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# ELEMENTS

OF

# PHRENOLOGY.



BY

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*Not printed on best paper  
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ANNEX  
Friendship

John Jay  
Washington  
Dated 17th Nov 1787  
The

## PREFATORY NOTE.

*To the Pupils of the Medical Department of Transylvania University.*

GENTLEMEN,

This Essay is with peculiar propriety addressed to you, as it was prepared and published at your request, and under your patronage. Should it prove in any measure instrumental in dispelling error, eradicating prejudice, defeating calumny, or propagating truth, the merit of the issue will be in no small degree your own. But for your solicitation and encouragement, it *certainly* would not have appeared *at present*, perhaps not at all.

Acquainted as you are with the unusual haste, and the peculiar pressure of professional engagements, under which it has been composed, it would be superfluous in me to apologize to you for its literary imperfections. Whatever temper others may manifest towards it, on this account, you, I know, will receive it with indulgence.

Books are written for various purposes; some to instruct *directly*; some to amuse; and others to instruct *indirectly*, by at once awakening inquiry, and indicating its objects and its course.

For the latter purpose chiefly has this Essay been prepared. Amusement it is neither intended nor calculated to afford. The amount of matter it contains, even admitting it to be all correct, is sufficient to furnish but little instruction. But the subject

of which it treats is pre-eminently important, and the field to which it directs inquiry is as ample in compass, and as rich and diversified in its productions, as any that man can be invited to cultivate.

In its brief and abstract disquisition respecting *matter* and *spirit*, it may be justly said to embrace the universe. As far as we are authorized to express even a conjecture on the subject, creation is composed of those two substances, and nothing else. They occupy and engross the entire bounds allotted for the residence and action of created being, and, in the most extensive meaning of the term, constitute collectively the *system of nature*.

They are equally creatures of the same goodness, the same wisdom and the same power, have assigned to them distinctly their appropriate offices, and, in their respective ranks, are alike perfect and alike efficient. Did there not exist between them an essential aptitude for co-operation, and a radical dependence on each other for the functions they are to perform, they would not have been, by an omniscient Being, thus closely associated in the economy of the universe. Derange the material fabric of creation, and as much confusion and disaster will ensue, as if it were *created* spirit that was disturbed. Take from matter its properties, its powers, and its place, and you may as well interfere with the attributes of spirit. Ascribe to spirit functions that do not belong to it, and the error is as gross, and thus far as dangerous, as if you attributed too much to matter. Here, as, in most other instances, the well known and oft quoted sentence of the poet, "*ibis tutissimus in me-*



*dio*," is perfectly applicable. Pure *spiritualism* is as rank heresy as pure *materialism*. The reason is obvious. Each hypothesis is a departure from truth, and calculated alike to degrade one kind of substance *below*, and elevate another *above* its appropriate rank. Each hypothesis takes from nature the simplicity, harmony, and adaptation which God has established. Thus far I speak in relation to the *universe*, as a *connected whole*.

To man, as a systematized part of it, similar observations may be correctly applied. He, like the universe itself, is composed of two created substances, *matter* and *spirit*. To make him what he is, those two substances are *equally essential*. Remove either of them, he is man no longer. Take away his spirit, he is reduced to a mass incapable alike of perception, volition, or reason. Take away his material portion, and we know not what he is—a spirit still—"the ghost of what he was;" but under what form or mode of existence and action, we are perfectly ignorant. On this subject revelation *has not* fully and distinctly informed us, and human reason *cannot*.

Whether, when the spirit is separated from the body, it remains, *for a time*, a *disembodied* spirit, or is united immediately to another organized and *material fabric*, is a question respecting which the most enlightened and pious individuals differ in opinion. Nor am I forbidden by a due regard to scriptural authority to say, that those who adopt the latter view of the subject, would seem to be supported in their belief, by the most plausible evidence.

Every departed individual spoken of in Scripture, whether he be a patriarch, a saint, a mere worthy, or a sinner, is represented as possessing a *material form*. Abraham appears with Lazarus in his *bosom*, and the Rich man begs for a drop of water, to extinguish the tormenting fever of his *tongue*—expressions which indicate distinctly *material existence*.

Shall I be told that this is *metaphorical* language?—Be it so.—That which announces the resurrection from the dead is *not* metaphorical.

If it be true, that the mind of man can, as a *disembodied spirit*, think, and act, and enjoy, and suffer, where is the *meaning* or the *end* of the resurrection? If matter be not essential to the spirit, in these respects, why re-encumber it with such an associate? To say the least, the act would be supererogatory. But to the dispensations of heaven no act of this description must be imputed. Either the resurrection is useless, and the annunciation of it a fable, or matter in some form is essentially necessary to fit the mind for its functions and its rewards. As far as relates to this subject, then, I venture to assert, that the doctrines of Phrenology are much more consonant with the tenets of our religion, than the doctrines inculcated by Locke and his followers.

Phrenology maintains that material organs are essential to enable the mind not only to exercise the external senses, but to perform every other process, whether of feeling or of real intellection. Revelation confirms this doctrine, by teaching us that, after death, the spirit must be re-united to matter, to render it a subject of reward and punishment.

The *reputed* immoral and irreligious tendencies of Phrenology have not only very greatly limited the study of it, but have arrayed in opposition to it a host of enemies.

The proceedings against the science on this ground have been exceedingly illiberal. No doctrine ought to be denounced or rejected merely on account of its *supposed consequences*. Such an act is like condemning an individual to certain punishment, before he is convicted of any crime.

To proceed correctly, first prove the science to be *false*, and the *consequence* of its prevalence can be no longer doubtful. Or prove it *true*, and the nature of its tendencies is equally certain. Every false doctrine is necessarily *injurious*, and every true one, in some way *beneficial* to the interests of man. To predicate evil of truth, would be to slander and insult the AUTHOR of truth. Away, then, with the disingenuous and unmanly practice of attempting to blacken and defeat by calumny, doctrines that cannot be overthrown by reason!

By the intelligent and the liberal, to whom alone I address myself, I trust that a sufficiency of exposition and argument will be found in the seventh section of this essay, to defend Phrenology from the charges of immorality and irreligion, that have been preferred against it.

One topic more, and I shall close this note. The tongue of slander has been busy with my public character on account of its connection with the science of Phrenology. On this ground I have been

accused of irreligion, in every shape and under every appellation—*materialism, deism, and atheism.*

As a private individual, I make but little account of malicious gossiping and petty defamation. I cannot descend to soil myself in a foul stream, by attempting to trace it to its fouler source. A tattling and a slanderous tongue is always associated with an ignominious soul; and were I not so framed as to have an inherent disposition to despise both, and pass them by in silent scorn, my feelings would compel me to despise myself.

My appeal to you, therefore, on this subject, is in my public capacity. You have *all* been my pupils and auditors for three months; *some* of you for more than thrice that period. To yourselves, then, I leave it to make known, in any way you please, whether I have ever, in your presence, publicly or privately, advanced a position, or expressed a sentiment, *immoral, irreligious, or indecorous.*

Permit me to assure you of the sentiments of high and affectionate regard with which I have the honour to be,

Gentlemen,

Your sincere friend and

faithful servant,

THE AUTHOR.

Lexington, January 15th, 1824

# ELEMENTS OF PHRENOLOGY.



## INTRODUCTION.

THIS science is divided into Phrenology *proper*, and Craniology.

The *first* treats of the connexion and reciprocal influence of the mind and the brain.

The *second*, of the quantity and figure of the brain, as manifested by the size and form of the cranium.

By a knowledge of both, the experienced phrenologist is enabled to judge of the *natural* amount and general character of the intellects of individuals, from an inspection of their heads.

If the science be true, its practical utilities are manifold and great, a consideration which should be alone sufficient to lead to an *unprejudiced* examination of it every individual who is friendly to that amelioration of the condition of man which it is calculated to produce. If, on the contrary, it be found false and untenable, the sooner it is refuted and overthrown, the better. In either case, justice requires that it be faithfully studied, which is all that its advocates ask in its behalf.

This publication is but little more than a horn-book on the subject, being a mere digest of a few lectures delivered by the author in his course of instruction on the institutes of medicine. He prints it at the request of his class, to whom it will serve as a remembrancer of what they have already heard, while it may indicate to others topics of inquiry, which, without some aid of the kind, might not have occurred to them. He hopes it will not be without its influence in achieving one object further. By making the real principles of the science better and more extensively known, and presenting them in the innocency which rightfully belongs to them, it will remove, or at least weaken, conscientious scruples, and lead to honest research. In doing this, should it exhibit no higher claim to regard, it will contribute *indirectly* to the diffusion of truth.

## FUNDAMENTAL PROPOSITIONS.

I. MAN is a *compound* being, consisting of *soul* and *body*, or *simple* spirit, and *organized* matter.

II. Matter and spirit can exist and act *independently* of each other, but, as far as our knowledge of them extends, neither the spirit or mind of man, nor the matter of which his body is composed, can *thus* act *intellectually*.

III. *In his present condition*, the co-operation of both is essential to *every intellectual process*. For all the purposes of intellect, his mind, during his state of compound existence, is as inefficient without the aid of organized matter, as the latter is without the aid of mind.

IV. The brain is the organ of the intellect—the necessary associate and co-partner of mind in *every intellectual operation*.

V. The brain is not a simple, but a *compound* or *multiplex* organ. It appears to be divided into three regions or leading compartments, each containing several subdivisions, or minor portions of cerebral matter. Of these compartments, one is the seat of *active propensities*, another, of *moral sentiments*, and the third, of the *real intellectual faculties*. This, as will be more particularly stated hereafter, is apalagous to an ancient division of the intellect into *anima*, *animus*, and *mens*, each power occupying in the brain a separate seat.

VI. To the existence and exercise of each original *propensity, sentiment, and intellectual faculty*, a specific cerebral organ is necessary.

VII. Originating interiorly near the centre of the brain, these organs run towards its surface, and constitute collectively the cerebral mass.

VIII. The situation and functions of many of them are known; and, when strongly developed, they produce cranial protuberances, rendering their existence and size a matter of observation.

IX. Respecting the condition of the mind, when separated from the body, or the particular mode in which it may then act, phrenology hazards no opinion. Nor does it attempt an exposition of the manner in which, when connected in man, mind and matter influence each other.

These propositions constitute, collectively, the strong hold meant to be defended in the following pages. All mere fault-finding and caviling at points that are not essential to the establishment of the science, will be disregarded. From such petty annoyances even divine truth is not exempt. Human science, then, must patiently submit to them. Those whose ability extends no further, can clamour and call names. Nor is it possible to silence them, except by neglect.

“Let Hercules himself do what he may,  
The cat will mew, the dog will have his day.”

Under this head, I shall only further state, what must have been already observed by the attentive reader, that Phrenology differs essentially in the three following fundamental points from all other schemes of mental philosophy.



1. That there is an absolute necessity for the *union* and *joint operation* of *matter* and *mind* in every *intellectual process*.

2. That every *specific intellectual* operation can be performed only by means of a *specific* and appropriate *organ*.

3. That by their growth, these organs so modify the figure of the head, that their situation and relative size can be discovered by an inspection of it.

Phrenology further maintains that education can *add* to the intellect no *new* faculties, but only cultivate and regulate those derived from nature.

## SECTION I.

*Postulate.* The mind of man is a simple, immaterial, indivisible substance, immortal in its existence, and in its nature more exalted and excellent than matter.

But with matter it must have some affinities, otherwise it could neither be intimately connected with it, influenced by it, nor dependent on it in its susceptibilities or its operations.

Matter, although inferior to spirit, has been created by an all-wise and all-perfect Deity, as a fit associate for it, at least in this world, and united to it as a worthy co-partner and necessary instrument in all its transactions during its continuance in its sublunary abode.

NOTE. In all my comparisons of matter with spirit, it is to be understood that I mean *created* spirit. The *Great uncreated Spirit* is above comparison.

Let no one, then, become the scandalizer of matter, by representing it as in its nature degraded and ignoble. Such defamation is libellous towards Him who created, endowed, and configured this substance for high and important purposes in the universe.

Of these purposes one of the most exalted would seem to be its union with spirit, to be made its associate and vehicle, to communicate to it the elements of knowledge, and to serve as its instrument in all its operations.

Still further to demonstrate the importance of matter, let us fancy its instant and entire extinction. In such an event, where would be the beauty, the harmony, I had almost said, the utility of the universe! Where, indeed, would be the universe itself! or what would be its character! Instead of that magnificent pageant of peopled suns and systems, rolling through space, and exhibiting a scene of sublimity and grandeur, worthy of the conceptions and exertions of a God, *existence*, could we so name it, *creation*, could the term be used; would be a lightless, noiseless, tenantless void! Spirit would doubtless still remain, but what would be its objects, its employment, or its efficiency? In what way would it exercise its powers, or on what subject would it act? The phrenologist is privileged to ask these questions. Let the mere spiritual metaphysician answer them as he may.

For aught we now *know* to the contrary, were matter thus annihilated, spirit would want both the means and the sources of further improvement.

What, at present, are the means and the sources of improvement to the mind of man, the only spiritual being of whose operations and efficiencies we possess any knowledge? I answer, *matter*, and *that alone*—the senses, the *brain*, and the *material* universe. *Matter* alone constitutes both the means and the subject of the mind's research. In our present condition we possess no powers to inquire *directly* into any thing else. Nor have we any assurances that such powers will be hereafter bestowed on us. Of the universe of spirit, apart from our own minds, we know nothing; nor, with our present faculties, can we learn any thing, except by the aid of material analogies. To be more specific. The subject of the science of astronomy is matter. The instruments we use in the pursuit of it are matter, and the mind studies it by the aid of material organs. The same is true of meteorology, of experimental philosophy, of physiology, of natural history, of chemistry, of mineralogy, and of every other science attainable by man. Of theology, the subject is indeed immaterial, but the study is prosecuted by the aid of matter. This is true as well of revealed as of natural religion. Admit that spirit is the most efficient principle, matter constitutes the machinery of the universe.

Matter, then, although it holds a lower rank, is no less essential in creation than mind. Nor does it fill with less perfection the station assigned it. It is, I repeat, fitted, in all respects, by its divine author, as a worthy and suitable associate, co-partner, and co-adjutor of spirit in the economy of the universe. And that economy could be conducted as well with-

out spirit as without matter. Deprived of either, it could not be conducted at all. For the perfect accomplishment of the great scheme of things, these two substances are necessarily united and adapted to each other by infinite wisdom. What God himself, then, has thus, for the highest and the best of purposes, joined together, let no man irreverently attempt, even in imagination, to put asunder.

These remarks are made with a reference to those philosophers, who, in relation to intellection generally, make it their business to elevate mind and degrade matter—(I mean particularly cerebral matter)—who, in this respect, manifest a strong disposition to make mind every thing, and matter nothing. I might, with truth, remark, that, until very lately, such were both the disposition and the practice of every philosopher belonging to the *orthodox school of metaphysics*. Although facts and phenomena, which they could neither deny nor resist, compelled them to admit matter as an occasional co-partner in the operations of mind, their admission of it was reluctant and niggardly, and they never assigned to it its legitimate rank. An examination of their writings will definitively show, that this assertion is neither incorrect in substance, nor extravagant in degree.

