

Phrenology article of the Foreign Quarterly Review ... / With notes from G. Spurzheim.

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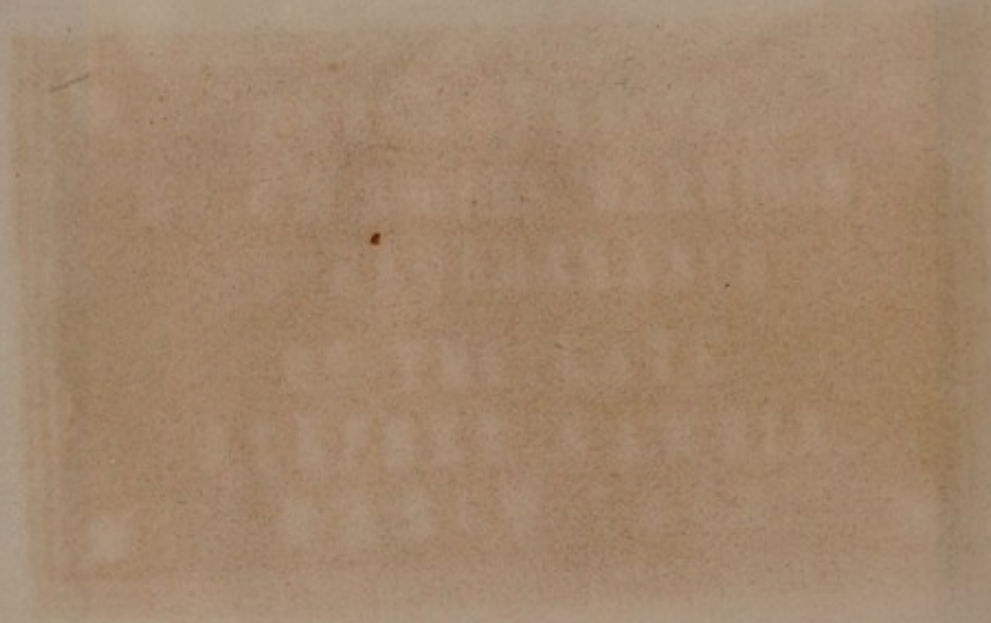
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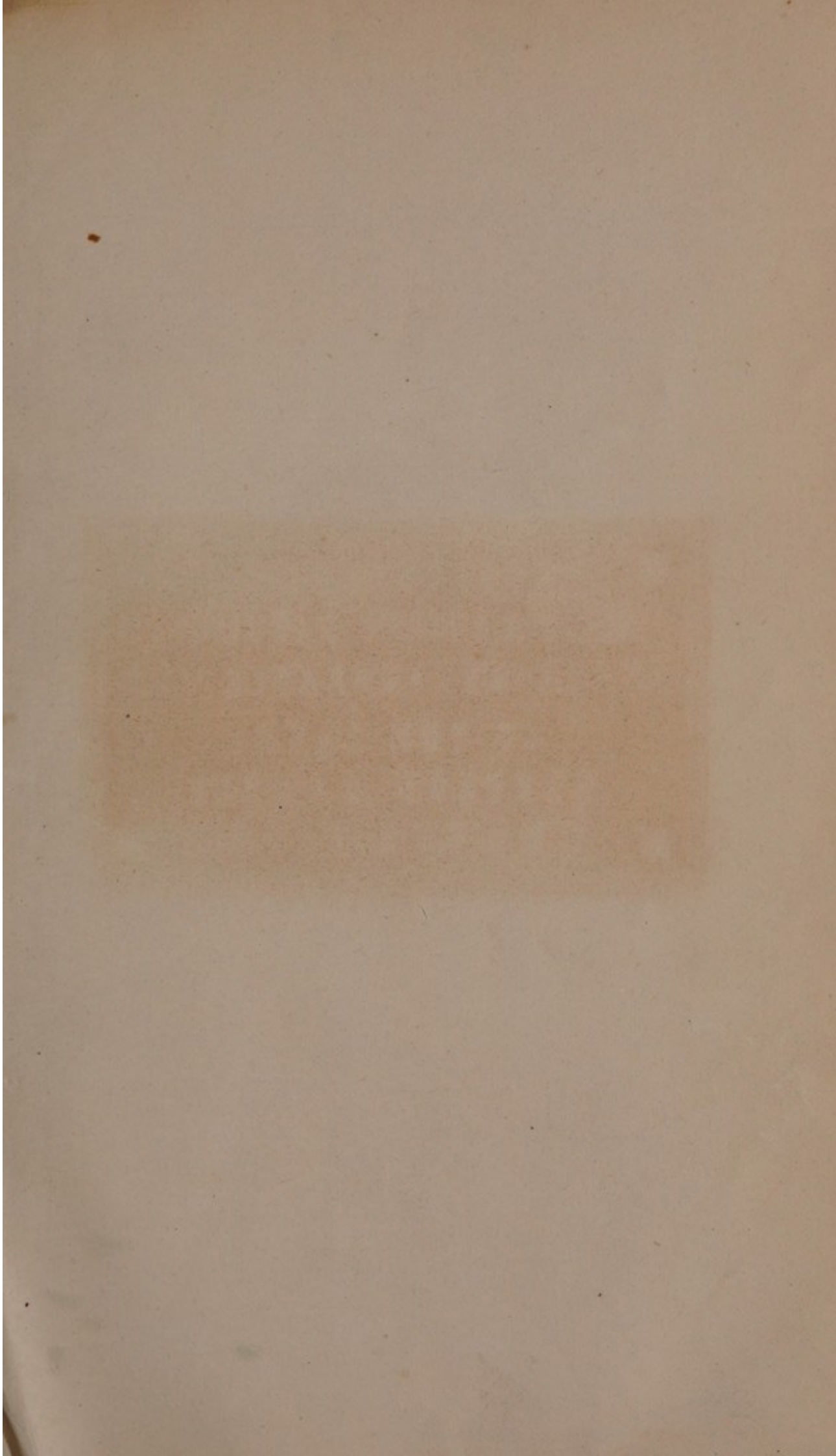


