies between the reasoning faculty of man and the instinctive propensities of brutes, for the purpose of founding a system of mental philosophy.

It will probably excite the surprise of my readers to hear that Phrenologists do not always consider the organ of destructiveness contributory to the perpetration of murder, at least they do not always look for its being *large*, but according to circumstances, they bring others in as accessory, even those of a superior order. "If I am told (says Dr. Spurzheim) that an individual

has committed murder during his insanity, do you suppose that in every case I should look for a *large* organ of destructiveness? I would enquire as to the *motive*, and if I found that a person had dispatched another *in order to save him eternally*, having sent him away that he should *sin no more*, I should rather look for the organ of *conscientiousness to be large* than that of destructiveness."* Upon this principle, the organs of veneration† and benevolence may be similarly affected and equally implicated in the praiseworthy deed of saving sinners eternally, by despatching them, and in this most singular way be still instruments of good: so that three of the most humane and exalted faculties of our nature, may by *phrenological reasoning*, be made *indirectly conducive* to a most horrid act: three organs whose excellent functions have obtained the title of controuling powers, inasmuch as they are said to counteract the evil tendency of those that are base, bad, and inferior. Immediately the Doctor admitted the presence of insanity, he should have disregarded every species of organic development, whether small or large. Can we for one moment calculate upon what actions a madman will commit, or when and how he will commit

* Lect. xvii. Lancet.

† "If persons labour under religious derangement, as is sometimes the case, then the *organ of veneration will be found large*." Lect. xvii. Lancet.

them ? Certainly not. Consequently no dependence can or ought to be placed on the *motives* which he himself assigns for those actions, and hence it must be esteemed no great mark of wisdom to be inquiring after them.

I am now led to the consideration of another Phrenological tenet, namely, the presence of a modifying, antagonizing, or correcting principle, by which some organs are said to possess a controul over others, so as to check their evil inclinations. Dr. Spurzheim says "an essential thing to bear in mind respecting the feelings, is, that they are blind. No feeling *judges*. There is a difference between the feelings. Some give impulses only, others *modify* them. Such as give impulses are called in Phrenology propensities, whilst other feelings are styled sentiments, by which the propensities are *modified*."* In physics I readily admit blindness and want of judgment in regulating powers, as in the safety-valve of a steam-engine, but in living mental organs, I feel at a loss how to comprehend a power of controul or regulation, unconnected with some judicial capacity. The higher feelings of conscientiousness, benevolence, and veneration are said to modify, counteract, or controul the lower, of destructiveness, combativeness, amativeness, secretiveness, and others. This evi-

* Lect. iii. *Lancet*.

dently involves either a power of judging when controul is requisite, and at what point it should cease from acting, or else that an innate determinate preventing power is given them, which must *continually* operate in keeping the lower organs in due subjection. But a more general and very different modifying agency is afterwards propounded, which altogether supercedes the first. Dr. Spurzheim, in speaking of there being no controuling feelings in brutes, goes on to observe, 9
 “but in man we must remember that there is *a combination of higher powers happily blended with the lower propensities*, and this combination exercises a *mutual influence on each class*.”* This paragraph can imply nothing less than a reciprocity of action between the two classes of organs; propensities operating on the sentiments, and sentiments on the propensities. Conscientiousness, benevolence, and veneration on the one hand preventing our being excessively wicked; and on the other, destructiveness, combativeness, and amativeness counteracting any tendency to become righteous over-much, of which there is very little fear. Such a mutual influence of the powers, (it being asserted that “no power acts alone, all the powers act in a *combined way*,”†) affords a very even logic, very smooth sailing, and a delightful harmony

* Lect. v. Lancet. † Lect xiv. Lancet.

among the faculties, but is quite at variance with one of their leading principles, which gives an *independence* to all organs called special or fundamental. When speaking of the organ of concentrativeness not being able "to act of itself" Dr. Spurzheim says "all the powers which I shall mention as fundamental powers, are such as can *act singly*,"* which must mean without the controul of any other power. Now it so happens that every faculty which I have just enumerated, both higher and lower, and many more, are accounted *fundamental*, and therefore have full liberty to act alone.

From this strange and inconsistent blending of partial controul, mutual influence, and independent action, what are we to gather that shall direct our judgment, and determine our opinions respecting particular faculties? or of what utility under such conflicting ideas is the examination of any person's head? One can scarcely imagine why this modifying principle was employed, because it certainly weakens the basis of their system, which consists of a plurality of *independent* organs. I suspect however that as the lower propensities often shewed themselves in most marked and hideous forms; and further, as the system stood charged with Fatalism in a high degree, uprooting all moral responsibility, it

* Lect. iv. Lancet.

became desirable to soften down and modify their evil inclinations; to effect which nothing seemed more a propòs or operative than the instituting controuling powers, as a kind of preventive police. A poem called the *Craniad* has very ludicrously but happily depicted these opposite features of independence and controul.

“The faculties of man are those that will
And those that won’t, they lead to good or ill.
All the *inferiors* which incline to roam
Too far abroad, the *Masters* keep at home,
But oft, alas! so very wild are they,
They break the locks, and scamper clean away.”

Another very curious trait in Phrenology is, that its Professors should have endowed each intellectual faculty *alone* with a diversity of powers; (to wit) with perception, imagination, conception, and memory. In accordance with this principle, “The faculty of tune, for example, perceives, conceives, imagines, and remembers melody alone; the faculty of causality, perceives, conceives, imagines, and remembers ideas of necessary consequence, and nothing else,”* and so on through the whole file of fifteen intellectual organs, grafting as it were these mental manifestations or attributes of Metaphysicians upon their own stocks; and henceforth I suppose we must be said to have not one memory, but

* Sir G. M’ Kenzie’s Illustrations p. 51.

fifteen memories ; not one power of imagination, but fifteen. These advantages and acquisitions, which have been so liberally bestowed on the intellects, are, without any assigned reason, denied the Propensities and Sentiments : neither are there any organs of this kind specially appointed for their use : yet, deprived as they are of such advantages, we never find the Propensity of Acquisitiveness in want of perception to see the various modes of gaining riches, nor of memory to remember them ; neither do we find that of Secretiveness forgetting when and where to conceal its pelf ; the former of which is well exemplified in a Pickpocket, and the latter in a Miser.