From the sentiments here expressed, let no one do me the injustice to call me a materialist. The charge would be equally unfounded and offensive. It would be regarded as a disingenuous and unmanly attempt to check discussion, trammel free inquiry, and arrest, for a time, the progress of truth.

In reference to the composition of man, I believe, as already stated, that he consists in part of *spirit*, and in part of *matter*, the former being the nobler part of his nature. But I cannot unite in the degradation of the *latter*. It also is noble and excellent, although in the second degree. It also is the child and creature of God, and I can neither speak, nor think, nor feel, degradingly towards any of *his* works. They are all equally excellent in their kind and degree, and such did HE HIMSELF pronounce them, as soon as he had finished the business of creation.

While I do homage to the *mind* of man, I do little less to the substance and exquisite structure of his *body*. Nor can I estimate very highly either the knowledge or the feeling of that individual, who coldly refuses to unite with me in sentiment. I can cherish no sympathies with that philosophy, which makes a merit of *libelling* the body of man—of representing it as a tenement unworthy of his mind, and thus calumniating the material *chef d'œuvre* of God on earth. He *deliberately* constructed it as a suitable mansion and instrument of the mind, and it is impossible that he could have been either mistaken in his plan, or defective in his workmanship. Were it a blot in the universe, or in any measure unworthy of his other works, he would new-model it, that creation might be, in its kind, as perfect as himself. To assert the reverse of this, would be to deny the perfections of God. To represent any of his works as *imperfect in their place*, and unfit to act their part in a system of universal op-

tunism, would be to declare him *finite* in his *wisdom*, his *power*, or his *goodness*.

To those who have faithfully and minutely examined it, the aptitudes of the body to all the purposes and exigencies of the mind, appear, in the highest degree, striking and exquisite. Alter but one of them, and harmony is violated. Renovate the aptitude, and harmony is restored.

Who does not know, that as the body increases in health, and strength, and every perfection, the mind exults in a simultaneous augmentation of all its efficiencies? and that as the former declines through age or disease, the latter experiences corresponding infirmities?

However much I may be delighted, then, with his simple beauties of expression, I can never concur in sentiment with the poet, when he declares, that

“The soul’s dark cottage, batter’d and decayed,  
Lets in new light through chinks that time has made.”

On the contrary, it is known to every one, that the decay of the “soul’s cottage,” like that of other dwellings, is productive of serious inconvenience to the tenant. And this phenomenon, as will hereafter appear, is explicable only on phrenological principles. It is through these principles alone, that, in the estimation of man, matter can be restored to that rank which its Creator assigned it in the general arrangement and economy of the universe.

It is to be clearly understood, that the preceding remarks are not intended to degrade spirit, or deny its powers. They are meant merely to show, that *created* spirit is not *all-efficient* in relation to the at-

tainment of knowledge; but that, in this respect, *the spirit of man*, at least, must co-operate with matter, and that the latter substance possesses also, as a co-adjutor of the former, high intellectual rank and capability. Spirit and matter are the right and left hand of the Deity in his government of the universe.

We are told by metaphysicians, that *spirit* or *mind* alone feels. The assertion is *gratuitous*, and the position it would establish a *mere hypothesis*. It may be granted as a postulate, but cannot be claimed as a theorem. It is neither a primitive nor a demonstrated truth.

Mind is indeed *necessary* to feeling. But, if we rely on *evidence*, which must alone govern us as rational beings, so is matter.

As far as our knowledge of nature extends, no being feels that has not mind. But every being which observation can reach and sense recognize, possesses also matter. Disorganize this matter, and it feels no longer. It may, indeed, be *asserted*, that the mind still continues to feel. But, in discussing a subject, it is not philosophical to receive *assertion* for *proof*. Nor will it be offered as such by any one acquainted with the nature of evidence, whose only object is the establishment of truth. The sophist may use it to delude the multitude, but the honest and competent inquirer rejects it as trash.

*Show* me a place where feeling exists, and I will prove to you that *there* is matter.

Feeling is an intellectual act or state of being, in the achievement or enjoyment of which mind and matter must mutually co-operate. In man, it is the

offspring of his compound existence. Destroy his material organs of feeling, and he feels no longer. His mind still exists, but of its state or condition of existence, we are totally ignorant.

To study man either as a *feeling* or a *rational* being, we must study him in his *compound character*. To attribute feeling either to his *mind* alone, or his *matter* alone, is alike gratuitous and unphilosophical. Of neither of these substances, *exclusively*, is that property predicable. It is the offspring of both *in a state of union*. Disunite them, and we have no evidence of its being possessed by either. As well may we assert that the material offspring of animals is the production of the *male alone*, or the *female alone*, while truth proclaims that it is the joint and common production of both. So is intellection, of every kind and degree, the common production of the mind and the brain.

Is it our wish to understand the nature and effects of *water*? and can we learn these by studying separately the nature and effects of *oxygen* and *hydrogen*? or can we acquire a knowledge of sulphuric acid by studying the character of oxygen and sulphur? If we wish to attain a knowledge of the functions of the liver, we can never accomplish our end by dissecting or decomposing that organ, and studying its elements apart from each other. Nor shall we ever acquire a correct knowledge of man, composed as he is of mind and matter, until we relinquish our attempts to separate these two substances, and study him faithfully in his compound capacity



## SECTION II.

( CAN the mind of man, as a simple, indivisible substance—a mere unit in essence—possess, of itself, a plurality of faculties? )

This question, intricate as it is, *must* be examined. It lies in my path, and is of primary importance in the science I am considering.

If, as a *single* substance, the mind possesses but a *single* power, then must it, in its multiplex operations, be aided by a corresponding multiplicity of means.

In admitting that mind is *different* from matter, I cannot believe it to be the very *opposite* of it. On the contrary, I have already declared, and now repeat, my firm conviction, that these two substances have strong affinities for each other, else they could never be intimately united, nor be made to act in harmony and concert, their operations arising from their reciprocal influence.

Of mind we possess no *immediate* or *primitive* knowledge. Nor have we any faculties by which to acquire it. The elements of all our primitive knowledge are admitted through our senses. But we have no senses to give admission to the elements of the knowledge of mind. We can neither *see* it, nor *hear* it, nor *taste* it, nor *smell* it, nor *feel* it. Nor does *consciousness* give us any information of it, except that it *exists*.

Our knowledge of mind, then, is purely *analogical*. We are indebted for it exclusively to our knowl-

edge of matter. That this is true, appears conclusively from the very terms by which we designate both mind itself and all its operations, and all those powers, or rather functions, which we *denominate* its faculties. Did circumstances permit, the correctness of this assertion could be clearly demonstrated.

We possess, then, ourselves, with the mind of man no *primitive* or positive *acquaintance* to authorize in us the belief, that, single in its essence, it is notwithstanding endowed with a plurality of faculties. Nor have we immediate access to any source from which such information can be derived, other individuals, even the most highly gifted and enlightened, having no more primitive knowledge of the subject than ourselves.

But all *reasoning* dissuades us from the belief, that, *in created beings*, *unity* of essence can ever be compatible with a *plurality* of faculties.

Were this the case, then would the *subject* be superior to the *predicate*, the former being *unity*, the latter *plurality*.

Then would the thing *contained* be superior to that *containing* it.

The effect superior to the cause.

The endowment superior to the thing endowed.

But these conclusions, legitimately drawn, imply contradictions. Their premises, therefore, are necessarily unfounded.

If, then, neither our own primitive knowledge, information derived from others, nor reasoning on first principles, can lead us to a belief in the plurality of

the faculties of the mind, let us have recourse to analogy, the only remaining source of instruction, and examine the evidence imparted by that.

Here, again, every thing announces the incompatibility of unity with plurality.

( Throughout her whole empire, Nature presents us with a universal scheme of *aptitudes* and *specifics*, by which alone her order, regularity, and harmony are maintained.

Specific cause, followed by specific effect, and no other.

Unity of cause, by unity of effect, and nothing more.

Singleness of nature, marked by singleness of power and mode of operation.

( Were the case otherwise, chaos would prevail. Past experience would be useless, and calculations as to the future impossible. Chance would usurp the place of established order, and uncertainty and doubt become the *master* feelings, if not the *only* feelings, of the mind.

Did not the same specific cause produce the same specific effect, and nothing else, unity of cause, unity of effect, and nothing else, then would the connexion between cause and effect be dissolved, memory rendered unavailing, and judgment and reason become unmeaning terms. It is on the well known, acknowledged, and undeviating connexion between specific cause and specific effect, unity of cause and unity of effect, that all our reasonings, calculations and judgments are necessarily founded.

The same cause, indeed, acting on *different subjects*, produces *different effects*. But, here, the subjects uniting their different influences with that of the cause, *it is virtually* no longer the *same*, but varies with every different subject on which it acts. To continue the same, it must act on the same subject. in which case the effect can never vary.

It appears, then, to be a fundamental law of creation, that unity of substance possesses unity of power, and nothing more. Indeed, the very proposition may be regarded as an axiom in philosophy. It presents to the mind a primitive truth, which is immediate, universal, and irresistible in its influence.

Hence, the mind of man being single in its essence, cannot possess a plurality of faculties.

Nor can it, *alone*, be thrown into a *plurality of states*. Unless it be united to something else, in order that complexity may be produced, to predicate of it plurality of any kind, is to assert a contradiction.

Unity of cause producing plurality of effect!—unity of essence possessing plurality of powers!—unity of substance passing successively into a plurality of states!—Simply to present such notions to an unprejudiced mind, is to demonstrate their fallacy.

Throughout creation, nature exhibits in her chain of causation, nothing but a vast scheme of unbroken correspondences. Unity of cause producing unity of effect—unity of substance, unity of power—complexity of cause, plurality of effect—complexity of substance, plurality of power—identity of cause, identity of effect—diversity of cause, diversi-

ty of effect—identity of substance, identity of power—diversity of substance, diversity of power. Abrogate or reverse this law, and confusion will ensue, as certainly as darkness follows the disappearance of the sun.

But the intellectual processes in which the mind is concerned, are exceedingly *various*.

Shall I be asked, in what way, being a simple substance, it produces this *variety*?

I answer, by being united to a diversity of means.

Illustration by *steam*.

The power of steam is *perfectly simple*—as much so as that of the mind. *Alone*, its action is *unity*, being *mechanical propulsion*, and nothing more.

But, in its *operations*, steam may be rendered exceedingly multiplex, by being united to multiplex machinery.

United to one kind of machinery, it turns a mill.

To another, propels a boat.

To a third, spins cotton, wool, or flax.

To a fourth, elevates water. And

To a fifth, moves a wheel-carriage, instead of horses.

By the same diversity of means, a like diversity of effect may be derived from the *propulsive power* of running water, which is also *simple*.

*The power gravitation.*

This power is perfectly *simple*—as much a unit, as spirit itself.

But its action may be diversified by a diversity of means.

Make it act, by a pendulum, on one kind of horological machinery, it announces the hour by the striking of a hammer on a bell.

On another, a cuckoo appears at proper intervals, and proclaims the hour by its native call.

On a third, a nightingale makes its appearance every hour, and sings a tune.

On a fourth, two herculean figures, each armed with a club, make known the hour, by the correct number of blows on a massy bell.

On a fifth, an ox and a butcher make their appearance, the latter armed with an axe, with which he strikes the former in the forehead, until the last blow that tells the hour, fells the animal, when both disappear.

*The vital principle.*

This is also a simple agent—a *unit* both in nature and power, and can *alone* perform no function. But united to matter, *variously organized*, it performs *many*.

To *vegetable* matter, organized in *one* way, it produces a peach.

—In *another*, an apple.

—In a *third*, a pear.

—In a *fourth*, a plumb. And

—In a *fifth*, a grape.

To *animal* matter, organized in *one* way, it secretes bile.

—In *another*, gastric liquor.

—In a *third*, pancreatic juice.

—In a *fourth*, urine. And,

—In a *fifth*, salina.

But in no instance can either of these structures do aught but perform its own function. A peach-tree cannot produce an apple, nor an apple-tree, a peach. Nor can the same organ secrete both urine and bile. A proof that a specific effect, and no other, must be always the offspring of a specific cause.

In like manner, the mind, although simple in its substance and its power, acting on, and aided by, *diversified material organs*, achieves a *variety of intellectual processes*. It sees with one organ called the eye, hears with another called the ear, tastes with a third called the tongue, and smells with a fourth denominated the nose. Each of these organs is specific in its character, and is, therefore, fitted for but one specific function. The mind can neither see with the nose, smell with the eye, hear with the tongue, nor taste with the ear.

The mind, then, does not, in intellection, act *alone*. Matter is its necessary associate and co-adjutor. Nothing, indeed, in nature, either *acts or exists alone*. Absolute *solitude* is not known in creation, because there is nothing in it that can be called a *vacuum*. But to actual solitude, a vacuum is necessary. Nor does any thing exist exclusively for itself. The universe is a *system* in which all things are associated and in action, reciprocally influencing and aiding each other in the performance of their allotted parts —analogous, in this respect, to the *human system*, in which all the parts are connected by sympathy, as those of the *universal system* are by attraction, and where the healthful play of each individual organ

contributes to the welfare and efficiency of the whole.

### SECTION III.

#### *The Brain is the organ of the Intellect.*

Were antiquity and high authority to be received as definitive evidence, the truth of this proposition could be easily proved. The opinion it announces is coeval perhaps with the study of metaphysics. It is as ancient, at least, as our earliest notices of that science. In every enlightened age and country, of which we have any knowledge, some of the *greatest* and *best* of men have been its advocates. It is not a little singular, then, that it should now be considered by many, who ought to be better informed, as a new, an immoral, and a dangerous heresy.

But in whatever estimation I may hold the opinions of distinguished individuals, my belief of the proposition I am considering does not rest on their authority. Consulting nature as the only oracle that never deceives nor answers equivocally, I believe the brain to be the organ of the intellect for the following reasons:

1. That organ remaining sound, every other part of the body, not excepting the nerves, the ganglia, and the spinal marrow may be injured to any extent compatible with life, and the intellect continue unimpaired.

2. In tetanus, a disease which never assails the



brain, but shatters completely the functions of the nerves, the intellect is not affected.

3. The other parts of the body remaining untouched, compress, concuss, or otherwise severely injure the brain, and the intellect\* suffers,—is often extinguished.

4. To mere *automatic life*, brain is not necessary. Hence vegetables and many of the lower orders of animals, which possess life in great vigour, have no brain.

Hence acephalic or headless monsters, even among the more perfect animals, have been born of full foetal size, healthy and vigorous, and lived some time, though deprived of brain.

Hence, also, large portions of the superior parts of both hemispheres of the cerebrum, and likewise a considerable portion of the cerebellum, may be destroyed by suppuration or otherwise, and life not be extinguished.

If, then, the brain be not essential to *mere life*, it is either *useless*, or intended for other and *higher* purposes.