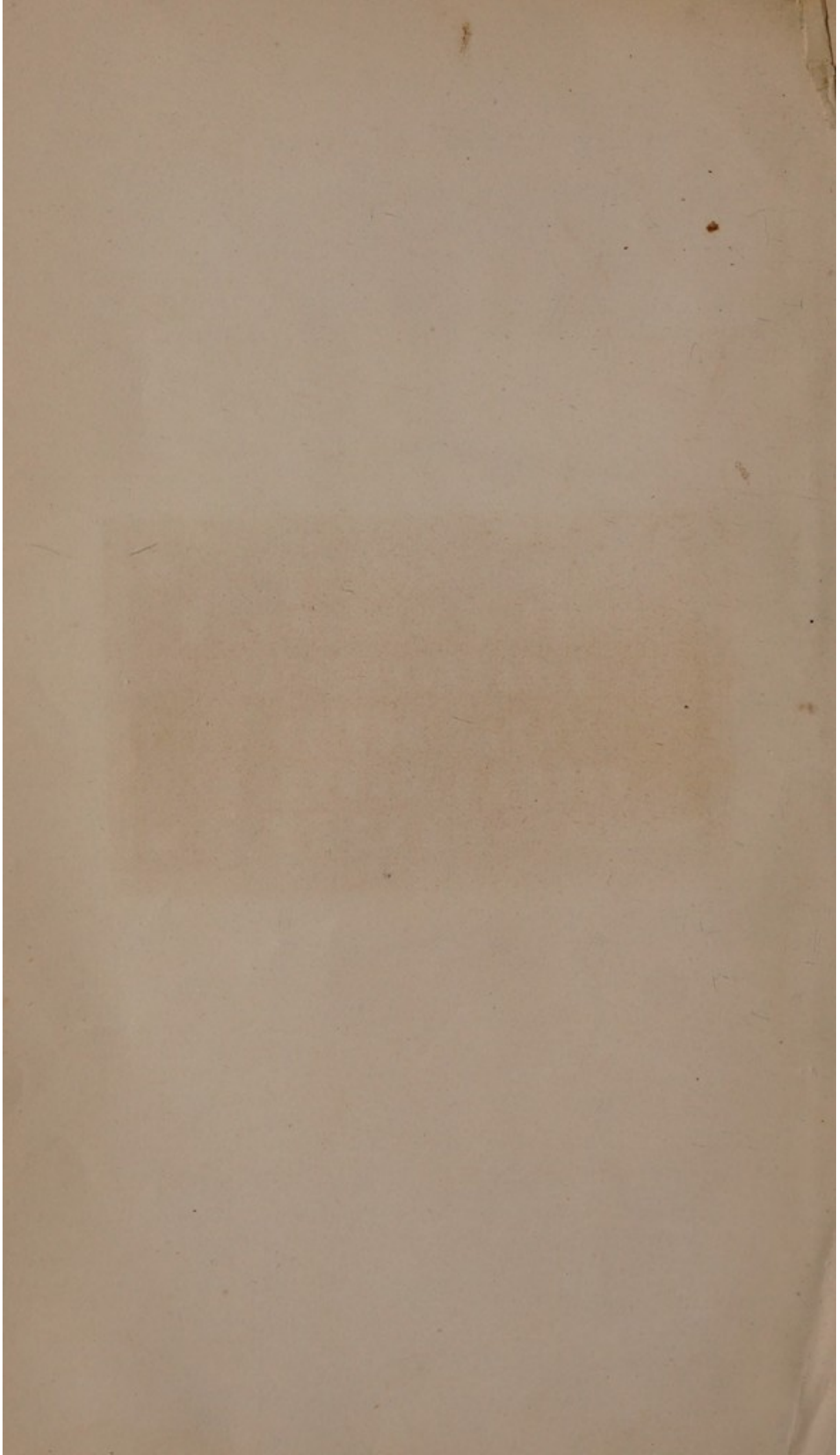
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PHRENOLOGY