In perusing the Phrenologist's descriptions of the individual organs, whether animal or intellectual, we meet with inconsistencies and absurdities at every page, and many things to excite laughter ; how therefore could they expect their opponents to be so very grave, as not to indulge that vein moderately ? The shaft of ridicule alone would amply suffice to overthrow the whole system, but where plain arguments are abundant, they are far preferable, although there can be no objection to the employment of both.

The organ of Amativeness (which here implies sexual love) has obtained a place quite at the base of the posterior part of the head, and was first discovered by Dr. Gall, in a widow

whom he attended in hysterics. Why his attention should have been directed to this propensity at that particular time, I am at a loss to conceive, but having previously considered its probable seat, he might merely take that opportunity of examining this part of her head. The idea was suggested by animals which are supposed to be excessively amative, and fond of "billing and cooing" as the Pigeon, Sparrow, Rabbit, and Cock, in whose heads he had observed a great posterior prominence, and immediately noted it down as the seat of this propensity; accounted it an *established fact*, and then *transferred* it to the human cranium. His notions also were, that the developement of this part was not conspicuous before the age of puberty, and Dr. Spurzheim speaking of this organ, says, "Examine the heads of children, and you will find this part of the head *very flat, very little developed*."* Knowing that children could not possibly feel this propensity, I was the more induced to examine this part attentively, and if I have any tact at all, (although I scarcely think it will be admitted that I have the Phrenological "Tactus eruditus") I will take upon me to say, that developement of this organ is as great proportionably in children as in adults, and as to comparing man in this respect with a cock sparrow, is it not truly ridiculous?

* Lect. iv. Lancet.

In close union and just above the last-mentioned organ is Philoprogenitiveness or love of offspring; a well-known instinctive feeling common to man and brute. It does not appear that any sounder reasons were employed in determining the abode of this faculty. Dr. Gall, was five years in considering what this protuberance could mean, when in the midst of his difficulties, "a Clergyman who attended him, observed that monkeys had a strong attachment to their progeny."* His own observations prior to this were, that "he observed a distinct protuberance on the posterior part of the heads of women; and in comparing the skulls of his collection, he found a *smaller elevation* on the skulls of children, and even on those of monkeys."† This apparent agreement of protuberance between the woman and monkey, and the hint from his pupil, induced the Doctor to fix the seat of this organ in perpetuity; reasons which exhibit more caprice than sound judgment. The heads of children are in every part less developed than those of adults, let their shape be what it may; but since it is quite clear that the propensity in question never can be felt by them, that part of their heads answering to it should upon phrenological principles be *very flat*, as is said to be the case with

* Dr. Spurzheim's Work, 2nd Ed. London 1815 pp. 287, 288.

† Ibid. p. 287.

amativeness, yet Dr. Gall admits that *it was developed*.

Dr. Spurzheim fully concurs with his preceptor's opinion respecting this organ, and entertains an idea that females are more attached to their offspring than males. To make this dogma of any value, such superior attachment should be universal throughout the whole animated nature, and likewise invariable at all ages ; but numberless examples, both human and comparative, might be adduced to prove that parental attachment to their progeny, as a law of nature, is perfectly equal. Very many male birds feed their young, and pay them as much attention in every way as the females ; pigeons and sparrows are among these, and they even sit on the eggs alternately during incubation, so that these birds are *amative* in every sense. Male and female foxes, with some others, are admitted by Dr. Spurzheim to participate *equally* in this feeling. I grant that in most animals, particularly the mammiferous, it is the female's peculiar province to be in constant attendance upon their offspring during infancy, for several obvious reasons, and therefore a greater attachment might be inferred, but surely this is an insufficient reason for denying the male equal affection. Is the father of children to feel less love for them than their mother, merely because *necessity* does not require him to be so much in their company, and

during childhood to perform so many kind offices for them ? Undoubtedly not. That very affection which the mother is shewing to her tender offspring in one way at home, he is shewing in another way abroad. He puts forth the strength of his arm to supply their corporeal wants, to protect them from injury and insult. He is equally anxious for their health, their welfare, their instruction, and advancement in life, and can it then be maintained that he *loves them less* ?

The absurd sentiments which have been put forth by Phrenologists respecting this organ are sickening. We are told that "Gall possesses the skull of a woman, who being *sick*, had the *confirmed notion* of being pregnant with *five children*, and in this skull the *corresponding organ* is extremely developed."* What an exceedingly clever illustration this of the infallibility of their system. These Philosophers have often warned others against drawing comparisons and conclusions from diseased conditions, and yet bring forward the fancies of a sick and perhaps delirious woman to corroborate their views. The inferences drawn from a small developement of this affectionate organ are strange and unnatural. Dr. Spurzheim observes "among mankind this Phenomenon must be considered as a circumstance *indirectly conducive* to

* Dr. Spurzheim's Work 1815 p. 288.

Infanticide. We have examined the shape of the head in twenty-nine women who were Infanticides; twenty-five of them had the organ of Philoprogenitiveness very small.* This assertion does not absolutely amount to a positive avowal that a mother, who has this organ small, cannot avoid destroying her children, but it approaches within a line, and supposing that with this conformation of head, her organs of controul are likewise small, and that of destructiveness large, how, according to Phrenology could Infanticide be well avoided. We are told however, that in *four* of these unfortunate women, the organs of Philoprogenitiveness were not found small, hence they must have loved their children; then we ask, why murder them, why commit so cruel an act? When we read of women perpetrating this foul and unnatural deed with organs of affection for their offspring very differently developed, the cause assigned by Phrenologists, even as indirect, must be fallacious. But to shew how woefully mistaken these Literati sometimes are, I will give a paragraph which appeared some months ago in one of the London Newspapers, I believe in the Courier, but not having particularly observed, whether it was the Courier, Times, or Globe, I was then perusing, will not positively state which. "The unfortunate woman who was executed a few mornings

* Dr. Spurzheim's Work 1815, p. 289.

ago for destroying her child, has been examined by Dr. E. a distinguished Phrenologist ; who (not knowing her history, and therefore free from all intention of bringing discredit on the executive) on inspecting the head, pronounced the organ of destructiveness to be *imperfectly developed*, whilst that of Philoprogenitiveness was *very strong*” and the Doctor’s words were, she had a *great attachment* “for her children.”