But nature makes nothing in vain, more especially an organ so *exquisitely constructed* as the brain. That organ, therefore, must be destined to the performance of some function corresponding to its character.

5. In ascending the scale of animated nature, from the lower to the higher orders, we find that the num-

\* By "Intellect," I mean neither the mind nor the brain; but the power arising from their union, or the functions performed by their co-operation.

ber of the intellectual faculties increases in proportion to the increase of the number of cerebral parts —i. e. in proportion to the complexity of the brain, is the multiplicity of the faculties. Nor is this increase in the number of intellectual faculties proportioned to any thing else in animals but the increase in the number of their cerebral parts. )

Corresponding to this view of things is the growth of the brain of man himself. First, in the fœtus in utero, is formed the spinal marrow. To that is superadded the *cerebellum*. and to that again, portion after portion, perhaps I might say, organ after organ, of the *cerebrum*, until the whole is completed. Nor is this completion *really effected* until the age of puberty.

Thus, in relation to brain, man exhibits, in his progress towards perfect organization, nearly the same gradations which are manifested by an ascending series of the lower orders of animated nature. And in proportion to the development of his brain is that of his intellectual faculties.

6. Is the development of the brain *defective*? So, in a corresponding degree, is the intellect.

Proof of this we derive from the brains of *idiots*, which are never well developed.

7. Corresponding to the changes in the organization of the brain, in the progress of life from its commencement to its close, are those of the intellect.

In infancy and childhood, the organization is imperfect. So is the intellect alike imperfect.

In youth, a better organization—a better intellect.

In manhood, a perfect organization—a mature intellect.

In the evening of life, organization and intellect are both on the decline.

In extreme old age, organization is greatly decayed, and intellect is nearly extinguished. A *second intellectual infancy* now exists.

Either the mind, then, grows old like the body, and, like the body, *dies*; or the brain, as its organ, grows *old*, and becomes unfit for the business of intellection.

The *latter is true*. ( The mind neither grows old nor dies, but “flourishes in immortal youth” and vigour, while the brain decays and becomes unfit for intellection, as the muscles do for voluntary motion.

My conviction of the immortality of the mind, then, compels me to adopt and cherish the belief, that the brain is the organ of the intellect.

Strong developments of brain, and energetic manifestations of intellect, are always united. Hence, the head of every individual, who is truly great, has something in its appearance peculiarly expressive—something that bespeaks superior excellence.

8. Are the developments of the brain and the completion of its organization precocious or tardy? Precocious or tardy, in the same degree, are the manifestations of intellect.

9. In men and women the cerebral developments are exceedingly different, as is manifested by the

different forms of their heads. So, in like manner, are their intellectual faculties.

No one will contend for the existence of *male* and *female* minds, in the literal acceptation of the terms. The difference, then, of the *male* and *female intellect* must depend on different organization alone.

10. Intellectual faculties descend, by inheritance, from parents to children. But this is known to be the case, only in proportion as cerebral developments thus descend.

The child whose developments of brain resemble those of his father, resembles his father in native intellect, while he whose developments resemble those of his mother, possesses his mother's intellect.

11. When engaged in intellectual operations, we are perfectly conscious that we are exercising the *brain*—as clearly so, as we are of exercising our muscles of voluntary motion when we are speaking or walking. This is particularly the case when our intellectual exertions are intense. On such occasions, the temporal arteries often throb with unusual force, and a preternatural fulness is felt in the cerebral vessels.

12. Detach from the brain any part of the body, by cutting or destroying the nerve that has connected them, and that part can be no longer acted on by the mind. Nor can the external senses perform their functions if their nerves be cut or otherwise destroyed. Hence the brain is obviously the organ of the mind. Nor does the mind reside *immediately* in, or act *immediately* on, any other part of the *nervous* system, as distinct from the cerebral.

## SECTION IV.

*Objections to the opinion maintained in the last section stated and answered.*

*Objection I.* The brain, say certain physiologists and metaphysicians, is not the seat of all the intellectual faculties, the moral sentiments in particular being seated in the *heart*, or some of the *abdominal viscera*. Hence the expressions, a *benevolent heart*, an *excellent heart*, a *feeling heart*, *bowels of compassion*, &c.

It is not a little singular that so enlightened a physiologist as the late M. Bichat, should have fallen into an error so perfectly palpable. He placed the moral sentiments in the *heart*.

The fallacy of this notion is evinced by the following considerations.

1. The inferior animals, although greatly deficient in moral sentiment, have all the viscera of the thorax and abdomen in as high perfection as man.

2. The same thing is true of *idiots* and *acephalic monsters*. Defective in moral sentiment, some of them entirely destitute of it, *they* also have the lower orders of viscera in due size and perfect organization—all, indeed, except the brain.

3. In most quadrupeds, the thoracic and abdominal viscera bear a strong resemblance to each other, while their moral qualities are exceedingly different. This is true of the dog, the wild boar, the sheep, the stag, the ox, the beaver, the horse, the

hare, the tiger, the lion, and many others. But their brains are widely different.

The *passions* are believed by many to have their seat in the heart or the stomach, because those organs are deeply affected by them. But this is to be explained through the medium of sympathy. The brain is specifically impressed by the several passions, and the heart, stomach, and other parts of the system, sympathize with it in its affections.

*Objection II.* We are told that the *brain* cannot be the organ of the *intellect*, in as much as the *latter* remains unimpaired under deep and serious læsions of the *former*—even under the destruction or loss of a considerable portion of its substance.

*Answer.* This objection has no weight, because the brain is *double*; and, in the cases referred to, the injuries are done only to *one hemisphere*, the other remaining sound.

One eye, one ear, or one nostril, may be much injured, or even destroyed, and the senses of seeing, hearing, and smelling, but slightly affected.

The duplex character of the brain, and the independence of the two hemispheres, are proved,

1. By dissections.
2. By the existence of insanity on *one side* of the head and not on the *other*, the sane side *correcting* the aberrations of the *insane*.

A case of this kind is mentioned by Professor Tiedemann—the diseased individual was named Moser.

Another, of a clergyman, by Professor Gall. This gentleman heard constantly with his left ear vitupe-

rative and offensive sounds, which his right ear, or rather the portion of his brain connected with it, discredited.

Another case perfectly analogous, produced by a fall from a horse, exists in Kentucky, not far from Lexington.

Several others are reported on authority that must be respected.

3. By the opposite condition of the two hemispheres of the brain, in hemiplegia, one being paralyzed, the other sound.

Hence the intellect may continue unaffected, unless both hemispheres of the brain are injured.

*Objection III.* In Hydrocephalus internus, say our opponents, the brain is sometimes entirely absorbed, or *resolved into water, as they assert*, while the *intellect continues*, and is not much impaired.

*Answer.* Tulpinus, Vesalius, Morgagni, and other writers, distinguished for their knowledge of morbid anatomy, deny *this statement*, and declare that the brain is neither entirely liquified, nor *entirely absorbed*, but only *lessened in size*.

After numerous dissections in presence of competent and disinterested spectators, Gall and Spurzheim assert the same. And their assertion is true. Pressed by the secreted waters, the cerebral absorbents carry off a part of the cerebral mass, but never the whole. It is unquestionable, then, that often, in hydrocephalus, the brain is diminished in bulk, but, in no case, is it ever entirely removed.

Professor Dudley authorizes me to say, that in every dissection of hydrocephalic patients he has

made or seen, he never failed to find a considerable amount of brain.

*Objection IV.* It is asserted that, in other cases, the brain has been found ossified, and even petrified, without an entire obliteration of intellect.

This assertion is also unfounded. A minute and accurate investigation of all cases that could be designated, has proved it so.

Ossifications of certain portions of the brain or its membranes have been often found. So have osseous tumours, on the inside of the cranium, filling a part of its cavity, and pressing on the brain. But a brain *ossified throughout*, the intellect still remaining and not much impaired!—such a phenomenon has never presented itself. The spectacle, should it occur, would be miraculous. As well might we look for a perfectly ossified heart maintaining, by its action, the circulation of the blood!

To a petrified brain we might apply, with equal propriety and force, the same remarks. It is believed that such an affection of that organ has never been seen.

## SECTION V.

*The brain is not a single organ, but an aggregation of several.*

That the brain is a compound or multiplex organ, is an ancient opinion.



This belief was maintained by Thomas Aquinas, Descartes, Stahl, St. Augustine, and many others of equal celebrity.

Even the ancients, as already mentioned, divided the intellectual or more refined and elevated portion of man into three parts. The *anima*, (the soul or life) the *animus*, (the agent or source of moral sentiment) and the *mens*, (the *intellectual* agent, properly so denominated.)

The first of these they seated in the base of the brain. The second, in the upper and middle portion of it. And the third, in the forehead.

The Arabian physicians, many of whom were men of high distinction and great learning, believed in the compound character of the brain, and placed *common sense* in the anterior part of it.

As early as the thirteenth century, Albertus Magnus, arch-bishop of Ratisbon, delineated a head, and marked on it the seats of the different faculties of the mind. He also placed *common sense* in the forehead.

Near the close of the fifteenth century, another delineation of the head, marked in a similar manner, was published by Peter de Montagnana, a *savant* of the time, of considerable distinction.

Because *imagination* is active in our dreams, and *judgment* during our waking hours, Boerhaave assigned to these two faculties seats in different portions of the brain.

The several internal senses were regarded by Haller and Vanswieten as occupying different portions of the brain.

Soemmering, Tiedemann, Wrisberg, and many others, are firm believers in the plurality of that organ.

As far, then, as *antiquity* and *high authority* may avail, the plurality or compound nature of the brain may be regarded as a truth.

But nature herself furnishes also abundant evidence confirmatory of the opinion.

By a careful and skilful dissection of the brain, the compound nature of the organ may be demonstrated.

*Analogy* leads us to the same belief.

Nature, as already stated, never produces *diversified* effects by *unity* of cause. Throughout all her works she produces uniformly specific effects by specific causes—the *same* effect, and no other, by the *same* cause.

Each animal possesses its own specific form, suited best to its own peculiar mode of life. In like manner each organ of the animal system is specifically fitted for the function it performs, and no other. The liver secretes bile, and nothing else, the kidneys, urine, the stomach, gastric liquor, the parotids, saliva, the skin, the matter of perspiration, and the lungs alone are suited to respiration.

The organs of external sense are specifically different from each other, and suited each to perform its own specific function, and no other.

Even in the mechanical processes conducted by ourselves, we are compelled to have recourse to specific adaptations.

We cannot saw with an augur or bore a hole with a hand-saw, shoot with a sword or cut with a mus-

ket, write with a hammer or drive a nail with a pen. Unless we apply each instrument to its proper purpose, and to that alone, our labours are fruitless and our life confusion.

But the several intellectual functions performed by the co-operation of the mind and the brain, are exceedingly and specifically different from each other.

The study of music is essentially different from the study of drawing, the study of languages from that of numbers, the study of colouring from the study of localities, while the study of architecture is different from them all.

By fair analogy, then, and legitimate induction from the premises laid down, we are compelled to believe, that these diversified processes of intellect are necessarily performed by means of different cerebral organs. If the same organ cannot be employed by nature to secrete bile, perspiration, urine, and saliva, how can she adapt the same *single, individual brain* to the different studies of language, mathematics, painting and locality? Surely the more *elevated* intellectual processes require for their perfect performance as much of wise and specific adaptation, as the *inferior* processes of organic life.

No one doubts that the *mind* of the entire range of inferior animals is *the same*. We cannot believe that the Deity formed one mind of a specific character for the horse, another of another specific character for the ox, another for the dog, another for the sheep, another for the fox, and another for the lion. One for the eagle, another for the raven, a third for the vulture, a fourth for the turkey, a fifth for the

goose, a sixth for the crane, and a seventh for the stork. Such a belief would disgrace its entertainers.

The mind, I repeat, then, of all inferior animals is the same. But their manifestations of intellect are exceedingly different both in kind and degree. This difference can arise from nothing else but a difference in the cerebral organs, by which those manifestations are made. )

The same individual manifests the several propensities, sentiments, and intellectual faculties, in very different degrees of strength.

One person acquires, with great ease, the knowledge of *languages*, but has no capacity for *philosophical pursuits*. Another is an excellent painter, but his powers of ratiocination are feeble. A third is an excellent mathematician, but has no capacity for music; while a fourth is an able mechanician, but no poet. Did the mind and the brain co-operate *as if the latter were a unit*, these phenomena could never be presented to us.

In the same individual the different intellectual faculties are developed at different periods of life. But this could not take place did the brain *as a unit or a whole* preside over them all. In that case their development would be necessarily cotemporaneous.

By referring different faculties to different organs, the successive development of them is easily explained. As its appropriate organ is developed, each faculty manifests itself.

It is thus that the various organs of the body generally are developed as they are wanted, and their

faculties are manifested in the order of their development.

Taste and smelling are manifested earlier than seeing and hearing, because their organs are earlier developed.

For the same reason the functions of the chylo-poietic viscera are manifested long before those of the organs of generation.

To allege that this gradual development of faculties arises from the actual growth and development of the *mind*, as a substance distinct from its *material associate*, would be, at once, *virtually* to deny both its *unity* and its *immortality*.

By long perseverance in any one kind of study, that of *mathematics*, for example, intellectual fatigue is induced. Vary the object of pursuit, by changing to the study of *music* or *poetry*, and the *fatigue is removed*. But this could not be the case, were the same portion of the brain still kept in exercise.

Are our *eyes* fatigued by a severe and long continued employment of them? This does not disqualify us to listen with pleasure to the tones of music, or to inhale with delight the perfume of the rose. But, did we see, hear, and smell, with the same organ, the case would be otherwise.

Indeed, to speak of fatigue of *mind* in the abstract, is to utter a contradiction—I might have said, *is to use words without any meaning*. Did the limits of this work permit me to indulge in an analysis of the subject, I could satisfactorily show, that fatigue is predicable only of a *compound substance*. Fatigue implies necessarily an *actual loss* in the subject of it

of some of its component parts. But loss of parts cannot be predicated of un-compounded mind.

*Dreaming*, which is nothing but *imperfect* or *partial* sleep—some intellectual faculties being asleep and some awake—is explicable only on the ground of an existence of a plurality of cerebral organs.

If the brain be a *single organ*, it is not possible for *one part* of it to be *asleep* and *another part awake* at the *same* time. Nor is it possible for several faculties residing exclusively in the *indivisible mind*, to be thus, *at the same moment*, in opposite conditions.

Sleep is rendered *necessary* only by exhaustion or fatigue. The object of it is to remove fatigue.

Nature does nothing in vain. But, as a simple substance, I repeat that the mind *cannot be fatigued*. Hence, it does not *require* sleep, and therefore does not sleep. Sleep, like fatigue, is predicable only of a compound substance.

Those who speak of the sleep of the simple, indivisible mind, show themselves to be ignorant of the philosophy and the intention of sleep.

Were the *mind* to sleep, being indivisible, it must *all* sleep. In that case, it could derive from sleep *no refreshment*, nor does it appear to me probable that it could ever awake again. *Fatigue*, a *necessity for sleep*, and *immortality*, are not predicable of the same being. Sleep is essentially a predicate of *compound matter*, not of simple spirit.

