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.

With the author's compliments

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."

SHAKSPEARE.

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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 Trogus 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-

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* 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

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* "Si mediocris erit—frontemque, manumque,
Præbebit vati crebram propysma roganti."—Juv. lib. vi. 581.

† 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 *frons* 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.†

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* In occipitio prominula regio, ex cujus tubere vulgus memoriæ ingeniique 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 further 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.*"

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† 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 sphear, 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."‡

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

† Saunders' Physiognomie, Chiromancie, and Metoposcopie. 1653. Book ii. 178.

‡ Aspera fronte ne gaudeas, neque quæ fossas monticulosve 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

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* 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

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* 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

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* 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, Latines, and Italians, great students in, and promoters of, this high part of philosophy, (chiromancie), 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

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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.

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* 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 éspéce 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 operations 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, censidered 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

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* Anatomy of the Brain, with a Geaeral 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

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* 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 ressort*, 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-

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* 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

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* 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 etat d'indiquer avec précision les limites de tous les organes du cerveau.* Mais les anatomistes sont ils capable d'indiquer avec precision 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-

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* 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-

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* Combe's Elements. 1825.

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

‡ System of Phrenology, p. 51. 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-

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* 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 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-*

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* 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 pscychology 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

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 dimished 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-

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* *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

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* 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.*

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* Traité sur l'Alienation 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.*

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* "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-

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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, ‘ your 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. Sœmmering, 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

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* 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 $6\frac{59}{120}$; breadth, $5\frac{25}{120}$, 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.

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* 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, $6\frac{5}{8}$. It then varies little till 12.
12 years, $6\frac{3}{4}$.
16 to 18, $6\frac{7}{8}$.
Adults, ... $7\frac{1}{6}$. 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.†

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* 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 $7\frac{1}{6}$, 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 $6\frac{1}{3}$ the mean diameter of the adult skull (Elem. Anat. i. 203) : to $5\frac{9}{10}$ 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 $5\frac{17}{24}$ *Wirtemberg* inches at seven years; consequently, the mean diameter of that organ at seven years is $5\frac{9}{10}$ inches *English*, or exactly the dimension, at that age, betwen 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 hatter.

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

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* 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.

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* 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

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* 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 mediocrité de leurs talents. J'en pourrais citer bien d'autres d'une superiorité 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

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* Traité sur l'Alienation 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

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* 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 humurous 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 desart, 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 carcer 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

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* 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 Harolde'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 unpitying 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-

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

finitely 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

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† 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

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* Richerand Physiologie, &c.

with the phrenological organs, appears obviously a chimera. 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

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* Physiologie des Temperamens, ou Constitutions; Nouvelle Doctrine applicable à la Medicine 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

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* 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-

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* 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.

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* 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

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* 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

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* *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 poportion 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 orbitar 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

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* 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

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* 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 millenium of Phrenology. We shall then, indeed, hear no more of "*little bumps and protuberances*," but shall

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* 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

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* 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

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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 comissures.*

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-

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* 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 damdyke, 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 depasse 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 réiterée 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

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* Anat. des Syst. Nerv. des Anim. Verteb. ii. 515. † 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 males 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 pettits, 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 fecondité. 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 fecondés 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.

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que enfin le cervelet ne soit pas plus développe dans le coq qui s'accouple presque toute l'année, que dans les oiseaux ou l'accouplement ne dure que quelques jours, néammoins 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. *Cynocephales.* † 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 *Apothetæ*, "concluding that its life could be of no advantage ei-

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* 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 apalling 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.

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* 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

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* Asiatic Researches, vol. iv. 338.—Among the *Jarejah 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 *Arreoys*, 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?"†

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* 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 Pekin 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

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* 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 mania, 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

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* 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-

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* 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 unrevenged," 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-

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* 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.

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

† Tavernier's Relation of Japan, p. 5.—Humberg Voyages au Japan, 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

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* 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-

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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-

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* "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 concieve 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.

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* "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, assidious, 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-

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* 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

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* 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.

TABLE OF MEASUREMENTS.

Order I. PROPENSITIES AND SENTIMENTS.