This to me is *satis superque* to root up the doctrine, for here an act is committed, although the strongest phrenological reasons concurred to prevent it. In further support of this organ, Dr. Spurzheim mentions the fondness of some savage and fierce tribes for their children, and then exhibits the very full developement of Carribbee heads at this part. I have before endeavoured to account for the posterior fullness of their heads mechanically, and the fondness of savages for their children argues nothing towards establishing this organ ; for do we not find as ardent a love of offspring in the fierce and rapacious tiger ? Then why not expect it equally in uncivilized as civilized man ?

Batchelors on the road to preferment, must *now* exercise much circumspection respecting the developement of this organ. The following stanza may be of some use to them.

Before you court, at least before you *wed*,
Seek for this organ in the Lady’s head ;

If *large*, she'll love her children as her life,
 If *small*, she'll tease them with eternal strife;
 And if a *perfect flat* you should espy,
 She'll not lament if one and all should die.

The next organ on which I purpose making a few observations, is Inhabitiveness, situated close to the one just commented on, but higher in the head, and concerning which the most eminent Phrenologists are at variance. Sir George Mc'Kenzie observes "but we are not satisfied there is such a faculty, because its functions would be too general perhaps for a single faculty ;"* whilst Drs. Gall, Spurzheim, and Mr. Combe maintain the contrary opinion, but unfortunately for the science, all three differ respecting its functions. The first pronounced it as giving the propensity to hold high places, and identified it with pride; whilst the second endows it with a peculiar inclination for certain habitations, and hence terms it Inhabitiveness, and the third ascribes to it a totally dissimilar function (namely) Concentration of Ideas. It would have been wiser, had these eminent Phrenologists held a council for making some amicable arrangement, rather than give the world such opposite conclusions, and expose the weakness of their doctrine. In order to shew what singular illustrations are brought forward in defence of it, I shall cite a curious passage from Dr. Spurzheim. After

* Sir G. Mc'Kenzie's Illustrations. p. 92

speaking of the determined action of this power in various animals for peculiar abodes, he says, "Even among rats, some are better pleased with the *higher parts of the house*, this is the case with the old English or blue rat, whilst the Norwegian rat or brown rat is most fond of the *lower parts of the house*; however since the Norwegian rats have been imported, they have nearly destroyed the ancient inhabitants: and we find a *considerable difference in the organization of their heads*."

Both kinds of rats we are informed delight in their respective abodes, one in the garret, the other in the cellar, each therefore must possess the propensity in question; but as considerable difference is observed in the organization of their heads, we have good ground for inferring that each inherits a differently shaped organ. If therefore two of one genus differ so materially from each other in their organs of Inhabitiveness, what an extreme diversity must obtain throughout nature, knowing that an almost infinite variety of predilection for particular dwelling places is inherent in different animals; consequently, how could Phrenologists assign correct locality or form to such a Proteus like organ? But does not the total destruction of the English rat by the Norwegian, carry strong conviction to the mind that the dwellings of both are similar, since they must constantly have come in contact with each other,

either in the upper or lower stories of the house, for had each remained in that dwelling appointed him by Phrenologists, with that invincible attachment* which belongs to many animals for particular haunts, the war of extermination could not have been waged. It therefore intimates plainly either that the Norwegian must have gone to the upper story, or the English descended to the lower, or else that their haunts are exactly similar. Land rats in general are more partial to sinks and all underground dark holes, yet they feel no reluctance to ascend into store rooms, warm thatched barns, corn stacks, or wherever their wants can be well supplied, and I believe that the difference of organization in their heads has not the least connection with their inhabitive propensities.

It would appear that the developement of brain belonging to this faculty, bears an increase in height somewhat proportionate to the physical elevation of the tenement.* The chamois, wild

* After telling us that young ducks will go into the water in spite of the hen's intreaties to the contrary—Dr. Spurzheim says "If you go further into nature, you find that animals have a constant tendency to go into certain places, *whatever you may do to prevent them*; they like to *feed and to remain* in certain regions." "We see the most determined action here." Lect. iv Lancet.

† "In the chamois, which lives always on the most elevated ground he can reach, except when feeding, we find the upper part of the brain, *higher* and much more developed than in the roe, which lives in the vallies; and in all animals, fond of physical elevations, we find this developement." Lect. iv, Lancet.

goat, and ptarmigan are cited as illustrative of this fact, in contradistinction to the roe ; but what degree of weight shall we attach to this argument, when we behold the eagle whose dwelling is exalted above that of most animals, with a head very low at this particular point, and the woodcock, which lives in woods upon the mossy swamps, with this organ remarkably prominent.

By Mr. Combe this faculty has been called Concentrativeness, or the power of concentrating our thoughts ; an opinion quite unlike that of his two brethren, not being in the least allied either to Pride or Inhabitiveness. No doubt this gentleman had grounds for dissenting from the views of his coadjutors. According to the *Edinburgh Review*, 1826,* he possesses this disputed organ in a high degree, and knowing that his thoughts have been exceedingly concentrated on the study of Phrenology, he might be allowed to claim a deeper acquaintance with its Phrenological nature ; still from such conflicting testimonies, but more so from its naturally diversified structure, I am constrained to say with Sir George Mc'Kenzie,† “ we are not satisfied that there is such a faculty.”

Both Dr. Spurzheim and Mr. Combe have

* “ A faculty of much note and importance in his scheme, having a goodly organ in the back of the head, just above love of children, and below self-esteem.”

† Illustrations of Phrenology p. 92.

agreed that whenever a faculty is in a state of activity, the individual must make motions or gestures in the line or direction of the external organ. "Whatever the situation of the organ may be which is active, there the head is carried in *that direction*, whether laterally, upwards or downwards."* Now whilst the former strenuously contends that concentration of ideas takes place in the forehead, which would cause a person in deep thought to incline his head forwards; the latter as strongly maintains that it takes place in the back part, and causes the head to be thrown backwards: but in order to reconcile these differences and accommodate such diametrically opposite conclusions, as well as actions, Mr. Combe endeavours to make nature accomplish this task, by stating "that preachers and other orators are apt, when speaking with animation to move their heads *backwards and forwards alternately*"† thus, inclining it one way, in accordance with Dr. Spurzheim, and in the opposite, to favour Mr. Combe. This is being all things to all men; a fault I never yet discovered in nature, who is "constant and does not vary her course to flatter our conceptions."‡ In speaking, a graceful orator will have occasion to bend his head and body forwards, after which he must

* Lect. xiii Lancet. † Edinburgh Review September, 1826.