Somnambulism, like dreaming, is explicable only on the ground of a plurality of organs in the brain.

The same thing is true of visions, or fancied intercourse with supernatural beings.

Nor can *partial insanity*, i. e. madness on *one subject*, and sanity on every other, be otherwise explained. Here one organ is deranged, while all the others are sound. It is thus that we may see, without being able to hear, the eye being perfect and the ear not; or smell without being able to taste, for a similar reason.

The foregoing considerations seem to prove conclusively the plurality of the brain. Extinguish prejudice, and supply its place with unbiassed judgment and enlightened reason, and the arguments that have been advanced will be deemed irresistible.

*Objection.* The brain, say our opponents, does not consist of a plurality of organs, each performing a different function, otherwise we would have a plurality of consciousnesses.

This objection has no weight. We have a plurality of eyes, and yet see objects *single*, a plurality of ears, and hear *single* sounds, and a plurality of nostrils, with a single sense of smell.

Our consciousness should be *plural* only when the two hemispheres of the brain are not in unison; and so it is, as in the several cases of *one-sided* madness already mentioned.

#### *Absolute size of the Brain.*

Attempts have been made to show that the amount of intellect possessed by animals is in proportion to the absolute size of their brains.

This is an error. The brain of the elephant and of the whale is much larger than that of man; yet has the latter the highest and strongest intellect.

The brain of the monkey and of the dog are less than that of the ox; yet is the latter inferior in intellect.

The wolf, the tiger, the roe, and the sheep, have brains of about the *same size*. But the amount of intellect possessed by those animals is very different.

The brain of the bee is very small, while the intellect it manifests is considerable.

In relation to animals of different species, the extent and strength of their intellects are in proportion to the complexity of their brains rather than the size.

*The amount of intellect supposed to be in the proportion of the size of the brain to that of the body.*

This also is an error. In most small birds, such as the linnet, the sparrow, the canary bird, the red-breast, and many others, the proportion of the brain to the body is larger than in man.

In rats and mice, it is larger than in the dog, the horse, the fox, or the elephant.

Soemmering and others have attempted to measure the intellect by the proportion in size of the brain to the nerves.

This again is erroneous. The seal has a brain larger in proportion to its nerves, than the dog; and the porpoise, than the ouran-outang. Yet, in intellect, the seal and the porpoise are greatly inferior to the two other animals.

Nor has any better success attended the attempt made by Camper to measure the amount of the intellects of individuals by the extent of their facial



angles. The opinion of that writer is, that the amount of intellect is greater or less, according as this angle is more or less obtuse.

The facial angle is formed by two straight lines, one of them vertical, or somewhat inclined, according to the form of the head, touching the upper lip and the most prominent part of the forehead; the other horizontal, cutting the former, and running from the upper ends of the front teeth, to the external opening of the ear. The upper and inner angle formed by these two lines is the facial angle.

In his opinion respecting this subject, Camper is mistaken. The facial angle serves, in some measure, to distinguish the varieties of the human race; but constitutes no gauge by which to measure the amount of intellect possessed by individuals of the same race.

*Anatomical Objection.*

Certain anatomists have denied both the plurality of the brain and its subserviency to intellection, because, in their examinations of that organ, they had failed themselves to discover these things.

Ans. Before they had been taught by Gall and Spurzheim, anatomists were unacquainted with the true mode of dissecting the brain. Nor is it possible to discover the function of a part by a mere inspection of its anatomical structure. Such discovery can be effected by observation and experience alone.

Were its uses unknown, no one, by a dissection and inspection of the liver, could discover that the function of that organ is to secrete bile. Nor could

a similar inspection teach the anatomist that the office of the kidneys is the secretion of urine. Even respecting the muscles, the stomach, the blood vessels, and the heart, the same thing is true, as well as respecting the several organs of external sense. Much less could unskilful dissection be expected to point out the uses of such a delicate and complicated organ as the brain.

*On what, then, does the energy and excellence of the brain, as the organ of the intellect, depend?*

( Ans. On its size, configuration, and tone—its *extensity* and *intensity*. )

In this respect it is analogous to the muscles, whose size alone does not always determine their strength. Their tone or intensity avails them much. Hence, although a large man is *very generally* stronger than a small one, the reverse is *sometimes* true.

In like manner, although some men whose heads are small have more intellect than others possessing large heads; yet, take, promiscuously, a hundred men with large heads, and another hundred with small, the general balance of intellect will be *always* in favour of the *former*. The heads of individuals pre-eminent for general intellect are uniformly large, and of a striking figure.

A principal cause of the superiority of the male over the female intellect, is the superior size of the male brain.

That the tone or intensity of the brain has great influence in modifying the intellect, appears from a variety of well authenticated facts.

In many persons, a moderate excitement of the brain by wine or opium, adds greatly to the strength and brilliancy of the intellect.

In idiots, the same thing is true of inflammatory *cephalic* or *brain* fever. During the continuance of such fever, the intellect is surprisingly improved. On its subsidence, all the weakness of idiocy returns.

In individuals of sound minds, cerebral inflammation, resulting from mechanical injuries, has often added greatly to the vigour of the intellect.

In confirmation of this, many authentic instances might be cited. A very striking one occurred, a few years ago, in Lexington, in the person of a respectable mechanic

A similar one took place in one of the sons of the late Dr. Priestly. A fracture of the skull, produced by a fall from a two-story window, improved, not a little, the character of his intellect.

On the *immaterial mind*, these accidents could produce no effect. They only heightened the intensity of the brain.

*Is it possible, during the lives of individuals, to distinguish, with any accuracy, their cerebral developments?*

Ans. Yes.

*Of the cause of the form and size of the head.*

Whether does the cranium give form to the brain, or the brain to the cranium?

( Ans. The brain to the cranium unquestionably. )

In the growth of the *fœtus* the brain is formed *first*, and the cranium *afterwards* thrown around it for its protection from injury. Being formed, then, for the use of the brain, it is in all respects subser-

vient to it, and must necessarily assume its figure, else it would compress and injure it instead of affording it security.

As the brain expands, therefore, the cranium also increases in size, always adapting itself to the dimensions of the contained viscus.

This is certainly true of the *internal table* of the cranium, which, at every protuberance of the brain, exhibits a corresponding cavity, or *protusion* in an *outward direction*.

But, the external table of the cranium is, in all parts, *equidistant* from the internal. At every protuberance of the brain, then, *it* must exhibit a corresponding protuberance.

Such is certainly the *general rule*. And of general rules *only* are we privileged to speak. When we embrace these, we do as much as imperfect man *can* do. To all general rules exceptions exist. But they are, in the present instance, exceptions *only*.

Like the other soft parts of their bodies, the brains of old men are known to dwindle. But they do not dwindle alike *in all parts*. Certain portions of them lose their size, while others do not.

But that no absolute vacuity may exist within the cranium, wherever the brain shrinks, the internal table follows it, and thus augments, in that part, the thickness of the skull, by the augmented distance between it and the external, the latter always retaining its place. Hence, in the skulls of old men, the two tables are not, in all parts, equidistant from each other. But in the skulls of the young, and of those in the prime of life, the case is otherwise.

To real physiologists there is nothing either new or extraordinary in the fact, that, while the brain is growing, the cranium gives way to it. The brain is a soft, and the cranium a hard part.

But when a hard and a soft part come into collision, it is known that the former always recedes.

Under the pressure of an aneurism, or an abscess, or any other tumour, the ribs bend. So do other bones of the body.

The arteries form for themselves sulci in the bones with which they lie in contact.

In hydrocephalus internus, the cranium enlarges for the accommodation of the increasing waters.

These phenomena are perfectly explicable on well known physiological principles.

Where there is no brain, as in acephalic monsters, there is no cranium. A cranium formed without a brain has never yet been seen. Such a production would be useless.

Is the brain of idiots diminutive? So is the cranium. Is the former defective in any particular part? The latter corresponds with it.

From these facts it is sufficiently obvious, that the form and size of the brain regulate the form and size of the cranium. Hence, any *extraordinary* developments of the former, must necessarily be manifested by protuberances of the latter. Thus is there in nature a foundation for craniology.

## SECTION VI.

Phrenologists divide the faculties of the mind into *Feelings* and *Intellect*.

The feelings they subdivide into *propensities* and *sentiments*.

The Intellect into *knowing faculties* and *reflecting faculties*.

They denominate *primitive faculties* those which are characterized as follows.

1. Which exist in one kind of animals, and not in another; as *music, constructiveness, destructiveness*.

2. Which exist in different degrees in the two sexes of the same species; as *music, amativeness, combativeness*.

3. Which are not in proportion to the other faculties in the same individual; as *painting, music, number, poetry*.

4. Which do not manifest themselves coetaneously with the others, i. e. which appear at an earlier or later period in life, than the other faculties; as *amativeness, number, and the reflecting faculties*.

5. Which may *act or rest singly*, the other faculties being in a *different* state.

6. Which descend from parents to their offspring.

7. Which may be singly in a healthy or diseased condition, the others being in a different one.

All faculties thus characterized are *primitive and innate*.

Their functions or modes of manifesting themselves are learnt by observation.

The illustration and confirmation of these remarks will appear hereafter.

We are told by individuals who wish to bring the science into disrepute, that Phrenology may be *true*, and Craniology *false*.

This is a mistake. Phrenology may be better understood than Craniology; but they are indissolubly united, and must stand or fall together. Phrenology treats of that which is the *cause*, Craniology of that which is the *inevitable* effect. As well may you, in any other instance as this, predicate *truth* of the *cause* and *fallacy* of the *effect*.

When the subject is properly understood, a very different opinion of it is entertained.

If it be true that the brain is an aggregate of different organs, that each of these organs is tributary to the performance of a specific intellectual function, that some of them acquire a more luxuriant growth in one individual, and some in another, and that they act with a degree of vigour and efficiency proportioned to their size.—If these things be true, (and they are some of the leading positions of Phrenology) then is it also true, that it is possible to acquire a knowledge of the intellects of *some* individuals, by a *skilful* inspection of the exterior of their heads.

It will here be perceived that I have qualified my expression.

I say the intellects of “*some* individuals” may be ascertained by a “*skilful* inspection,” not of *every* individual by a crude and *superficial* one.

“Most women,” says the satirist, “have no character at all.” He might have said that most *indi-*

*viduals*, whether men or women, have no real, well marked character, by which they are distinguished from the mass of mankind. Why, then, should the *heads* of most be particularly marked? In reality they are *not* so; and by this is the truth of our science confirmed.

Where the intellect is *common*, equal, or very nearly so, in one thing to what it is in another, but distinguished in nothing, (and such is the case with the intellects of a majority of the human race) the craniological marks are exceedingly faint; so faint, indeed, that, like faded letters, no one can decipher them without great difficulty. And that such must be the case, is one of the plainest dictates of reason—no strong manifestation of intellect, no prominent development of head—an ordinary intellect, an ordinary head. On the principles of Phrenology, common sense announces that these phenomena must be united. The cause being wanting, the effect cannot present itself. But has the individual a *real character*? Is he distinguished by any strong intellectual manifestations? If so, then is he also distinguished by craniological developments. Then is there something striking in the appearance of his head—something that designates him as a man of intellect. If to this rule exceptions be found, they are *but* exceptions, and weigh nothing in the scale of solid objection.

As Craniology is founded exclusively on observation, let the pupils of it begin by directing their attention to the heads of persons of real character.



Their discoveries here, by convincing them of the truth of the science, will encourage them to proceed. As they become more disciplined in the art of observation, let them descend to an inspection of heads less strongly marked. By steadily pursuing this course, they will acquire, in time, a facility and an accuracy in deciphering heads, at which they will themselves be not a little surprised.

But should they pursue the opposite course, they will become discouraged. An inability to read, at first, *common* heads, in which the characters are exceedingly feeble, will lead them to question the truth of the science, and they will abandon it in disappointment, if not in disgust.

An early inspection of the heads of idiots, and a faithful comparison of them with the heads of men of distinguished intellect, will also be found to be highly useful to students of Craniology. To the heads of persons marked by extremes, whether of virtue or vice, talent or weakness, attention cannot be too highly recommended. The developments of individuals of this description, constitute, in behalf of the science, evidence that cannot be resisted.

Notwithstanding my firm belief in the fundamental principles of Craniology, candour compels me to admit, that, in its details, it is at present more vulnerable than Phrenology. But future observation, well directed, extensive, and accurate, is capable of bestowing on it all it wants to render it as settled as other branches of physical science.

Considered as mere capacities to act, the faculties are *innate*. Their functions are those capacities manifested in action.

In the present state of the science, the primitive faculties are numbered at thirty-three or thirty-four. Of these, five belong exclusively to man, distinguishing him radically from the inferior animals. The others belong in common to animated nature, man possessing the most elevated and excellent of them in the highest degree.

In the opinion of the most disciplined and practical phrenologists, by far the greater part of these faculties and their appropriate organs are *certain*, i. e. satisfactorily ascertained. A few of them are *probable*, and a few only *conjectural*. When considered in detail, they shall be thus distinguished.

## PRIMITIVE FACULTIES.

### PROPENSITIES.

1. Amativeness,
2. Philoprogenitiveness,
3. Inhabitiveness,
4. Adhesiveness,
5. Combativeness,
6. Destructiveness,
7. Constructiveness,
8. Covetiveness,
9. Secretiveness,
10. Self-Esteem.

### SENTIMENTS.

11. Love of Approbation,

12. Cautiousness,

13. Benevolence,

14. Veneration,

15. Hope,

16. Ideality,

17. Conscientiousness,

18. Firmness.

### KNOWING FACULTIES.

19. Individuality,

20. Form,

21. Space,

22. Resistance,

23. Colour,

} These five are proper to man.

24. Locality,	REFLECTING FACULTIES.
25. Order,	30. Comparison,
26. Duration,	31. Causality,
27. Number,	32. Wit,
28. Tune,	33. Imitation,
29. Language,	34. Supernaturality.

Having been unable to procure a phrenological engraving of a head, designating by figures the seat of the different organs, I shall be compelled to use language for this purpose, which, although a very defective substitute, is the only one I am prepared to employ.

## ORDER I. FEELINGS.

### *Genus 1. Propensities.*

1. *Amativeness.* Seat. The cerebellum, or lower part of the occiput, between the mastoid portions of the temporal bones. When strongly developed, this organ produces a backward protusion of the os occipitis, giving unusual thickness to the upper part of the neck.

Its function is *sexual love*.

The existence and situation of this organ are abundantly established.

It is more strongly developed in males than females. Accordingly, in the former the amatory propensity is much stronger than in the latter.

Among men this propensity is more or less powerful according to the development of the appropriate organ, as evinced by the fulness of the lower and back part of the head, and the upper and back part

of the neck. Hence, even among our domestic animals, bulls, stallions, and rams, most strongly developed in those parts, are chosen as the most vigorous and successful propagators of their race.

Wounds and injuries received on the region of this organ often produce impotency. Instances of this among soldiers are very frequent.

A blister on the occiput produces priapism more frequently than when applied on any other place.