ARTICLE

OF THE

FOREIGN QUARTERLY REVIEW,

BY

RICH. CHENEVIX, Esq. F. R. S., &c.

WITH

NOTES

FROM

G. SPURZHEIM, M. D.

*OF THE UNIVERSITIES OF VIENNA AND PARIS, AND LICENTIATE OF THE
ROYAL COLLEGE OF PHYSICIANS IN LONDON.*

LONDON:

PUBLISHED BY TREUTTTEL, WÜRTZ, AND RICHTER,
30, SOHO SQUARE.

1830.

PHRENOLOGY

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BY

RICH. CHEEVER, Esq. F.R.S. &c.

LONDON:

BAGSTER AND THOMS, PRINTERS,
Bartholomew Close.

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PREFACE.

THE proprietors of the Foreign Quarterly Review have now granted the permission to publish separately the first article of their No. III, on Gall and Spurzheim, or Phrenology. This permission was particularly desirable, since the article is highly calculated to remove prejudice against, and to excite inquiry into, the truth of a system which finally must prove eminently important and interesting to mankind. I avail myself of this opportunity to correct by additional notes, some prevailing errors, and to explain several points of phrenology, which are misunderstood, because they have been misrepresented. I like discussions fairly conducted, and as long as truth alone is the object of inquiry; but I am disgusted with scientific pursuits being degraded by party-spirit and selfish passions. The impartial reader, therefore, is requested not to revere any petulant critic as a decisive oracle, and not to rely on the opinions of friends or foes, but only on the authority of nature and her immutable

laws; to examine and judge for himself, and to remember Locke's saying, (Human Understanding, edit. 2nd, line 4, chap. 15, sect. 6.) "There cannot be a more dangerous thing to rely on than the opinion of others, nor more likely to mislead one, since there is much more falsehood and error among men, than truth and knowledge."

G. SPURZHEIM.

London: 8, Gower Street.

ARTICLE

OF THE

FOREIGN QUARTERLY REVIEW.

- ART. I.—1. *Anatomie et Physiologie du Système Nerveux en général, et du Cerveau en particulier, &c.* Par F. J. Gall et G. Spurzheim. 4 vols. 4to. avec Atlas in folio. Paris. 1810—1819.
2. *Observations sur la Folie, ou sur les Dérangemens des Fonctions Morales et Intellectuelles de l'Homme.* Par G. Spurzheim, M.D. 8vo. Paris. 1817.
3. *Observations sur la Phrénologie, ou la Connoissance de l'Homme Moral et Intellectuel, fondée sur les Fonctions du Système Nerveux.* Par G. Spurzheim, M.D. 8vo. Paris. 1818.
4. *Essai Philosophique sur la Nature Morale et Intellectuelle de l'Homme.* Par G. Spurzheim, M.D. 8vo. Paris. 1820.
5. *Essai sur les Principes Elementaires d'Education.* Par G. Spurzheim. 8vo. Paris. 1822.
6. *Sur les Fonctions du Cerveau et sur celles de chacune de ses parties.* Par F. J. Gall. 6 vols. 8vo. Paris. 1822—1825.