‡ Lect. xiii. Lancet

of necessity soon resume the erect position, unless he would appear fixed like a statue ; but in using a suitable, easy, and dignified action, was he ever seen to sway his body to and fro, his head describing the arc of a pendulum ? I will appeal to any individual who has ever reflected intensely, whether a concentration of ideas, commonly called deep thought, does not induce perfect stillness of head and composure of body ? We are constantly in the habit of nodding assent, the organ for which, according to the above rule, should of course be situated in the forehead, but as yet none has been delineated ; being however quite as habituated to signify dissent by a horizontal shake of our heads, where are we to search for the active organ which represents this oscillating motion ? I shall probably be told that there are no organs of assent and dissent. If so, I ask what internal powers impel us to make those intelligible motions of the head, which appear quite as significant and characteristic of the activity of some organs, as those of concentrativeness.

In every remaining organ are to be seen many traits of vague hypothesis, gratuitous assumption, and erroneous induction ; I shall not, however analyze the whole, but limit my observations to a few, and conclude with some general remarks.

Passing over the faculties of adhesiveness and combativeness, we come to that of destructiveness. This was called by Dr. Gall the organ of murder

which his coadjutors finding exceedingly injurious to the cause of Phrenology, softened down to destructiveness, but this was only a change of *name*, not *nature* ; since its habitat is exactly on the same spot of the cranium to which Gall first affixed it, and they endow it with similar functions, for we are told by Dr. Spurzheim, that it gives “the propensity to pinch, scratch, bite, cut, break, pierce, devastate, demolish, ravage, burn, massacre, strangle, butcher, suffocate, kill, poison, murder, and assassinate!!!”*

I have had occasion to observe that its situation and function were wholly derived from the heads of carnivorous animals, and, in my humble opinion, upon very shallow grounds. For several reasons I altogether deny the existence of an organ of murder.

First : Because no proof exists of the portion of brain assigned to this organ by Phrenologists, being that which impels animals to destroy life.

Second : Because I conceive murder and destructiveness to be two totally different principles.

Third : Because I do not believe that God ever created any organ with so diabolical a function.

Every being under heaven is endowed with an instinctive appetite for particular kinds of food, commensurate with which are its means of obtain-

*Dr. Spurzheim's Phrenology 1815, p. 317.

ing it. Some are impelled by this natural feeling to subsist on flesh, and these have certain corporeal instruments fitted for procuring it, by destroying other animals; they have likewise stomachs capable of digesting it, and it *alone*. With such an union of appetite and digestive apparatus, the law of nature clearly points out that the destruction of life becomes necessary and allowable. But there is another law of nature evinced in an equally strong and instinctive feeling, which is the absence of all propensity in an animal to destroy *its own kind*; even ravenous wolves under the most pressing hunger travel in large companies without destroying each other. This shews what the principle and limit of destructiveness are in carnivorous animals. Is such a propensity in any shape allied to the act of *murder* committed by man? He, in common with many other animals, has the carnivorous appetite implanted in his nature, and in lieu of certain destructive corporeal weapons, is gifted with other powers for a similar end. With these natural feelings and endowments, and with the additional express permission that all living creatures should minister to his wants, and be to him for meat, destructiveness is in him also an allowable, legitimate principle; but from his instinctive repugnance to destroy and devour his own kind, consonant with that of all other animals, and from his having received an *express prohibition*

against the shedding man's blood; murder becomes an unnatural, unlawful, and wicked deed; bearing not the most distant affinity to destructiveness.

I have already adduced reasons to account for a greater width of head from ear to ear, in carnivorous than in graminivorous animals, and one proof of their justness is, that they shew an adaptation of means to ends; but no arguments are brought to convince us, that the portion of brain over each ear, gives the impulse or disposition to destroy life.

Judging from all Creation, from that harmony, perfection, and good, which pervade the structure of every individual creature, I can never suppose God to be the Author of any evil work; and therefore infer that he never created in any man's brain, an organ which would prompt or impel him to murder a fellow-creature. Neither am I so uncharitable, as to think that Phrenologists seriously entertain a different opinion; but when we perceive the two functions of destructiveness and murder embodied in the same organ; and when we know that Phrenologists believe that the carnivorous animals destroy others in consequence of having this organ, and that those which have it not, do not destroy life; how can we entirely divest our minds of the idea that murder is committed upon a similar principle, and likewise that the doctrine of *Fatahism*,

makes a component of their system. They deny, however, the charge of Fatalism, and say, that Phrenology contains no such views. They wish to be understood as speaking only of the *powers or organs*, and not of their application, saying, that "good and bad cannot be applied to the powers themselves, but to their actions."* They admit innate powers, but not *irresistible* actions. Let us examine a few of their expressions, and see whether good and bad qualities are not attached to the organs; whether their applications are not virtually, if not formally admitted; also, whether a necessity for those actions is not implied, and free agency, either directly or indirectly subverted.

Some of their organs are called superior, higher, and more noble, unquestionably importing *good*; such are Veneration, Benevolence, and Conscientiousness. Others again are termed inferior, ignoble, base, which must mean *bad*; these are Destructiveness, Combateness, & Acquisitiveness, or the obtainment of any thing upon earth in an honest or dishonest way. "I never (says Dr. Spurzheim) choose for my intimate friends persons in whom the *inferior* organs are very large, and the *superior* very small."† These terms indicate the admission of good and bad powers or organs. I would also observe that all their organs

* Lect. iii. Lancet.

† Dr. Spurzheim's Work p 545.

were derived from and *founded* on some *supposed function*, and the distinguishing epithets of good and bad have been applied to these. If then a function be *bad*, its organ or representative cannot be *good*. "A Tree is known by its fruits." Was not the organ of murder founded on the function or propensity to destroy life, and has not this been admitted by Phrenologists to be in many respects low, base, and bad, ergò the organ must be low, base and bad : for did the organ itself always remain quiet, inactive, and unproductive, then I should esteem it inert and inoperative, consequently useless, neither good nor bad ; but when declared prone to act in all the vile ways which have been described, we must justly consider it a bad organ, from its functions being bad, in which all that is worthless or valuable essentially resides.

The mind of man is applied in a great variety of ways, principally to the impelling and directing the corporeal organs or instruments accordingly as it wills. This impelling agency is granted by Phrenologists to their several faculties, more especially to the Propensities.* Thus the organ of Inhabitiveness, we are told, impels ducks and other water-fowl to seek after water to dwell in, the same impels nightingales to

* Such as give *impulses* are what are called in phrenology Propensities." Lect. iii Lancet..

keep to their dells, the chamois to its rocks. Adhesiveness impels birds of a feather to flock together, as exemplified in rooks, larks, starlings, and sparrows.* And further, Secretiveness impels men or other animals to conceal—Acquisitiveness to beg, borrow, steal, or gain by honest means—and Destructiveness to kill. Here then is distinctly an application of organs to particular purposes.