The cerebellum is not developed until puberty, at which time the amatory propensity is first manifested. If earlier developed in any case, the propensity appears earlier.

Before puberty the proportion of the cerebellum to the cerebrum is as one to thirteen, afterwards, as one to six or seven.

2. *Philoprogenitiveness.* Seat. The occiput immediately above amativeness.

Its function is *love of offspring*. This organ is more strongly developed in women than in men. Hence, in the former, the love of offspring is much stronger than in the latter.

Among women the strength of the propensity is found to be in proportion to the development of the organ.

It appeared, on examination, that of *twenty-nine* females who had been guilty of infanticide, the development of the organ of philoprogenitiveness was defective in *twenty-seven*. Their love of offspring, therefore, being feeble, the temptation to commit infanticide gained the more easily an ascendancy over them.

This organ and its function are considered *certain*.

3. *Inhabitiveness*. Seat. Just above philoprogenitiveness, near the upper angle of the occipital bone.

The function of this organ is *love of place*, i. e. a preference as to place of abode.

Both the organ and its situation are *conjectural*. Mackenzie denies the existence of such an organ, and refers the selection of a place of abode to taste. *Observation* does not enable me to decide on the subject, and *reason alone* cannot easily compass it. Inferior animals, which prefer one place of abode to another, can scarcely be said to do so on principles of taste.

4. *Adhesiveness*. This is a double organ. Seat. The two organs are situated one on each side of inhabitiveness, nearly on a level with it, and immediately adjoining it. They lie, of course, partly under the occipital and partly under the parietal bones.

Their function is *attachment generally*. The attachment of friendship, attachment to domestic animals, and even to inanimate objects—to the dog that has been faithful, to the horse that has borne us through danger, to the ship that has wafted us from a foreign to our native shore, and to the sword that has defended us in battle.

This is certainly a *native* propensity, and is much stronger in some persons, even from infancy, than in others. It generally forms, where it exists in great strength, a component part of an amiable disposition. It is stronger in women than in men. So, as

a general rule, are all the more valuable propensities and sentiments.

5. *Combativeness*. A double organ. Seat. On each side of the head, adjoining No. 4, (the two last organs) running thence in a downward and forward direction, and lying chiefly above and behind the mastoid process.

The function of this organ is *a love of combat*.

The propensity is natural and innate, and is much stronger in some individuals than in others—stronger in men than in women, and so is the development.

When balanced and regulated by the higher faculties, it takes the character and name of *bravery*. When not thus regulated it shows itself in *quarrelsomeness*.

It forms a strong feature in the heads of real heroes, as is strikingly illustrated in a fine cast which I possess of the head of Sir Robert Bruce, the hero and patriot of Scotland.

Gall found it prominent in the heads of the bravest of the French officers, and in those of all boys who were naturally fond of battle.

An unusual development of it aids in giving the peculiar form to the head of the bull-dog.

This organ and its situation are considered *certain*.

6. *Destructiveness*. A double organ. Seat. On each side of the head, immediately in front of No. 5, partly covered by the ear.

When strongly developed, it lengthens the diameter of the head from ear to ear, rendering those parts unusually projecting.

Its function is a *love of destroying*. When not properly balanced and regulated by the superior faculties, it leads to murder.

The propensity to destroy is natural, and is manifested in some individuals in a degree so flagrant, as to constitute a passion, and amount even to madness.

In the library of the medical department of Transylvania University there are several excellent casts of the heads of murderers, in which the development of this organ is striking.

I possess the cranium of an individual who was executed for the ninth murder which he had committed from an *instinctive love of blood*. In this skull the development under consideration is very unusually prominent.

This organ and its place in the brain are considered *certain*.

7. *Constructiveness*. A double organ. Seat. On each side of the head, immediately over and adjoining the front part of No. 6, and just behind and rather above the external angle of the eye. When strongly developed it produces unusual breadth of head from temple to temple.

Its function is a *love of building*, or *constructing generally*.

The range of this function is very wide, as it embraces drawing, modelling, engraving, operative surgery, and every other occupation that requires the dexterous employment of mechanical instruments.

The organ is peculiarly prominent in all great architects, engineers, and mechanics. It is well

developed in all quadrupeds that *build*, such as the beaver, the field mouse, and others. The same is true of birds remarkable for the curious and elegant structure of their nests.

*Rabbits* and *hares*, much alike in other respects, differ widely in this. In the *former*, the organ of constructiveness is well developed, and they build. In the *latter*, it is very feebly developed, and they do not build.

Our distinguished countryman, Mr. Perkins, the ablest mechanic of the age, is, in a high degree, remarkable for that peculiar form of head which the full development of this organ effects.

The faculty is natural, and, therefore, innate, and the organ and its situation considered *certain*.

8. *Covetiveness*. A double organ. Seat. On each side of the head, immediately behind No. 7, and nearly on a level with it.

Its function is *a love of acquisition generally*, whether of money or other articles. If not restrained and properly regulated by the higher faculties, it leads to great selfishness and even theft.

This propensity is certainly a natural one. Many individuals exhibit it from infancy in a pre-eminent degree. They have a passion to *acquire*, and make their own, every thing that happens to fall within their reach. They even steal things that are of no use to them, and either return them or give them away. Instances of this kind, in persons otherwise highly respectable, have fallen under my own observation, and many such, perfectly authenticated, appear on record.



A chaplain in the Prussian army, in all other respects a very worthy man, was remarkable for the propensity of covetiveness. He stole pocket-handkerchiefs, penknives, books, ladies' stockings, and indeed every thing portable in the nature of property. To steal little things was in him a passion.

This organ and its situation are considered *certain*.

9. *Secretiveness*. A double organ. Seat: On each side of the head, immediately behind No. 8, and above the posterior portion of No. 6.

Its function is *a love of secrecy*

This propensity is gratified in two ways. By *simple concealment* of views entertained and measures pursued, and by a misrepresentation of them. When not properly controuled and regulated by the higher faculties, it leads to *management, intrigue, and falsehood*. In relation to *conduct*, it is the source of *art, hypocrisy and cunning*. When directed by an enlightened intellect, and restrained within its proper limits by the moral powers, it augments not a little the efficiency of character. In courts and cabinets it is a powerful engine. On many occasions, it is, at once, the diplomatist's sword and buckler.

The fox and several animals of the cat kind, are remarkable for it. In some of the human race, it is almost their only power.

The organ of this faculty and its situation are considered *certain*.

10. *Self-Esteem*. A single organ. Seat. Under the sagittal suture, immediately above No. 3,—that spot where the hair seems to separate, falling in sev-

eral directions, and which, in common language, is called the *crown*.

Its function is a *high opinion of self*, or the *sentiment of pride*.

I call it a *sentiment*, not a *propensity*, and think it ought to be classed with the sentiments. But other phrenologists having thought and acted differently, I do not deem it important to oppose their opinions on mere points.

This sentiment, when in excess, becomes haughtiness and disdain. When duly regulated and restrained, it is of great value in practical life. It is the true source of dignity of deportment, without which neither respectability nor influence can be long retained.

From the situation of the organ, the degree of its development may be easily observed. Phrenological pupils, therefore, should direct their attention to it. It is considered *certain*.

### *Genus 2. Sentiments.*

11. *Love of approbation*. A double organ. Seat. On each side of No. 10, immediately adjoining it, and nearly on a level with it.

The function of this organ is fully expressed in its name, *love of approbation or applause*.

This sentiment is useful and honourable, or otherwise, according as it is modified by the higher faculties.

If it be directed to objects of importance, it becomes a lofty and noble ambition, and leads to corresponding effort and achievement.

But if its objects be low and trivial, it degenerates into vanity, and leads to frivolity.

Women have more of the sentiment than men, and, conformably to this, the cerebral development is in them more prominent.

This organ and its place is considered *certain*.

12. *Cautiousness*. A double organ. Seat. On each side, adjoining No. 11, in front of it, and somewhat below it.

The function of this is the sentiment of circumspection, or impulse *to take care*.

Although opposite to the propensity of combativeness, or courage, it is not inconsistent with it.

In the same individual both organs may be fully developed, because he may be at once cautious in the avoidance of danger, and firm and courageous in the midst of it, when it has occurred. Caution is not the mere absence of courage. A person may be without either courage or caution—*rash* and yet a *coward*. This is thoughtlessness.

Regulated and sustained by the other faculties, this sentiment becomes prudence. But if not thus modified, it degenerates into irresolution and instability, doubt and demur.

In animals remarkable for timidity and caution, this organ is strongly developed. This is the case with the stag, the roe, the chamois goat, and all those that are in the habit, when feeding, of placing sentinels to guard against surprise.

This organ and its situation are *certain*.

13. *Benevolence*. A single organ. Seat. The upper and central part of the frontal bone, in range

with the sagittal suture. That suture continued would pass through its centre.

Its function is a sentiment of *kindness, connected with a desire to do good*, without any reference either to reward, to the approbation of spectators, or the gratitude of the persons benefitted. The sentiment is of spontaneous growth, and the reward of each beneficent act arises from the pleasure attending the performance of it. Not to perform it would be painful.

The faculty is innate, being manifested by many from their early childhood.

This sentiment gives the impulse to do good. To produce the best effect, that impulse must be directed by the intellectual faculties.

This organ and its situation are *certain*.

*The five following organs and sentiments are proper to man, and constitute the real lines of demarcation between him and the inferior animals.*

14. *Veneration*. A single organ. Seat. Directly behind, and immediately adjoining No. 13. The sagittal suture passes through its centre.

The function of this organ is a sentiment of *veneration towards superior beings, elders, parents, God*. Considered in its relationship towards God, it is more especially denominated piety. But not being a *knowing* faculty, it indicates nothing as to the nature or perfections of God. It merely points towards a God, such as the intellectual faculties, aided by revelation or otherwise, portray. Hence it may act as vigorously under the impressions of a false

as of a true religion—under mahometanism as under christianity.

When fully developed, this organ produces on the top of the head always a fulness, and often somewhat of a ridge, which makes the hair, if long, separate along the course of it, and fall gracefully on each side. Hence the head of Christ is always thus delineated. Female heads are thus characterized; and women are more remarkable for piety than men.

The full development of this organ produces early baldness. Hence the heads of saints and pious men are usually represented with that accompaniment.

Those who have been observant of the circumstance assert, that, of any given number of men of equal age in a place of public worship, those who are bald, and have the organ I am considering well developed, other things being alike, are most devout.

This organ and its place are *certain*.

15. *Hope*. A double organ. Seat. Immediately adjoining No. 14 on each side.

The term expresses the function. The sentiment is the sweetener and sustainer of life. It is, in a particular manner, the castle-builder's home—he dwells in hope—it is his *heaven*, and gives him every good—his consolation under disappointment—his panacea for every evil.—It is the cynosure, to which his soul perpetually points.

In all who possess the organ well developed, there is a buoyancy of spirit, and a general preva-

lence of bright and encouraging ideas, and delightful emotions.

Such characters never dwell on gloomy prospects, but usually fancy things better than they are.

This sentiment, unless directed and restrained by the intellectual faculties, becomes credulity.

The organ and its place are only *probable*.

16. *Ideality*. A double organ. Seat. On each side of the head, immediately above Nos. 7 and 8.

Its function is to give exquisiteness to feeling, sentiment, conception,—to all the exercises of the other faculties.

It is the organ of poetry, giving to every object and every prospect superadded charms and ideal perfections. It may be called the organ of inspiration.

Into the prose compositions and even the conversation of those who possess it in full development, it infuses the sentimental glow, the picturesque delineation, and all the elastic spirit of poetry.

Under the full influence of it Shakespeare wrote the following lines.

“The fair Publicola, the moon of Rome!  
 “Chaste as the icicle that’s curdled by the frost  
 “From purest snow, and hangs on Dian’s temple.”

And Moore drew, while similarly inspired, his inimitable picture of the Snow-spirit.

“The down on his wing is as bright as the pearl  
 “Thy lips for their cabinet stole,  
 “And it falls on the green earth as melting, my girl,  
 “As a murmur of thine on the soul.”

This organ is the fountain of enthusiasm—the real Helicon, not merely of the poet, but of the phi-

osopher, the orator, the painter, the sculptor, the mechanic, the philanthropist, and even of the generous and high minded warrior. It confers a relish for poetry on those who do not write, and gives refinement to the taste of those who judge. It communicates to eloquence its splendour and its soul, and to conversation its highest charms and brilliancy.

This organ and its situation are *certain*.

17. *Conscientiousness*. A double organ. Seat. Immediately behind and adjoining No. 15.

The function of this organ is to give a sentiment of unspotted justice and pure practical morality. It commands the other faculties to the performance of their duty, and sanctions by its approbation the duty when performed.

Its strength is not in proportion to the strength of the other faculties. In men of feeble intellect it is sometimes very powerful. Such men act correctly without being able to give any other good reason for their conduct, except that it is most agreeable to them. They do their duty for "conscience's sake."

Conscientiousness, then, has certainly much of the character of an internal faculty, although it is considered by some phrenologists as only *probable*.

18. *Firmness*. A single organ. Seat. Between and adjoining No. 14 before, No. 10 behind, and No. 17 on each side

Its function is to give firmness, constancy, and perseverance. When powerfully developed, and not properly regulated by other faculties, it produces obstinacy.

From their infancy, many individuals manifest it in a high degree. It is, therefore, innate, and *certain*.

## ORDER II. INTELLECTUAL FACULTIES.

### *Genus 1. Knowing Faculties.*

The intellectual faculties are all situated in the forehead. Being numerous and much crowded, some of them occupy so small a space, that it is impossible to designate accurately their seat in words. With respect to several of them I need scarcely even make the attempt.

19. *Individuality.* A single organ. Seat. In the centre of the forehead, midway between the termination of the hairy scalp, and the root of the nose.

Its function is to give the faculty of practical observation, and the capacity to acquire knowledge in detached parcels, but not to put it well together.

The possessor of it is an agreeable, often an instructive companion. He is pregnant in matter for conversation; but he is a mere detailer of facts and anecdotes, which he rarely attempts to classify or arrange. He is a man of extensive information, rather than a profound philosopher.

Individuals possessing this organ well developed, have a prominence in the part of the forehead designated, and pay great attention to every thing around them.

In inferior animals it is the organ of domestication and docility.

Its existence and place are *certain*.



20. *Form.* A single organ. Seat. Immediate, under the root of the nose. Its full development gives breadth between the eyes.

Its function is to give a facility of distinguishing form and figure.

Without having better eyes, some persons recognize, by their figures, men, horses, ships, and indeed all visible objects, much better than others. That this is true, every one of observation must be abundantly sensible.

The faculty, then, would seem to be *innate*. The organ is considered *certain*.

21. *Space.* A double organ. Seat. Above and on each side of the root of the nose.

Its function is a faculty to judge readily of *size*, without reference to form.

It is considered *conjectural*.

22. *Resistance.* The situation of this organ is not determined. It is believed to exist, because the idea or conception of resistance is peculiar, and must, therefore, be attributed to a specific organ.