	Amativeness.	Philoprogenitiveness.	Inhabitiveness, or Concentrativeness.	Adhesiveness.	Combativeness.	Destructiveness.	Constructiveness.	Acquisitiveness.	Secretiveness.	Self-esteem.	Love of Approbation.	Cautiousness.	Benevolence.	Veneration.	Firmness.	Conscientiousness.	Hope.	Wonder.	Wit.	Ideality.	Imitation.
Thurtell.	Very large.	Large.	Large.	*Very large.*	Very large.	Very large.	Small.	Full.	Very large.	Large.	Very large.	Very large.	*Very large.*	*Large.*	Very large.	Moderate, or rather full.	Large.	Moderate.	Small.	Moderate, or rather full.	Large.
Haggart.	Moderate.	Large.	Large.	Moderate.	Very large.	*Full.*	Large.	Moderate.	Very large.	Very small.	Small.	Full.	*Large.*	Moderate.	Very large.	Small.	Rather small.	Small.	*Full.*	Very small.	Full.
Fallet.	Rather large.	Large.	*Full.*	Large.	Large.	Large.	Large.	Large.	Large.	Large.	Rather large.	Rather full, or moderate.	Rather full, or moderate.	Rather large.	Full, or rather large.	Moderate, or rather small.	Full.	Full.	Very small.	Small.	*Full.*
Miss Clara Fisher.	Not fully developed.	Large.	*Rather large.*	Large.	*Very large.*	*Full.*	Full.	Rather full.	*Large.*	Rather large.	Large.	Very large.	Large.	Moderate.	Large.	Full.	Moderate.	*Rather large.*	*Full.*	*Rather large.*	*Large.*
Raphael.	Very large.	Large.	*Full.*	Very large.	Large.	*Large.*	Very large.	Full.	*Very large.*	Rather large.	Very large.	Rather large.	Large.	Large.	Full, or rather large.	Large.	Rather large.	Rather large.	Rather large, or full.	*Large.*	*Large.*
Sheridan.	Full.	Large.	Large.	Large.	*Very large.*	*Large.*	Moderate.	Rather full.	Large.	Rather large.	Large.	Very large.	*Rather Large.*	Moderate.	Rather large.	*Rather full.*	Large.	Full.	*Rather full.*	Full.	Rather large.
Voltaire.	Large.	Full.	Large.	Very large.	*Very large.*	*Very large.*	Rather full.	Large.	*Very large.*	Large.	Extraordinarily large.	Full.	*Rather large.*	*Large.*	Extraordinarily large.	*Rather small.*	Large.	Full.	Large.	Large.	Large.

Order II. INTELLECTUAL FACULTIES.

	Individuality (Lower).	Form.	Size.	Weight.	Colouring.	Locality.	Number.	Order.	Individuality (Upper).	Time.	Tune.	Language.	Comparison.	Causality.
Thurtell.		*Large.*			Moderate.	Moderate.	Moderate.	Full.			Moderate.	Full.	Moderate, or rather small.	Moderate, or rather small.
Haggart.	Moderate.	Full.	Moderate.		Small.	Large.	Moderate.	Full.	Moderate.	Moderate.	Full.	Full.	Moderate.	Full.
Fallet.	Full.	Rather large.	Full.		Full.	Moderate.	Full.	Rather full.	Full.	Moderate.	Moderate.	Very small.	Small.	Very small.
Miss Clara Fisher.	Large.	*Full.*	Moderate.		Moderate.	Full.	Rather full.	Moderate.	Full.	Full.	Full.	Large.	Full.	Large.
Raphael.		*Large.*	*Large.*		*Full.*	Rather full.	Moderate.	Large.		Full.	Full.		*Rather large.*	Large.
Sheridan.	Very Large.	Moderate.	Large.	Full.	Full.	Rather large.	Small.	Moderate.	Large.	Moderate.	Full.	Large.	Full.	Rather full.
Voltaire.	Full.	Large.	Rather large.	Rather large.	Rather full.	Large.	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 chaacter. In the Table opposite, I have contrasted the developements 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*, *combativeness*, 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 conscientousness both are deficient.

Voltaire should also have excelled Haggart as a thief. Both have secretiveness *very large ;* but Haggart has acqusitiveness 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 predetermined 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

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* 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 conscientousness, 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 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 occassionally 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*;†

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* 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 "*emminent 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 "*Dictionaire Philosophique*,"—the reviler of revelation, in whose eyes all religion was a farce, and every notion of futurity a jest,) has thus been *canonized* 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 occassionally, 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-

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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

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* 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,—$\frac{3}{1}$." * 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

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* 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

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* 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.‡

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* 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

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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 hatter'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-

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* 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-

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* 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

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

* The *Trausi*, 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 rongeans se font savans jusqu' aux les dents."* But the truth is, that Phrenology has made very little progress. Drs Gall and Spurzhiem 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

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* " 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 prooved 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.