Let us now examine whether their language does not go far to demonstrate irresistibility of action.

“If any being has *only* one power, he acts in one way and can have *no choice*.”* This clearly indicates a determinate undivided action in any power, similar to what obtains in the eye, ear, stomach, liver, &c.; which if exercised at all, must be in *one specific way*, and unexercised is useless, and might as well not exist. Apply this reasoning to the brain of man, which Phrenologists have divided into many powers, each having a distinct and different function: must not each act in its *own way* and *have no choice*? Of what benefit would the organs of Veneration and Benevolence be, if they did not prompt us

* In Winter all kinds of small birds flock together promiscuously; larks, sparrows, finches, linnets, &c. &c. What organ prompts this motley group to become so friendly?

† Lect. xv Lancet.

to the exercise of devotion, and the shewing kindness one towards another? Could other organs perform their functions? or could *they* officiate for Combativeness or Destructiveness? seeing that "every faculty is confined to its own organ."* An eye is not expected to digest food, nor a stomach to see; either of them may be at rest, but when employed, it must be each in its proper function, and brainular organs being considered analogous in having special faculties, we should expect each, when in action, to perform its own duty. Dr. Spurzheim further says, "It is beyond a doubt, that he who is *dragged* into criminal actions by *very strong internal propensities*, rarely feels any natural repentance. In such a man, the inclinations which lead to evil are energetic: they constitute, if I may so express myself, his principal character; and hence *all his actions which result from them* are in harmony with his inclinations."† In this paragraph we perceive the actual *application* of propensities, expressed in the strong language of forcing or *dragging* a person into wicked acts, and which certainly bears more the character of necessity than choice of action, in addition to which, the Doctor afterwards mentions it as a circumstance generally known, "that every one

* Dr. Spurzheim's Work 1815 p. 481.

† Ibid. 1815, p. 252.

excuses his frailties, by saying, it is my nature ; it is stronger than I am, *I cannot help it ;*”* and when speaking of the necessity of artists imitating nature in their configurations of heads in portrait painting, he applies this unhappy expression, “Do you suppose, that if an artist were to represent a person he intended to be sent to heaven, and another to be sent to hell, that he would give them the *same shaped heads?*”† Here likewise is a virtual acknowledgement, that good and evil actions, are dependent on, and must proceed from certain configurations of the head, a knowledge being implied of the precise form which is likely to send a person either to heaven or hell. Lest the language of Phrenologists, already adverted to, should not be considered sufficiently demonstrative of an *irresistible* action, I adduce two more quotations, in which it appears still more palpable. When speaking of the organ of destructiveness Dr Spurzheim assures us that, “In man this propensity presents different degrees of activity, from a mere indifference to the pain of animals, to the pleasure of seeing them killed, or even to the *most irresistible desire to kill*. This doctrine may shock sensibility, but it is not the less *true*†” “A person endowed with the faculties proper to man in the highest degree,

* Dr. Spurzheim’s Work, p. 252.

† Lect. xiii. Luncet.

§ Dr. Spurzheim’s Work, 1815. p. 306.

and with very small animal faculties, will act by nature conformable to the faculties which give the law when the animal faculties act with energy. He has no occasion for any law, either putting in action the superior faculties, or preventing the abuses of his animal faculties, and is really elect.”*

I wish my readers to judge with candour and impartiality of the preceding quotations, and say whether the quality and application of organs, are not plainly evinced in their pages; also whether the doctrine of necessity or fatalism is not promulgated by this modern exposition of the human understanding. Let us not be lulled into any ideal security that it is not, merely because we are told so, when a little investigation will discover ample evidence, tending to subvert free agency, and fritter away the whole principle of moral responsibility.

This is the system which is now preached abroad, and held up to public view as the perfection of mental philosophy. By its loose but dogmatic rules do the Phrenologists desire education to be conducted, institutions to be formed, and society to modelled. So long as it employed men's minds theoretically only, as a curious and amusing speculation, no great mischief arose, but now, that it is beginning to be reduced to prac-

* Dr. Spurzheim's Work, 1815, p. 519.

tice, injurious effects are becoming manifest ;
 and these will multiply in proportion as it shall
 gain credence, and be diffused through the va-
 rious occupations of life. An article in the
 Monthly Review for April last, states the follow-
 ing bad effects of this doctrine. " We have
 known more than one instance in which the heads
 of servants were examined, previous to engaging
 them, and in which those who had *any suspicious
 bumps were rejected*, though otherwise their
character was good. We have even known
 the system *influence the opinion of a juryman*,
 though his fellow jurors, not being illuminati,
 were all against him." In the former of these in-
 stances, it was not any *known application* of the
 suspected organs, which influenced the persons
 who were about to hire servants, but merely the
 presence of their full developement, which they
 thought and feared would soon prompt them to
 bad actions. If therefore the organs themselves,
 when large, are regarded with suspicion and
 dread, (and I do not well see how it can be
 otherwise) it must be equally, if not more mis-
 chievous in a practical point of view, than as
 though their applications were known and spoken
 of; because, in this latter case, you have not to
 contend with surmise and uncertainty : whereas,
 in the former, conclusions are drawn from sus-
 picious alone. When, however, we find that
 murder and theft are committed by persons, who

have even small organs of destructiveness and acquisitiveness, without any deficiency of superior controuling powers ; and when we read that the good faculties of Conscientiousness and Philoprogenitiveness, may, from their small size, be *indirectly conducive to murder*, where can we find any ground of confidence in the science. ?