It is considered probable that this organ is immediately adjacent to that of form. Respecting this point, time and future observation must determine.

23. *Colour.* A double organ. Seat. Near the centre of each eyebrow, so that a full development of it gives to the brow sometimes a beautiful arch, at other times an angular direction upwards and laterally.

Its function is a faculty to distinguish, enjoy, and mix colours.

Some individuals can neither enjoy nor distinguish colours. In them the eyebrow is generally straight.

Women delight in colours more than men, and their eyebrows are, accordingly, more generally arched.

The Chinese, as a nation, delight in colours; and they are particularly distinguished by well arched brows.

This organ and its seat are considered only *probable*.

24. *Locality.* A double organ. Seat. Immediately above and adjoining No. 21.

Its function is a faculty to perceive and judge of space and distance, and to remember and enjoy localities.

It produces a fondness for travelling, and an attachment to the study of Geography and Astronomy.

It aids peculiarly the landscape-painter, and the describer of rural scenery.

It assists also the traveller in finding his way to places he has visited, and gives to him an accurate and vivid remembrance of them.

In the mask of Newton and Columbus the development of this organ is very prominent. The same thing is true of the heads of M. Volney, the distinguished traveller, and Sir Walter Scott, the ablest describer of rural scenery now living—perhaps the ablest that has ever lived.

This organ and its seat are *certain*.

25. *Order.* A double organ. Seat. Adjoining No. 23, between it and the external angle of the eye.

The function of this organ is a perception and a love of order, without any regard to classical arrangement.

Those who possess it in a well developed and vigorous state, cannot bear to see any thing out of its place. They are neat and precise in the arrangement of their wardrobe, their library, and their household furniture. But the arrangement they delight in has nothing of science in it.

This organ and its seat are considered *probable*.

26. *Duration*. A double organ. Seat. Immediately above and adjoining No. 23.

Function. A lively and accurate perception of abstract duration, and of the lapse of time between one event and another.

Many individuals have a fine ear for musical *tones*, but no perception or judgment as to musical *time*.

Others, again, are more remarkable for their knowledge of time than of tone, and also for their remembrance of the lapse of time between events, that are not connected by any other tie, as well as of the day or point of time at which any event has occurred. Distinguished examples of these peculiarities are known to myself.

This organ and its seat are only *conjectural*.

27. *Number*. A double organ. Seat. Immediately over the external angle of the eye, and adjoining No. 25. It is small and sometimes difficult to detect.

The function of this organ is a *power of calculation*.

The development of it sometimes elevates the eyebrow and sometimes depresses it, according as

its situation is a little higher or a little lower. It is generally best indicated by the breadth between the external angle of the eyelids, and the commencement of the temple. When very powerful, the whole temple between the eye and the ear is prominent and full.

In Zera Colburne, the celebrated American calculator, the development of this organ was so prominent as to amount almost to deformity. In Bidder, the young English calculator, it is also uncommonly bold.

A mask of Sir Isaac Newton which I possess is very strongly marked by it. So, in some degree, are the brow and temple of every distinguished mathematician.

This organ and its situation are *certain*.

28. *Tune*. A double organ. Seat Immediately above No. 27. A strong development of it gives fulness to the lateral parts, above the external ends of the eyebrows.

The function of this organ is a love and enjoyment of music.

An ear or a taste for music does not depend on acuteness of hearing. Many of the inferior animals that hear better than man, have no sense of either melody or harmony.

Many men whose sense of hearing is sound and acute, cannot distinguish one tune from another, nor scarcely the most exquisite music from common noise, while others, whose hearing is greatly impaired, are, notwithstanding, able to enjoy music.

The sense or faculty of music, then, is certainly primitive and *internal*, and is no more *identified* with the ear or organ of *simple hearing*, than it is with the eye.

The organ, when strongly developed, gives breadth to the face, by extending the lateral parts of the forehead. Hence high powers of music are rarely connected with a thin, narrow face.

The masks of Handel, Haydn, Gluck, Mozart, and other distinguished musicians, are characterized by full developments of this organ.

The heads of certain singing birds are also said to be marked by it with peculiar strength.

Both the organ and its seat are *certain*.

29. *Language*. A double organ. Seat. Immediately under the eyes, rendering those organs, when fully developed, unusually prominent, and giving them, sometimes, a downward direction, so as to produce a fold in the under eyelid.

Should the eyes be small, their prominence, of course, is less obvious. But a large eye placed over a well developed organ of language is necessarily projecting.

The function of this organ is a facility in acquiring the knowledge of language.

Great linguists have always eyes prominent if large, and full, at least, if small. They never possess sunken eyes.

This organ and its seat are *certain*

*Genus 2. Reflecting Faculties.*

30. *Comparison.* A single organ. Seat. Immediately above and adjoining No. 19, about the termination of the hairy scalp.

Its function is the power and love of comparison.

In order to illustrate and convince, in conversation or public speaking, many persons, instead of close reasoning and severe analysis, have recourse to comparisons, similies, and analogies, and show themselves exceedingly prolific in them.

This faculty compares not only external things, but the sensations and ideas of the other faculties.

The organ and its seat are *certain*. A strong development of it gives a fulness to the upper and central part of the forehead.

31. *Causality.* A double organ. Seat. On each side of, on a level with, and immediately adjoining, No. 30.

Its function is a talent for logical reasoning and inductive philosophy—a love of etiology, very generally of metaphysics.

Individuality amasses facts, comparison judges of their identity, analogy, or difference, and causality inquires into their causes. The three faculties combined make up the real philosophical character. They are the superior faculties of the intellect.

The organ and its situation are *certain*.

32. *Wit.* A double organ. Seat. On a line with 31, adjoining it externally, directly above the line that separates No. 23 from No. 25. When strongly developed it gives breadth to the upper part of the forehead.

The function of this organ is a quick perception of such analogies or resemblances as, by their novelty and unexpectedness, excite surprise and agreeable emotions.

In the masks of Sterne, Shakspeare, Voltaire, and Cervantes, the development of this organ is peculiarly striking. Its existence and situation are *certain*.

33. *Imitation*. A double organ. Seat. On a line wrth No. 13, and adjoining it on each side externally.

The function of this organ is a love of imitation, and an aptitude to practise it.

Persons in whom it is strongly developed imitate with great facility and accuracy, both in manner and form, whatever they see done by others. They have often the same facility in imitating the works of nature.

Hence they are qualified to become mimics, actors, and painters.

This organ and its seat are *certain*.

34. *Supernaturality*. A double organ. Seat. Between No. 16 and No. 33.

The function of this organ is a belief in the presence and agency of *supernatural beings*, both good and bad. It is well known that among individuals in whom the intellectual faculties generally are of equal strength, such a belief is much stronger in some than in others.

This organ is only *conjectural*.

## SECTION VII.

FROM the matter contained in the preceding sections it appears that Craniology and Phrenology are nothing but an account of the general structure of the *brain*, and the physiology of the *intellect*; a view of the parts that compose the *former*, and an exposition of the functions of the *latter*.

By the term intellect, I mean neither the brain alone, nor the mind alone, but the aggregate resulting from the union of the two.

The mind is not the intellect, because it cannot *alone* act *intellectually*; the brain is not the intellect, because *it* cannot *alone* act *intellectually*; but the two united *are* the intellect, because *when united* they do *thus* act.

The mind stands related to the *organized* and *vitalized* brain, as the vital principle does to any other *organized* part of the body. That part, although organized, cannot perform its specific function without life, which it derives from its union with the vital principle. Nor can the brain, although organized and possessed of life, perform *its* specific functions, unless it be united with the mind.

Hence the intellectual functions depend on the co-operation of *three* causes, *organization*, *vitalization*, and the *mind*; while mere automatic functions depend on only two, *organization* and *life*.

Thoroughly to understand *Phrenology*, which is but another name for *mental philosophy*, it is essentially necessary to have a knowledge of the *anatomy*



*of the brain*, at least, and of *physiology generally*. He who has no acquaintance with the capabilities and functions of living organized matter, when it is *alone*, is disqualified to understand and appreciate them when it is united with mind.

A leading cause of the slow progress of mental philosophy, compared with the march of other sciences, is, that it has been cultivated generally by those who had no knowledge of anatomy or physiology. Had Locke and his followers been versed in those two branches, their metaphysical doctrines would have been much more intelligible and correct than they are. They would have been derived from man in his *compound character*, and not so exclusively from his *spiritual part*. To be brought to the perfection of which it is susceptible, mental philosophy must be studied by those who are thoroughly acquainted with the nature and general philosophy of living matter. As long as its cultivation shall be considered the province of the *mere moralist*, it will continue defective and debased by error. As well might we attempt the study of optics without a knowledge of the laws of light or of the structure of the eye, as that of intellectual philosophy, without a knowledge of the anatomy and physiology of the brain.

Unable to cope with its advocates in *honest argument*, the enemies of Phrenology have disingenuously endeavoured to awaken against it the prejudices of the conscientious, by attacking it on the ground of its *immoral* tendencies. Not recollecting that no doctrine can be proved to be in its end *immoral*

which cannot be also proved to be in its nature *untrue*, and that to attempt the *latter* object through the medium of the *former*, is like passing sentence of death before conviction of guilt, or like the *unmanly* practice of ceasing to *reason* and beginning to *rail*—not recollecting these things, the cavillers at this science have pronounced it favourable to a belief in *Materialism*, *Fatalism*, and the *legitimacy of crime*.

That, in relation to materialism, these charges are equally illiberal and unfounded, conclusively appears from the following considerations.

By materialism, as applied to man, is meant either the denying the existence of his *spiritual*, and the attributing to his *material* part the entire business of intellection, or the representing of the *latter* as *predominant* in the process over the *former*.

But both of these propositions I have already rejected, which completely exculpates my doctrines from the charge.

I have stated expressly, that, *alone*, matter is incapable of intellectual operations, and that when acting intellectually in union with mind, it is the *inferior* power. In every instance I have given mind the *ascendency*, because I believe that such is its rank in the scale of creation.

But, say my opponents, however pure may be the intentions, and however correct the professions of its advocates, the *tendency* of Phrenology is to materialism. And why? Simply because it states the fact, that in intellectual operations, it is *necessary for matter to co-operate with mind*.

And does not every system of metaphysics, from Aristotle to Brown, *do the same?* Let facts decide.

Sensation and voluntary motion are operations as *truly intellectual*, as the study of astronomy, mathematics, or painting. To be as definite as possible:

Seeing, hearing, tasting, smelling, feeling, moving our limbs, and talking, are processes of intellect. And does not matter *necessarily* co-operate in their performances? Will any one contend that they can be effected *without matter?*

Can the mind see without a material organ called an eye, can it hear without an ear, taste without a tongue, smell without a nose, or feel without organs appropriated to that function? or can it move either the limbs or the organs of speech without nerves and muscles?

A reply in the *negative* will be rendered by every one.

In what, then, consists the difference between the metaphysician and myself? He acknowledges that the mind cannot see or talk without a *material organ*. I assert that it cannot study mathematics without one. I contend that without a suitable *cerebral apparatus*, man cannot acquire a knowledge of either music, painting, or language; he admits that without an appropriate *muscular arrangement*, voluntary motion would be impossible, and that without the instrumentality of gustatory and olfactory nerves, the mind can neither taste nor smell. He is, therefore, as much of a materialist as I am.

He declares that, without the aid of matter, the mind can perform the *higher and more difficult* opera-

tions of intellect, but not the *lower* and *more easy*. I contend that it can perform *neither*; but, that if it must claim *material* aid in doing that which is easy, it cannot dispense with it in doing that which is difficult.

Injure the brain, and what are denominated the *internal* functions of the mind are as seriously affected as those that are *external*. A severe blow on the head, or a fracture of the skull, will extinguish imagination, memory and judgment, as certainly as vision, and sometimes even more so. Under such læsions the *external* functions of the intellect, sometimes remain, while the *internal* are destroyed or radically impaired.

When we are exerting the internal faculties of the mind, we have a perfect consciousness that the brain is *in exercise*; often a more intense degree of exercise than that which accompanies the employment of the external faculties. The severe study of mathematics fatigues the brain, and produces headach sooner and more certainly than the exercise of the eyes on external objects, or the employment of the ears in listening to sounds.

In the progress of age, as the brain decays, the internal faculties fail as early and certainly as the external. The *meridian vigour* of imagination and memory does not outlive that of vision. The former powers begin to grow less active and efficient, as early as the latter begins to grow dim. And the external functions of hearing, tasting, smelling, and feeling, often remain in considerable perfection, after most of the internal have yielded to time.

The more elevated and refined of the intellectual functions fail first, *because they are the most elevated and refined*. The reason appears obvious. The cerebral parts which aid in their performance being the most delicate and exquisite in their organization, experience *first* the ravages of age, *in consequence of their delicacy*.

We hear materialism strongly and justly denounced as a dangerous heresy in science. But whence arises its danger? I answer, from its *falsehood*, and nothing else. It is *falsehood alone* that renders or can render *any doctrine* dangerous; and *every doctrine* that is false, is dangerous in *some respect*. It is *truth alone* that gives to science innocency and utility; and whatever is true may be safely received and acted on as a rule of practice. These positions are to be regarded as axioms.

But what is their bearing in relation to pure *spiritual metaphysics*?—that scheme of mental philosophy which takes from *matter* what justly belongs to it, and gives it to *mind*? Here is *false doctrine*, and I repeat, that wherever falsehood exists, *there is danger*. Materialism, then, is not the *only* doctrine that is dangerous. *False spiritualism* is as certainly dangerous as it is, and perhaps to nearly the same extent.

The only scheme of mental philosophy free alike from false doctrines and dangerous tendencies, is that which assigns respectively to mind and matter their due proportion of influence in the business of intellection. And this is done by Phrenology alone, which considers man as compounded of matter and

spirit, each acting its appropriate part in every intellectual function he performs.

In admitting the truth of the preceding statement, (and they will not venture to deny it) metaphysicians are as much materialists as phrenologists are. The former acknowledge that matter co-operates, and *must* co-operate with mind in intellectual operations, and the latter do no more.

The reason why the internal functions of the intellect are supposed to be of a higher and more *spiritual* character than the external, is easily perceived. They are more concealed, the mechanism on which they depend not being so much a matter of common observation. From this consideration a degree of apparent mystery hangs around them. But we well know that every thing thus circumstanced is usually raised in imagination above its true standard, while things that are familiar are depressed below it.

Let them exchange situations, so that the internal may be seen and the external concealed, and the functions that are now considered exclusively spiritual will be no longer so; while those that are acknowledged to be in part material will be completely *spiritualized*. Such is the propensity of the human mind to enhance the importance of things that are *not* known, to the unjust disparagement of things that *are*. It is thus that we often give to individuals whom we have never seen a fictitious greatness, while we detract from the real standing of those with whom we have been long familiar.

*Fatalism* is the reverse of moral liberty. It is that doctrine which teaches that man does *of necessity* whatever he does in obedience to his *natural* propensities; and that hence he is not *criminal*, because he is not *free*.

But Phrenology is as compatible with free agency as any other scheme of mental philosophy.