TWENTY-FIVE years have nearly elapsed since the question which we are now going to examine was first laid before the British public. Since that period, it has occasionally been brought into notice, or fallen into neglect, as the continental publications have made their way to this island, or as the teachers of the system have thought fit to address themselves directly to Englishmen. The manner in which it was then received was not such as to authorize a belief that it ever could be treated but with contempt. Within a few years, however, it has attracted so large a share of attention, it has been contemplated with so much earnestness, with so much gravity—that we deem it a duty to allot some pages to its serious consideration.

To the serious consideration of phrenology! What then, is the *Foreign Quarterly*, in the very outset of its career, to shew itself a feeler of heads, a cranioscopist, a teller of fortunes from cerebral bumps and excrescences! No such thing; but the pages of this Review ever shall be open to any appeal that

science makes to it, to any literary subject that comes within its sphere. Formerly, indeed, our co-mates and brothers in criticism made rather merry with the lucubrations of Drs. Gall and Spurzheim; but the thing is now beyond a jest; and as it has so long been left to writhe under the lash of ridicule in vain, it may be well to try it by some other test: and to apply to it some of the philosophic calmness by which phrenology itself professes to be guided.

But, before we proceed one step in this inquiry, we must disclaim all intention to decide upon the truth or fallacy of the pretended science. We do not mean either to discuss or to judge it on our own account, but to let the parties speak for themselves; to give room to phrenologists to state whatever they can in support of their doctrine; and to anti-phrenologists, to refute as much as they can of it; to put our readers in possession of the materials which may enable them to form an opinion, and then leave them to judge for themselves. If, too, we are serious upon the subject, it is because the subject itself is a very serious one. That which threatens the subversion of every moral theory which has been devised since the days of the seven sages of Greece, deserves to be treated with some gravity. In the country of Bacon, all philosophic claims should be canvassed with equity; in the country of Shakspeare, to mention with levity any thing relating to the human heart is derogatory.

The complaints of phrenologists, that their doctrines have been mis-stated, and their opinions purposely mis-represented, have led us to admit the present article, in order to rescue the land of juries from the imputation of condemning any man unheard, still more upon wilful perversions of his own words and meaning. Here then we shall proceed a little differently from the usual method of reviews, and utterly abstain from personal interference. We shall introduce the parties themselves to the bar, and let them severally plead their own cause. The sceptral WE of criticism we shall abdicate, and not once shall we use that plural pronoun in this article, but as appertaining to phrenologists, or to anti-phrenologists, in whose favour the choice spirits of the *Foreign Quarterly* abjure their magic, and become listeners like the public. The only part we take in the trial is to devote some of our pages as an arena in which we allow the combatants to wrestle as they please, but into which we ourselves shall never once descend. The fact is, that the present state of the question ought to be laid before the public candidly; for if the writings of one party have not always been exactly as might be wished, the clamours of the other have done them little credit. The method we adopt appears to us fair, and the use of the first person may a little dramatize the dull discussion. The pleadings shall be opened, on the part of the phrenologists,

by a statement of the case, faithfully collected from the writings of Dr. Gall himself.

“In the ninth year of my age,” says our author, “my parents sent me to one of my uncles, who was a clergyman in the Black Forest, and who, in order to inspire me with emulation, gave me a companion in my studies. I was, however, frequently reproached for not learning my lesson as well as he did, particularly as more was expected from me than from him. From my uncle, we were both put to school at Baden, near Rastadt, and there, whenever our task was to learn by heart, I was always surpassed by boys who, in their other exercises, were much my inferiors. As every one of those who were remarkable for this talent, had large and prominent eyes, we gave them the nickname of *ox-eyed*. Three years after this we went to school at Bruchsal, and there again the *ox-eyed* scholars mortified me as before. Two years later I went to Strassburgh, and still found that, however moderate their abilities in other respects, the pupils with prominent eyes all learnt by heart with great ease.