A Phrenologist, who should perceive a large organ of Acquisitiveness in any servant applying for a situation, would be very much inclined to doubt his honesty, because he presumes that this faculty gives "the propensity to gather and acquire, to covet, without determining the object to be acquired, or the *manner of acquiring it*."* He informs us that *he knows* a man to have a good opinion of himself, who is endowed with a large organ of Self-esteem ; and upon the same principle, he must allow that there exists a quarrelsome and pugnacious disposition, where Combative-ness is prominent ; and a great liability to be vindictive, cruel, and destructive, where the organ of Destructiveness stands conspicuous : so that however good and upright a character any person may have acquired for past servitude, he runs a great risk of being rejected by those who adopt the phrenological creed, if unfortunately he should possess any of the inferior organs in a high degree. Dr. Gall's sentiments respecting

* Dr. Spurzheim's Work, p. 328.

the crime of theft, that "as it exists, it was not against the will of the Creator,"* must inevitably apply to murder and other crimes, than which nothing can be more erroneous and revolting. We know that God does, for some wise purpose, *permit* the commission of crime, but he *never wills nor sanctions* even the least. The willing and permitting an act are totally different. The *former* attaches itself most intimately to an act by desiring it; whilst the *latter* has no necessary connexion with it, and may be even averse to it, yet *allow* its perpetration.

Is it possible to look with apathy and indifference, upon a wide diffusion of such principles, which not only tend to excite great suspicion and distrust among society, but to throw off the yoke of moral responsibility? Being acted upon in one department of life, it may be expected to extend its operation through every other, civil, moral; and religious, and if such were the case, I will venture to predict that interminable distrust, discord, and confusion, would be the unhappy consequences.

On the important question of education, Dr. Spurzheim mingles many sensible observations with numerous fanciful and impracticable rules, that grow out of Phrenology. He must entertain but a mean opinion of what has been done

* Dr. Spurzheim's Work, p. 325.

towards man's improvement, during the last eighteen hundred years, or he never would have said, that "many books have been written on education, whole libraries have been compiled, various institutions established, yet *very little improvement has taken place*."* According to this sentiment, the whole intellectual world has hitherto been nearly at a stand still; but now, that Phrenology is brought into existence, and reduced to a complete system, we are taught to anticipate the most brilliant success. All mankind must begin *de novo*, make it their polar star, and pursue every branch of literature, art, and science, under its splendid and *unerring* light.

In the Doctor's exordium upon education, he throws out hints in an unconnected way, on the principles and doctrine of propagation in improving the breeds of cattle, plants, trees, and fruits, by attending to certain conditions; and afterwards intimates that the intellectual as well as corporeal conditions of man may be improved by similar attentions. He observes, that "If the time should come when the laws of propagation shall be attended to, more good will be done to perfect man, than hitherto has been done by *all the institutions*, and by *all the teachers* of the present or past ages, not only with respect to individuals, but families and nations. The body

* Lect. ix. (intended for xviii) Lancet.

has its laws, and if the manifestations of the mind depend upon the body, the laws of the body must be observed, if we wish to arrive at a perfection of form, or of the endowments of the mind.”* By this passage coupled with another, respecting the inheritance of diseases, and the propagation of bodily configurations, and mental talents from parents to children,† we are led to understand, that great perfection of mental endowment results from the union of great minds and fully developed intellectual brains, in conjunction with sound bodily health; so that the offspring may be an improved breed, superior to both father and mother. Aware that healthy children spring from healthy parents, and the contrary, I shall not contend against the adoption of certain wise and salutary measures, for the purpose of obviating many diseases which descend from one generation to another, and of promoting a vigorous and healthy body; hence so far I heartily concur with Dr. Spurzheim; but when he would imply that vigour of mind, and bright genius, depend on the union of certain high mental endowments, and that if matrimonial alliances were formed upon these principles, we should expect sure and cer-

* Lect. ix. (intended for xviii) *Lancet*.

† “If parents have small brains, small brains will come. There are talents in all families, but are there certain faculties more active in certain families? You will perhaps be inclined to admit that there are.” *Lect. ix. Lancet*.

tain improvement of intellect, and likewise, that by a nice attention to phrenological rules, we may judge accurately of the presence of such superior mental manifestations; I must beg leave to differ from him upon the following grounds.

First. Because we are every day witnessing genius and very strong minds in conjunction with deformed and unhealthy bodies, of which fact, our two distinguished poets, Pope and Cowper are striking examples: also great precocity of talent in very rickety, unhealthy children; and conversely men of the most symmetrical frames, sound health, and herculean bodily powers, without any strength of understanding, or with a very moderate share.

Secondly. Because children are frequently much inferior in abilities to their parents—and

Thirdly. Because we are not in possession of any true phrenological index to guide us: believing that its outward signs and internal division of brain into specific organs, are all conjecture and dark uncertainty.

At the same time I will not attempt to disprove that clever children *may* and often do proceed from clever parents, yet that we are not to rely on it as a necessary consequence.*

* Since we seldom, if ever, hear of Idiots marrying, I may instance them in illustration of Parents with sound minds often giving birth to unsound, so that a *degeneracy* instead of improvement can and frequently does ensue.

In a highly civilized and dense population, among whom disease has found entrance in a thousand different enervating forms, and from as many different causes, obstacles are continually presenting themselves to counteract those wholesome regulations which would conduce to physical perfection; and if to these are to be added a host of others, arising from phrenological views of the human mind, mankind will become so surrounded with difficulties that they will scarcely know how to form proper matrimonial connexions.

Were phrenological rules once recognized as applicable to propagation, we should find both ladies and gentlemen very particular in their choice of partners, often very whimsical, and more nice than wise respecting mental endowments. As it is not yet proved to demonstration that a wise father and mother shall be sure of having even a sensible child, much more an improved offspring, or that parents possessing the organ of tune, colour, ideality, or causality, shall give birth to a Handel, a Titian, a Milton, or a Newton; I suspect there would be many castles built in the air, many high expectations formed, and but few realised.

I do not impugn the motive which has actuated Phrenologists in endeavouring to extend the laws of propagation to mind; I believe it to be pure and commendable, because it certainly aims

at intellectual improvement; but it is to their means of attaining this which I object, as being fanciful, imaginary, and without any solid basis, therefore delusive, worthless, and dangerous.

It is, or ought to be, unquestionably a paramount object in every nation to preserve a vigorous and healthy race of subjects; which we know may be promoted by certain laws and institutions, the chief of which is the ordination of matrimony, intended in part to guard against inter-marriages of too close a consanguinity. This is of a public nature, but there are many considerations of a private kind, to which it would be wise in individuals to pay more attention than is generally done. I allude to the contracting of marriage in families, where insanity or other hereditary diseases of a very fatal tendency are known to prevail, and which are not unfrequently entailed upon generations. These circumstances having been duly weighed, the unmarried lady and gentleman may endeavour to obtain as great a congeniality of tastes, sentiments, habits, education, and rank in society as they please, the more the better: but to be paying and receiving addresses phrenologically, eyeing, feeling, and scrutinizing each other's heads, in order to discover whether certain faculties are well developed, and a mutuality of sentiment existing, so as to guarantee much connubial felicity, would be, to say the least of it, very absurd.