It teaches that man derives his propensities *from nature*; and that in some individuals those propensities are much more powerful, and, of course, more difficult to govern than in others.

That these positions are true, must be acknowledged by the metaphysician as well as by the phrenologist, because they are susceptible of positive proof.

The propensities *must* be the product either of *nature* or of *education*, there being no other source to which they can be referred. But they appear even *strong* in childhood, *before* the influence of education has been felt. *Nature*, therefore, and not *habit*, is certainly their parent. They are anterior to habit, and stand related to it much more as cause than as effect.

In children of the same family, possessing the same degree of health, and educated in precisely the same way, the propensities are often exceedingly different. In one they are all mild, easily controuled, and act in subserviency to praise-worthy conduct. In another they are all turbulent, and ungovernable, and minister to vice. In a third, they exhibit a mixed condition of things, some of them be-

ing moderate, others violent, some prompting to virtuous, and others to vicious actions.

That this is a correct picture of human nature, both the *phrenologist* and the *metaphysician* will readily acknowledge. But they differ as to the ground or cause of it. The former attributes the propensities to the instrumentality of *matter*, the latter attaches them exclusively to *mind*. Both acknowledge them to be derived from *nature*, mind and matter being equally her gift.

In reference to the doctrine of *Fatalism*, where is the difference between these two views of things? Must not propensities radicated in *mind* impel to their appropriate actions as *inevitably* as if they were radicated in *matter*?—Unquestionably they must, and, if any difference can exist, even more so; for there is good reason to believe, that education has much more influence in changing *permanently* compound matter, which is constantly undergoing changes, than un-compounded spirit, which appears to be wholly insusceptible of *change*, according to the usual interpretation of that term. To produce any change in a simple indivisible substance, is to revolutionize its very existence, in which event it is *no longer the same being*. *Really to change* spirit would be *relatively to annihilate it*.

When analysed and correctly understood, phrenology presents a system of intellectual checks and balances, much more favourable to moral liberty, than any other scheme of mental philosophy.

As already stated somewhat in detail, it divides the faculties of the intellect into three orders or



grades, the propensities, the sentiments, and the intellectual faculties properly so called, assigning to the *higher* the controul of the *lower*. The sentiments controul the propensities, while, by the aid of the *will*, the intellectual faculties enlighten, direct, and govern the whole. To be more specific on this subject:

The three grades of faculties are alike essential to the nature of man, and contribute, each its specific part, to render him perfect. Of the intellectual faculties neither virtue nor vice is predicable; most of the sentiments incline to virtue; and the propensities become vicious *only by excess*.

Suppose an individual to have the organ of *covetiveness* strongly developed. Uncontrouled by any other development, this would lead to dishonesty and theft. But the organs of *conscientiousness* and *benevolence* check the propensity, and the intellectual organs indicate the degrading and perilous nature of the crime. This latter circumstance calls into countervailing action the organs of *piety*, the *love of approbation*, and *self-esteem*, while the *will*, exerting its influence in behalf of virtue, subdues completely the propensity to vice.

The same thing is true as to the machinery brought into operation for the purpose of vanquishing any other vicious propensity.

Let it be that of *destructiveness*, which, uncontrouled, would lead to murder. *It* also is vanquished by conscientiousness, benevolence, love of approbation, self-esteem, piety, the intellectual faculties, and the will.

*Secretiveness* uncontrouled, prompts to falsehood, hypocrisy, and intrigue. But, balanced and governed by the higher faculties, it bestows great facilities and readiness in the honourable management of intricate affairs, and renders the possessors of it exceedingly fertile in efficient and upright means to attain their purposes.

*Cautiousness* uncontrouled, is timidity and cowardice. But modified by *combativeness*, *firmness*, *self-esteem*, and *love of approbation*, it becomes prudence and deliberation, united to high minded and chivalrous valour.

*Veneration* left to itself, is blind superstition. But enlightened and regulated by the other faculties, it becomes rational piety.

Thus might I clearly show, by a general analysis, that any single propensity or sentiment, uninfluenced by the others, would lead to mischief; while the functions of all the faculties united in due proportion constitute the harmony and perfection of the intellect.

By this system of countervailing influences, even the faculty of numbers, of painting, or of music, may be rendered less dominant than its development indicates.

From this analytical view of the subject, I appeal to every unprejudiced reader, whether Phrenology does not present a system of checks and balances much more favourable to moral liberty than any other scheme of mental philosophy. Indeed, it is in Phrenology alone that any real balance of the intellect is exhibited. To assail such a system with

the charge of fatalism, is an evidence of ignorance, or dishonesty of purpose.

But it is fatalism alone that can give *legitimacy to crime*, and arraign nature as the author of guilt. In as much, then, as phrenology is proved not to be favourable to fatalism, neither is it so to the legitimating of crime. On this topic, therefore, but little need be said.

A strong *propensity* to commit a crime, by no means implies a *necessity* to commit it. In every case where *insanity* does not exist, the higher faculties *can* govern the lower, provided they are properly called into action. If they be not thus called, the fault is not in *nature*, but in the individual who misemploys her gifts. The will is the paramount power of the mind, and *can* at all times controul the others.

Suppose an individual, sound in intellect, is about to commit a crime to which he is propelled by the strongest propensity. Let it be the violation of female honour. A witness unexpectedly makes his appearance. The ruffian abandons his purpose and flies. But the mere appearance of a third person does not here confer on the culprit any new intellectual faculty. It only induces him to employ those which he before possessed. In this instance the offender knows that he is committing a crime, and, at the same time, feels that he is *perfectly free*. His sudden and voluntary abandonment of his object is proof of both.

When we take into view the effect which education may be made to produce in weakening propen-

sities, and in strengthening the moral sentiments and the intellectual faculties, we are forced to acknowledge, that, in the constitution of man, nature, according to the principles of Phrenology, has done every thing necessary and practicable, to constitute moral freedom, and to give to virtue an ascendancy over vice. If man, then, misemploys and abuses the dispensations of heaven, the fault is his own, and he must abide the consequence. Hence the future accountability of moral agents is perfectly compatible with the doctrines of Phrenology. That science, therefore, has no tendency to the legitimating of crime.

From the preceding considerations, I trust it appears, that, as far as relates to morality and religion, Phrenology is as free from fault as any other scheme of intellectual philosophy. Let honest minds, then, lay aside their scruples of conscience, and inquire whether the science be true. As long as they entertain suspicions of its moral correctness, their examination of it will be partial and unfair.

## SECTION VIII.

Having passed hastily over the fundamental propositions in Phrenology, which it is the object of this publication to expound and support, I shall conclude with a section of miscellaneous matter.

Metaphysicians and phrenologists differ widely in their views respecting the nature, number, and names of the intellectual faculties. What the for-

mer denominate *faculties*, the latter consider as only *functions* of faculties, or their modes of operating.

Memory, imagination, judgment, abstraction, association, and indeed all the *faculties* so denominated by Locke and his followers, are nothing in the phrenological school, but so many functions, or modes of operation of one or more of the primitive faculties.

Phrenologists do not believe in the association of *ideas*, but in the associated action of organs and their faculties by which ideas are formed. This conception is intellegible, but that of the association of ideas is not.

Organs are substantial and tangible things, which may be associated in action, and may sympathize with each other. But ideas are *unsubstantial*, and can neither sympathize nor be associated. Association and sympathy are predicable only of something *real*, not of mere *notions*, *thoughts*, or *fantasies*.

Memory is a *function*, not a *faculty*. The remembrance of an idea is nothing but the re-excitement, by the will or otherwise, of the same cerebral motions by which the idea was originally produced. Memory is a function of each of the faculties by which ideas are formed. The sentiments and propensities have no memory.

Judgment, imagination, abstraction, &c. are to be considered in the same light, and thus considered are perfectly intelligible.

In a late work entitled, "A comparative view of the sensorial and nervous systems in man and animals," Professor Warren, of Boston, has stated a few objections to the science of Phrenology, some of which I shall briefly notice.

The professor's attack is made on *points*, but does not extend to *fundamental principles*. The mere outposts of the science his missiles have reached with some *apparent* effect. The citadel remains not only unshaken, but untouched.

I call the effects of the professor's attack *apparent* rather than *real*, because his inferences do not accord with the facts from which they are drawn. The latter are too limited in number to justify the general nature of the former.

He asserts, p. 87, that the organ of *combativeness* is not well developed in the brain of the "*lion*," or in that of "*large dogs*," which, in common opinion, stand at the head of courageous animals.

But of what are his proofs of this assertion composed? Not, I think, of those substantial materials which alone constitute philosophical evidence.

"The skull," (of the lion and the large dog) says he, "is narrow at this part (where the organ of combativeness lies) and the appearance spoken of does not exist *in the bones*. In the *skulls* of two lions in my possession, and various large dogs, the *cranium* is more narrow at this part than in the skulls of various monkeys."

From the terms of expression employed by the professor there is reason to believe that his observations have been confined exclusively to the "*skulls*":

of the animals in question, and that he has not carefully examined the comparative extent of the cavity of the cranium in different parts. He has not, I fear, reflected sufficiently on the comparative strength which one organ may derive from the weakness or want of another that might countervail it. Paralyze one muscle, and its antagonist seems to act with great power, because it acts without controul.

If this be the case, his inquiries have been defective, and are by no means sufficient to justify the *sweeping inference* which both he and certain reviewers have ventured to draw from them.

It is signal injustice, and utterly incompatible with the true spirit of research, to place them in competition with the inquiries of Gall and Spurzheim, who, in pursuit of phrenological science, have traversed all Europe, spent more *years* in investigating the subject than professor Warren has *months*, and, in their attempts to throw light on it, dissected and examined a greater number of lions, tigers, and other animals of strongly marked characters, than he has probably ever seen. The practice, which is too common every where, of placing *very limited* in opposition to *extensive* investigations, is by no means favourable to the advancement of truth.

The mere extent of a portion of the cavity of the cranium of an animal, whose *general intellectual character* the professor does not appear to have taken into view, furnishes no effective means with which to impugn an opinion fortified by so many and such

authentic facts as that of the existence and influence of the organ of combativeness.

The professor does not appear to have recollected, that, in carnivorous animals, *almost the whole amount of brain* lying behind the mastoid process, consists *entirely of the organs of combativeness*. Yet such is the fact, according to the established belief of the school of Phrenology.

But in the brain of the monkey the case is different. In *it* the organ of philoprogenitiveness is exceedingly large; and that organ is situated *between* those of *combativeness*, and by augmenting the cerebral mass, widens, of course, that part of the cranium.

Admit, then, that that portion of the brain of the lion situated behind the mastoid process is comparatively small; still, being little else than the organs of combativeness alone, it is sufficiently large to give to that animal all the courage it possesses.

But is it true that the lion is, in the genuine meaning of the expression, a *very courageous animal*?

Singular as the sentiment may appear, I entertain no inconsiderable doubts on the subject. When strongly excited, the lion is infinitely ferocious. But this is no mark of real *courage*. It is rather indicative of a propensity to *destroy*.

Animals greatly inferior to him in strength, the lion destroys as prey. But this again is far from being a mark of courage. When man attacks his inferior it is considered cowardly.

The lion shows no strong predilection to engage with his equal. The combat with the royal tiger



and the elephant he often declines. And when he does give battle, he uses more of stratagem and address than is compatible with open, magnanimous boldness. He takes, in the contest, every possible advantage.

The lion is certainly less courageous than the dog. Of this I have witnessed myself a striking instance.

In the menagerie of the *Jardin des Plantes* in Paris, a lion and a small dog occupy the same apartment, and possess a strong attachment for each other. When any new or threatening object presents itself, but more especially when any harsh and unusual sound is heard, the lion begins to quail and crouch for protection behind the dog, while the latter seems always prepared to give battle.

I doubt much whether the lion ever fights, like the dog, from a love of combat. He engages his equal only under excitement amounting to rage. This, I repeat, is sanguinary ferocity, not courage.

The animals of the cat-kind are savage and insidious, rather than brave.

To have done justice to his subject, the professor, as I conceive, ought to have proceeded in a way materially different from that he adopted. He should, at least, have amplified his field of inquiry.

Instead of comparing *one species* of animal with *another*, (the lion with the monkey) it would have been a much fairer and more philosophical procedure to have compared with each other *different individuals* of the *same species*.

Procure, for example, a number of living lions; ascertain, first, their comparative courage, and then the developments of their organs of combativeness. Should a large organ be found connected with defective courage, or a small one with that propensity in a degree of great exuberance, phrenological science will suffer by the discovery. But unless a course somewhat like this be pursued, inferences against the science, however positively they may be made, will fail to enfeeble its claims to the confidence of its advocates.

A comparative inquiry of this description in relation to dogs, is eminently confirmatory of the truths of Phrenology. Of that race of animals, the bulldog, the mastiff, the Irish greyhound, and the Newfoundland dog, are the most courageous. And in these the organ of combativeness is most powerfully developed. The common greyhound, the coach-dog, and others with long narrow heads, are defective in courage.

But I beg leave to repeat, that in our attempts to estimate the character of an animal, it is not sufficient that we examine *alone the real* size of its organs. We must take into consideration also their *comparative* size. In this way only can we be enabled to ascertain the predominancy of any one of them.

Thus, for example, if any particular organ be but *moderately* developed, a kindred or co-operating organ powerfully developed, and those calculated to hold it in check *very feebly* so, the function of the former must be strikingly manifested. Let the organ

*moderately* developed be that of *combativeness*, and those *very feebly* developed be *caution* and *benevolence*. In this case the animal may be fiercely inclined to battle, more especially should the organ of destructiveness be strong. Or let the organ of destructiveness be but *moderately* developed, and those calculated to controul it very feebly so, the propensity of the animal may be eminently sanguinary.

Professor Warren, p. 88, would deny the *existence* of the organ of *amativeness*, because it is not *inordinately* large in the monkey and the baboon, whose sexual propensities are *unusually* strong.

Here, again, the professor's investigation is faulty. As in the former instance, he compares *species* with *species*, instead of comparing with each other *different individuals* of the *same species*. I need hardly subjoin that the latter is the only mode of proceeding that can lead to an honest and unequivocal result.

That there exists a commanding sympathetic connection between the occipital region and the genital organs, is a fact as well established as any other in physiological science. Did circumstances permit me to enter into detail, arguments could be advanced in proof of this that would be irresistible.

Professor Warren informs us, p. 89, that, "on comparing the skulls of various birds, he has not been able to verify, in a distinct manner, the supposed situation of the *organ of tune*."

This is nothing but negative evidence. On the ground of it the professor is justified *in suspending his own opinion* as to the existence and situation of

the organ in question, *in the animals he has examined*. But it may be held *doubtful* whether he is yet authorized to dictate, on the subject *generally*, opinions to others.

That the organ of tune *actually exists* in singing birds, and that in some individuals it is much more powerfully developed than it is in others of the same species, is an opinion in which the most enlightened and practical phrenologists of Europe unanimously concur. And their belief is founded not on conjecture, but on deliberate, varied, and extensive observation, and well conducted anatomical research.