Bring this system into general use, and all kinds of education* in arts, sciences, literature, and the social duties of life must become affected by it and assume a novel character. The lover then must use his utmost caution and reserve, when speaking of the sincerity of his passions, unless the conformation of his head will justify bold language, for in vain will he urge it, if the lady should chance to espy a flatness over the organ of *attachment*. In vain will he preach his good qualities of heart, and excellent moral conduct, if she detect a depression or even flatness where the organs of *Benevolence* and *Veneration* reside, with a fullness over *Secretiveness* and *Destructiveness*. He may be picturing to her the prospect of perfect connubial bliss, at the very moment that she has discovered in his head a huge organ of *Combativeness*,† knowing at the same time that her own is rather more developed than she could wish; therefore that in all probability a quarrelsome and unhappy life would result from their union. On the question

* “The *systems of education* also should be founded upon the knowledge of the moral nature of man. I might say that the *arts, individually*, are interested in phrenology” “In *poetry* also it is useful.” Lect. i. Lancet.

† “Having a wish to make a practical use of phrenology in society, you find an individual organization very large, *do not hesitate about it*, you may venture to ask whether with respect to a certain feeling the person has it strong or not. You may be sure that it is so.” Lect. xvi. Lancet

of improving the intellects by propagation, the Craniad gives us the following lines.

" Is it not well, before we choose a wife,
 " Or choose a husband, partner for our life,
 " To know what faculties are sound and right,
 " What intellectual organs clear and bright?
 " For should a father and a mother too,
 " Be stupid *both*, what must the children do?
 " But should *one* only have a clear wise head,
 " Why half a loaf's still better than no bread.
 " We must take care, and find, if we're but wise,
 " That no bad organ's of unusual size,
 " Such as makes people steal, and fight, and kill,
 " And 'gets the better of their better will.'
 " Ladies! we charge you never dare to wed
 " A husband with Destruction in his head;
 " He'll stab you when he's angry! rest assured;
 " Now this is shocking—not to be endured."

The reason for giving this caution to the fair, respecting the angry man, is, because Dr. Spurzheim tells us that "at Spandaw we (meaning himself and Gall) saw a man who had assassinated his wife in a *paroxysm of anger*; and this man was unhappy during his whole life. Indeed he was a *good natured* and generally considered as an honest man."* Although therefore we are again and again assured that a person having a lower organ is not obliged to make use of it to a bad purpose, yet this is poor consolation, when

* Dr. Spurzheim's Work p. 348.

we see it so rapidly and violently excited by anger, even in a "*good natured man*" as to induce him to commit the deepest criminal act.

After eulogizing the benefits which would accrue to mankind, by attending to the laws of propagation, both in mind and body, Dr. Spurzheim affords us a very equivocal and unsatisfactory rule to accomplish those ends. He says, "A villain does not like to see an honest man, and a just man does not like to see one that is unjust. Every one must know *his own powers*, and he must look for the *same powers* in another, and then such persons will *live in peace*."* What, pray, would this effect towards producing a *general* improvement among mankind? It would undoubtedly, *if practicable*, be separating the just from the unjust, the wise from the foolish, the wheat from the chaff, and although improvement in wisdom, goodness, and happiness, *may possibly* be progressive in one class; degeneration in vice, folly, and misery would be equally progressive in the other. Superior organs married to superior, *may* live in peace; but inferior united with inferior, would, by the same rule, live in discord. If great improvement of the human mind, is to be placed on a footing with that of breeding cattle, similar regulations ought to be strictly pursued. Many physical points of

* Lect. ix. Lancet.

excellence are here studiously observed in order to improve stock, all that are defective being prohibited from breeding; apply this rule to mind, and selections of the greatest intellectual excellence must *alone* be made for propagation. But, pray who are to be the arbiters of this mental superiority? Who are to measure the requisite degree of perfection, and determine upon the *only fit subjects*? Some sapient erudite Phrenologists, I presume, who may be called "Prime Craniologers of State," and who shall be bound "To swear which organ is, or is not sound."

Propagation upon phrenological principles being made the foundation stone for mental improvement, the rearing or education of children follows next, and this, with the exception of a certain *peculiar bias* in directing the powers, is very similar, both intellectually and morally, to what generally obtains in our homes and seminaries, (namely) due and proportionate exercise of the mind, according to the health and capacity of a child. In determining the precise kind of education to be pursued, and what character should be sustained in the drama of life, parents have hitherto been in the habit of exercising a discretionary power, consulting in part the inclinations, tastes, and apparent capacities or genius of their children, and in part other contingent circumstances, not being aware that a survey of the head would have readily informed them of

the best mode of procedure, and that unless a youth had a large organ of language, it would be in vain for him to learn foreign tongues. *Now*, however, we presume the external configurations of their heads are to presage *latent* genius and powers; certain phrenological developements and signs of natural language are *now* to determine the precise kind of education and calling in life. Parents, therefore, must either make themselves acquainted with the arcana of this science, or run the risk of misdirecting their children's education and future destiny, unless some skilful Phrenologist be at hand. This will probably open the way for a novel profession, and we shall soon have Phrenologists of various grades, from the village Practitioner up to the metropolitan Professor.*

These will inform parents what kind of education and pursuit is best adapted for their children; whether a son should be brought up for the pulpit,—bar,—or field of battle. Whether he ought to be a Surgeon, Carpenter, or Man-milliner, Fidler, Tinker, or Tailor. It may be thought that my remarks are not borne out by their doctrines, but if a language conveys correct ideas, that of the Phrenologist distinctly announces

* Since writing the above, I have seen the following notice. "Mr. Crook's fee for a Phrenological estimate of the natural character and capacity, with a written note of the developement, is Two Guineas. If given verbally, and at his own residence, One Guinea."

these very principles. "The power being observed (says Dr. Spurzheim) should be *directed* into a proper channel, and this can *never* be done, until persons are acquainted with the *nature of the fundamental powers*. A man may be a good mathematician, but a bad moralist, and yet such a man is brought up to the church." "Persons *fitted by nature* for soldiers are brought up to the gown, and the reverse. Employ every individual according to his *natural gifts*." "But shall we condemn an individual to learn Latin and Greek, if the *power of language be very small*, and who will *never* become a good scholar?"* He likewise observes that those are interested in knowing Phrenology, "who have to join institutions of any kind, *which ought to be founded upon the nature of man*."† Hence we presume that none should be admitted into Mechanic Institutions who do not possess full organs of *Constructiveness, Form, Size, or Weight*. None to Harmonic Societies who have not the faculty of *Tune* well developed. What the requisite mental manifestations are, which would entitle a person to become a member of a Phrenological Society, I know not; unless it be that general development of brains which produces a smooth round head. "The *finest heads* may have no protuberances whatever."‡

* Lect. ix. (intended for xviii.) Lancet. † Lect i. Lancet.

‡ Lect. iii. Lancet.

So long as we have the facts before us of persons committing actions directly contradictory to what their cranial developments would lead us to expect, as in the case of Infanticide by the woman whose organ of Destructiveness was small and Philoprogenitiveness very large ; and of the two murderers who were lately dissected at Bury St. Edmund's, neither of whom were phrenologically destructive—further, so long as it is proclaimed that some of the most exalted faculties of our nature, such as Veneration, Conscientiousness, and others may, be indirectly conducive to acts which are diametrically opposed to their own kind and good functions—and lastly, so long as the most erudite Phrenologists differ materially concerning the nature of organs, it would be extreme folly to repose any faith in the doctrine, and worse than folly to lay down a system of education for our children, deduced from its principles : principles which are inconsistent with each other, and in a variety of instances contradicted by nature.

Dr. Spurzheim appears extremely sore and angry with medical men, because one and all do not choose to believe Phrenology, which he thinks so very useful to them in many respects, particularly in treating Insanity. The fact is that the great bulk of our Profession do not see its correctness and vast importance with the same eyes as the Doctor, and they do not admire being

forced to credit a system, which upon examination they find very problematical and unequivocally renounced by nature in numerous instances of Anatomy, Physiology, Pathology, and Analogy. Although they feel anxious for, and are ever ready to embrace any improved mode of investigating nature and diseases, they are not to be captivated by every specious doctrine which is ushered into notice ; and seeing that the unique method under consideration may lead them very much astray, by appropriating specific functions to particular parts of the brain, erroneously, without a why or wherefore to be relied on, in fact without any solid foundation,* they prefer

* When engaged in disproving a plurality of organs in the brain I omitted to state one remarkable argument against it. Phrenologists, we are aware, founded this part of their doctrine, not only upon a diversity of mental manifestations, but particularly upon an analogy with *other corporeal organs*. In every one of these we perceive a totally different structure. All the world know that there is no similarity between each other, in the eye, ear, tongue, stomach, heart, liver, or lungs, either in appearance, structure, or functions. This being the case every alleged organ of the brain, inasmuch as they all differ in function, should differ from each other either in structure or appearance. But examine the brain, and endeavour to find this verified. Those portions of it which have been appointed as organs of Destructiveness, Acquisitiveness, Secretiveness and many other propensities, are in every respect not only like each other, but exactly similar to those which serve for Veneration, Benevolence, Conscientiousness, with the whole range of Intellects ; and Dr. Gall himself admitted that he would be unable to recognize the brain of individual

studying the phenomena of the human mind as emanating from one undivided brain, and marking their influences upon the body in reference both to health and disease. From a perusal of their views and opinions respecting Insanity, it does not appear that Phrenologists with all their acumen are a whit more clever than other persons in their knowledge of the particular seats of this lamentable infirmity, or of the causes which produce it, or of the means of cure. In fact it will not be difficult to shew that the very principles and precepts which they inculcate for producing an increase of endowments, are phrenologically speaking conducive to an increase of Insanity. We are informed that "if parents have small brains small brains will come,"* by which rule if they have large brains, large brains will come. Now we are taught to regard fully developed heads as indicative of great intellectual powers, and are recommended to unite kindred souls in wedded love, if we would wish to obtain an improvement of mind; when however Dr. Spurzheim is lecturing medical men for not studying Phrenology, in order that they might better understand what Insanity is, and how it should be treated, we find him saying that "any

organs, if separated one from the other. To know them, then, perfectly and unerringly, when covered by the bony canopy, does appear to savour of the mystery of animal magnetism.

* Lect. ix. *Lancet*

power whatever may become deranged in insanity"* and that when so affected its organic development will be always found *large*. In melancholic madness "Cautiousness will be found *very large* : "† in religious derangement "the organ of Veneration will be *large* ; the same also with Conscientiousness, Pride,‡ Benevolence, love of Approbation, and others ;" the inference from which must be, that largely developed brains are *more prone to become insane*, consequently the very rule which Phrenologists advise for increasing intellect, namely an union of fully developed powers, (in order to ensure a similar or increased size of them) goes to augment the predisposition to insanity. The two extremes then appear to have their attendant disadvantages. Very small brains are either idiotic, or very dull and not susceptible of great mental improvement ; and very large have capacities for the highest intellectual, moral and religious attainments, but unfortunately are more liable to become deranged, hence here, as in most other things we recognize the value of a happy medium, and having the important discovery before us, that on a principle of propagation small brains will produce small, and large, large ; we are at

* Lect. xvii. Lancet. † Ibid.

‡ " Here is the cast of a person who became insane from excess of pride, and you see how *very largely developed* the organs are here about. (The upper and back part of the head.)" Lect. xvii. Lancet.

once furnished with a rule for obtaining the golden mean, simply by uniting large brains with small; thereby ensuring sufficient talent to answer all the purposes of life, and at the same time diminish our liability to insanity.

If Phrenology be so essentially important in unravelling the causes, and in determining the precise seats of insanity; likewise in bringing this malady to a more speedy and happy termination, why, for humanity's sake, have not some eminent Phrenologists afforded the world a practical proof of it, by establishing Lunatic Asylums upon their own system, and thereby given us examples of its superior value?

When medical men behold Phrenologists sure and unerring, or even eminently successful in curing the different species of insanity, and other diseases of the brain, under the guidance of their art; when also by the application of their principles, education shall assume a decided improvement, and produce a striking augmentation of intellect, I am sure that they will not withhold their meed of praise, but will press forward, one and all, to hail with joy so great a blessing, and bestow every honor upon its discoverers: for then may they expect to see old heads upon young shoulders, England one great modern Athens; and its inhabitants, "The wisest, virtuest, discretest, best."*

* Milton's *Paradise Lost*.

FINIS.

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