“The peculiarities of the female mind,” says the professor, p. 105, “in every nation on the globe, are not accompanied with a visible difference *in cerebral organization*.”

I am somewhat at a loss as to what is to be here understood by the expression, “cerebral organization.”

The professor cannot mean that the development and figure of the male and female brain are the same. His extensive and accurate knowledge of anatomy must have long since convinced him of the *contrary*, and of the facility with which the one can be distinguished from the other.

The difference between the forms of the male and female head is uniform and striking. In the former, the strength of development lies in the forehead, the seat of *real intellect*, and, in the latter, in the upper and posterior portions of the head, which are the seat of moral sentiment. In conformity with this, men are more *intellectual*, and women more *sen-*

*timental*, in their character. Man surpasses in intellectual capacity and strength; woman, in tenderness, purity, benevolence, and goodness. In all nations this distinction marks the sexes. Hence it is necessarily *founded in nature*. By the influence of human institutions it could never have been produced and rendered universal.

Professor Warren again alleges, p. 105, that the amount of intellect possessed by individuals is not in proportion to the size of their heads, men with small heads being highly gifted, while those with large ones are defectively so.

That this is sometimes the case is true, as has been already acknowledged, and the reasons for which have been already assigned.

But that the *reverse* is the *general rule*, (*and for general rules only can philosophy contend*) is equally true.

I repeat what was formerly stated, that a given number of men *promiscuously collected* possessing large heads, will be uniformly found to have more native intellect, than an equal number *assembled in the same way*, possessing small heads. This fact speaks a language that cannot be misunderstood.

A large brain, well organized, well developed in its several parts, and sufficiently vivified and invigorated by a free supply of blood completely arterialized, would seem to constitute the best *material basis* of talent, morality, and energy of character. Indeed, as there is reason to believe that every human *mind* is originally *equal* in soundness and capacity, such a brain is, perhaps, the only requisite

foundation of intellectual strength. With a brain of this description the intellect *must* be strong. To render the possessor of it distinguished, nothing but education and study are required.

That an individual may be substantially and pre-eminently great, his intellect must be perfectly balanced.

To enlighten and direct him in his career, his *intellectual faculties* must be of an elevated order, to render him pure and virtuous, and honourable, the sensibility and tone of his moral faculties must be high, and to give him energy corresponding with his other qualities, his propensities must be strong.

These three kinds of faculties occupy, as formerly mentioned, three distinct compartments of the brain, which united constitute the whole of that organ. To render all the faculties, then, abundant in strength, and equally so, the entire brain must be fully developed. Under these circumstances it *must necessarily be large*. Hence every individual pre-eminently enlightened, virtuous, and energetic, will be found to have a large head—at least above the common size.

But to be *partially* great, a large head is not essential. To render the *intellectual* faculties strong, a *well developed forehead* is sufficient. But that alone will not produce a large head, the other portions being moderately developed.

To render the *moral* faculties strong, a full development of the upper part of the head is sufficient. But *that alone* will not produce a large head, provided the developments elsewhere be moderate.

To render the *propensities* strong, a development of the lower and lateral parts of the head is sufficient. But *that alone* will not produce a large head.

Nor will the development of any *two* compartments of the brain do this. But a full development of the *three* compartments will; and to form a character truly great, such development is essential

*Phrenology* possesses over *metaphysics* a great superiority, in being more intelligible in its nature, more beautiful in its arrangement, and much more conformable to the general course and economy of nature.

Let twenty individuals, qualified for the study, without prejudice, and unacquainted with both, devote, with equal industry, six months to the cultivation of each of these schemes of mental philosophy, and at least *nineteen* of the number will give a preference to the former, on account of its superior intelligibility, and the clearness with which it explains the phenomena of the intellect.

It assigns to the mind, as its residence and observatory, the most elevated, dignified, and exquisitely constructed portion of the body.

Here, that immaterial and immortal substance finds organs constructed with perfect wisdom as instruments for the performance of its numerous and diversified operations. It is not compelled to execute, in a loose and slovenly manner, *various* processes with the *same* instrument. Conformably to the provisions in every other department of nature, it is supplied with *specific means* for the attainment of each *specific end*.

But, in his dreams of *spiritualism*, how different is the situation assigned it, and the task imposed on it by the mere metaphysician? Scarcely allotting to it "a local habitation" at all, he compels it to engage in a multitude of different operations, *unaided by any means*, and dependent exclusively on its own resources. In denying it the use of *material* instruments, he compels it to work *without instruments*. Of its own *unity*—its *own indivisible essence*, instrumentality is not predicable. It cannot be, at once, the *spring* and the *instrument* of action. As well might the metaphysician declare the *powder* which explodes in the gun-barrel, to be the *tube* which *directs* and the *missile* that *strikes*. A more glaring absurdity cannot be exhibited than that of affecting to deduce from the same cause a variety of effects. Yet this the metaphysician confessedly does. In vain does he talk about the different *states* of the mind. For a *simple indivisible* substance to pass from one state to another, is to *change its essence*, and become a *new* and a *different* thing.

A *compound* substance can change its state, and still be the same substance. A *simple* one cannot. At least, no one can form a distinct idea of such a phenomenon. *To be* and *not to be*, if predicated of the same thing at the same time, would not imply a more flagrant contradiction.

I mean no wanton or irreverent comparison in saying, that, in two respects, the history of Phrenology resembles that of the Christian religion.

When our religion was first promulgated, the sentiments, the established forms of worship, the hab-



its, the prejudices, and the *supposed temporal and eternal interests* of the world, were all united in array against it. But, by the purity and efficacy of its inherent truth, it triumphed and spread.

Such has been hitherto the fortune of Phrenology. In despite of every effort that could be made to suppress it, by sophistry, ridicule, and deep denunciation, it has gained proselytes among the faithful and enlightened students of human nature, and is now so rooted that nothing can shake it. The issue will prove that its course is irresistible.

Many who have commenced the study of the Christian religion, the better to qualify themselves to oppose, and if possible overthrow it, have been rendered, by an examination of it, converts to its truth, and supporters of its principles.

The same thing is true in relation to Phrenology. In attendance on *its* service, as well as on that of religion, many "who *came to mock, remained to pray.*" A professional and literary character of distinction in Edinburgh, who was originally one of its most zealous opposers, is now in the ranks of its ablest advocates. Not to speak lightly or in mockery, but merely to pursue my comparison, he has become the St. Paul of Phrenology. Many such changes in its favour have occurred. I have never either known or heard of an individual faithfully studying it without becoming ultimately convinced of its truth. Its opposers are made up of those who, either from prejudice or indolence, *will not honestly and industriously study it*, or from want of capacity or suitable opportunities *cannot*. The hostilities cherished

and actively practised against it spring from *want of knowledge* or want of *candour*. Its real enemies may take their choice.

It is not within the scope of the present publication to enter into a detailed exposition of the various purposes to which Phrenology may be usefully applied. If it be *true*, it *must* be useful in a degree proportioned to the importance of the subject to which it relates,—*the intellectual character of man*.

It may be sufficient on the present occasion briefly to observe, that the subjects on which it promises to shed most light, and the interests of which it will, therefore, most eminently subserve, are education, criminal legislation and jurisprudence, and the treatment of diseases of the intellect.

To the first and last of these it has already been applied with very flattering success. In an institution for the education of youth, a few miles from Edinburgh, under the patronage of the celebrated and philanthropic Owens, we are confidently assured by the teachers themselves, that the benefits derived from it have been obvious and great. For an account of the application and uses of it in that excellent seat of learning and industry, the reader is referred to an article in the sixth number of the *Journal of Foreign Medical Science*.

In its application to the true philosophy, and therefore the correct treatment of intellectual diseases, it promises to be no less pre-eminently useful.

In as much as it is confessedly the *physiology* of the brain, no one, without a knowledge of it, can ev-

er become versed in the *pathology* of that organ. Nor without an acquaintance with the latter subject can intellectual derangement be sufficiently understood or successfully treated.

Fortunately for man, insanity is no disease of the *mind*, considered in the abstract. If it were, it would be *radically and forever irremediable*; for we have no medicines to reach and affect that substance. A *spiritual* malady is equally beyond our comprehension and our art. In the literal sense of the term, we cannot "minister to a *mind diseased*," but we *may*

"Raze out the written troubles of the *brain*,  
 "And with some sweet oblivious antidote,  
 "Cleanse the stuff'd bosom of that perilous stuff,  
 "Which weighs upon the heart."

When *early assailed*, and skilfully and vigorously treated as a disease of *matter*, not of *spirit*, it is found by experience, that insanity is as tractable as other affections. When hereditary, it proves, like *all* hereditary maladies, exceedingly obstinate. But, when accidentally produced, it is as remediable as other chronic complaints.

Let it be faithfully studied, and ably treated on the principles of Phrenology, which demonstrates it to be as much a disease of the brain, as dyspepsia is of the stomach, or peripneumony of the lungs, and it will no longer be regarded as the "*opprobrium medicinae*."

Although it cannot effect the condition of the *mind*, the influence of remediate articles *can* alter and improve the state of the *brain*. When under the direction of an able physician, that organ is at

accessible to medicinal impressions as the kidneys or the liver.

The pressure of other duties forbids me to enter into further detail. Had I leisure to exhibit, on phrenological principles, the machinery of intellection in full operation, the intelligibility, simplicity, and symmetry of the spectacle, would not only command assent, but excite admiration.

I shall conclude this essay by a few extracts from a pamphlet lately published by Mr. Abernethy, of London, entitled "*Reflections on Gall and Spurzheim's System of Physiognomy and Phrenology*," merely to show the sentiments now entertained by that distinguished medical philosopher. I say "now entertained," for Mr. Abernethy was originally hostile to the science. But, like many other individuals of enlightened and liberal minds, he honestly studied it, and became convinced of its truth.

Page 33. "I see no objection," says Mr. Abernethy, "to the classification of the superior intellectual faculties which Gall and Spurzheim have made, into comparison, analysis or causation, and combination; because this arrangement refers to all the elementary powers cognizable in the actions of the human mind: powers which seem exclusively to belong to man. I am even pleased with the station which the organs supposed to be productive of these powers are said to occupy, for we find them arranged in a regular phalanx on a part of the head peculiar to man, the summit of the lofty forehead. As I have said in the lectures addressed to this College

if we find the head more produced in parts peculiar to man, it is reasonable to suppose that he will possess more of the intellectual character; and if in those parts common also to brutes, that he will possess more of those propensities in which he participates with the brute creation. We are all naturally physiognomists; and almost every observant person has remarked the amplitude of this part of the head to be indicative of intellectual power. Shakespeare denotes the eye as the herald of the mind, which so quickly proclaims its mandates that he compares it to the winged Mercury, new-lighted on a fair and ample hill, so lofty, that, Olympus like, it seemed to touch the heavens."

Page 48. "In short, I readily acknowledge my inability to offer any rational objection to Gall and Spurzheim's system of phrenology, as affording a satisfactory explanation of the motives of human actions."

Page 55. "Yet that there are natural differences in the character and talent of persons is evident: in infancy, we may observe that some are delighted with receiving and bestowing kindness; while others accept and return carresses with apathy. At a very early period we perceive a child to be resolute or undecided; fearful, or incautious; candid, or reserved; liberal, or selfish. We also discern various kinds of talents and intellectual powers before it can be supposed that they have been produced by education. These natural differences of character and talent also manifest themselves under the most inauspicious circumstances: a man may be educated

as a robber, and pursue his profession with so much zeal and energy that he may acquire its highest honours; he may be the captain of banditti: yet, if nature has given him just and honourable feelings, he will sometimes violate the regulations of the gang, and commit acts of clemency and propriety which many of his comrades may censure, and call pusillanimous, yet none can wholly disapprove. Do we not also know that great talents have induced self-education, and that plough-boys have become eminent as philosophers and poets?"

Page 64. "However, I readily concur in the proposition, that the brain of animals ought to be regarded as the organization by which their percipient principle becomes variously affected. First, because in the senses of sight, hearing, and smelling, I see distinct organs for the production of each sensation. Secondly, because the brain is larger and more complicated in proportion as the variety of affections of the percipient principle is increased. Thirdly, because diseases and injuries disturb or annul particular faculties and affections, without influencing others; and, Fourthly, because it seems to me more reasonable to suppose that whatever is perceptive may be variously affected by means of vital actions transmitted through a *diversity of organization*, than to suppose that such variety depends upon *original differences in the nature of the percipient principle.*"

Page 66. "Whilst, then, I most readily concede to what is demanded in this system of organology, that the variety of effects produced may be the result of modifications of vital actions transmitted

through diversities of structure, I most strongly protest against the opinion, that the organs themselves are perceptive."

Mr. Abernethy is known to be as sound in principle as he is distinguished for intellect. His approbation of Phrenology is, therefore, doubly important. It furnishes the *evidence of authority*, as weighty as that of any individual of the age, in favour of the *truth* and the *morality* of the science. How infinitely it outweighs the disapprobation of the uninformed, the cavils of the sophist, the denunciations of the bigot, and the stale jests and ribaldry of the witling, the intelligent reader will satisfactorily perceive without any comment or argument of mine.

I have already intimated, and now beg leave more distinctly to declare, that from the Scriptures themselves the principles of Phrenology receive unequivocal and positive confirmation.

This science maintains, as one of its fundamental truths, that to qualify the human *mind* either to *act intellectually*, to *enjoy*, or to *suffer*, the union of a *material* fabric is essential.

And do not the Scriptures avowedly inculcate the same doctrine? Let facts reply.

As a man pre-eminent in holiness, the prophet Elijah was destined to experience, at once, as the reward of his fidelity, the beatitudes of heaven. But this he could not do as a *disembodied spirit*. *As such* he was not *Elijah*, but only a *part* of him. His mind and his body having been *necessarily* associated in *action*, must be also *necessarily* associated in *enjoyment*. He was, therefore, translated to hea-

ven entire, to receive his reward in his *compound character*. This fact, being its own interpreter, needs no comment.

With all the details of the resurrection of the *body* of Christ, every Christian is necessarily acquainted. The stone which closed it was removed from the door of his sepulchre, his sepulchral habiliments were lying in different places, but his *body* had escaped.

This *same body*, configured precisely as before his crucifixion, and bearing the wounds inflicted in that process, was afterwards seen alive, and recognized by his disciples and other individuals.

And wherefore was all this? I answer, that Christ in his *character as man*, composed of a *human soul* and a *human body*, might be duly prepared for the fruition of heaven.

Read, in chap. xv. of his first epistle to the Corinthians, St. Paul's sublime and eloquent descant on the resurrection from the dead. Throughout the whole of that masterly production, the necessity of a *re-union of spirit and matter* is irresistibly enforced. Nor is the reason of this obscure. It is that, *by a restoration of the requisite susceptibility*, which spirit alone does not possess, *a fitness to enjoy and to suffer may be conferred*.

If, then, divine revelation declares, that a union with *matter* is essential to fit the spirit of man for its *celestial abode*, there can surely be nothing of error or immorality imputed to a science merely because it inculcates the necessity of a similar union to qualify that spirit for its functions *on earth*.



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