“Although,” continues our author, “I was utterly destitute of previous knowledge, I could not help concluding, that prominent eyes were the mark of a good memory; and the connexion between this external sign and the mental faculty occurred to me. It was not, however, till sometime afterwards, that, led on from observation to observation, from reflection to reflection, I began to conceive that, since memory has its external sign, the other faculties might very well have theirs. From that moment every person remarkable for any talent, or for any quality, became the subject of new attention, and all my thoughts directed to a minute study of the form of their heads. Little by little, I ventured to flatter myself that I could perceive one constant shape in the head of every great painter, of every great musician, of every great mechanic, severally denoting a decided predisposition in the individual to one or other of those arts. In the meantime I had begun the study of medicine, where I heard much about the functions of the muscles, of the viscera, &c.; but not a word about the functions of the brain. My former observations then recurred to me, and led me to suspect what I afterwards proved, that the form of the skull is entirely due to the form of the viscus which is contained in it. From that instant I conceived the hope of being able one day to determine the moral and the intellectual faculties of man, by means of his cerebral organization, and of establishing a physiology of the brain. I therefore resolved to continue my researches, until I should attain my object, or find it impossible. The task would have been less difficult had I abandoned myself entirely to nature. But I had already learned too much of the errors and prejudices then taught upon those subjects, not to be biassed by them, and I was still further entangled by the doctrines of metaphysicians, who teach that all our ideas come from our senses; that all men are born alike, that education and accident alone make them differ. If this be true, said I, no faculty can have an external sign, and to study the brain, its parts, and its functions, is absolute madness. Still I remembered my former observations; I knew that the circumstances in which my brothers and sisters, my schoolfellows, my playmates, had, from their infancy, been placed, were all alike. I saw that education was bestowed in vain on some persons, that others had talents without it. I observed a proportionate variety in the dispositions of animals. Some dogs are born hunters, while others of the same litter cannot be taught; some are peaceful, some ill-tempered. In birds there is a similar diversity. The whole animal kingdom spoke then in favour of my strong surmises, and I resolved to prosecute my plan. It was not till thirty years had been spent in uninterrupted study, in observing men of every description, and in many countries, men remarkable for some talent or some defect, for some vice or some virtue; in studying inferior animals, domestic or wild, the inhabitants of air or of earth, that I ventured to embody my observations, and publish them in one comprehensive work.”

Such is the account which Dr. Gall gives of the origin and progress of his discoveries. It has been stated, not indeed in his own words or order, but the scraps and morsels of which it is composed were fairly picked out of his own works. Now, say the phrenologists, if the doctrine of the relation between cerebral developement and mental manifestation,—if, as Dr. Spurzheim has more appositely named it, phrenology, be false—then men cannot sufficiently reprobate the idle nonsense of the little urchin who dared to turn from his rudiments to gaze at the eyes of his con-disciples, and call them by a name which the father of poetry applied only to the queen of the gods, the venerable Juno, *βωωπις ποτνια Ηρη*, ox-eyed; or, as he probably had it in his Hoch-Deutsch dialect, *ochsenaugen*. If it be true, then we (phrenologists) declare that so extraordinary an instance of early sagacity, of premature combination, such an innate spirit of observation and induction, never yet has come to our knowledge. We have seen prodigies of music, of painting, of calculation, of every simple talent, in very unripe infancy; we know that wonders of very early learning have existed; but there is not upon record a person who, at the age of nine, caught the first glimpse of a system which he afterwards made the study of his life; of a system which, as Dr. Spurzheim says, must, if true, “absolutely and entirely change the philosophy of the human mind,” and make the study of mankind a new study. All that we have read of youth, of childhood, fades before this example; and we know no alternative but for men to admire how the doctor has escaped phlebotomy and venesection; or else to say at once that he ranks high, and very high, among the extraordinary geniuses that have lived to honour the human species.

And this is not the only incident which creates a like dilemma. Young Gall, like many other boys, was very fond of looking for birds' nests; but a point in which he differed from the usual truants “who rob the poor bird of its young,” was that his motive was a love of natural history. His observation of the situations in which each species built, easily led him to discover the place of abode; and he spread his nets successfully, because he had studied the habits of the bird that he wished to ensnare. But what he could not do was to return to the spot in the woods or wilds, over brake, over briar, through devious paths, where his prey was caught; in other words, he was not an adept at finding his way. This deficiency induced him to take with him one of his companions, named Scheidler, who possessed this faculty in a very high degree; for, while Gall, after marking his road with boughs and branches, by making incisions on the trees, by employing many means of technical memory, never could unravel the track, his companion, without any effort, without even any apparent attention, never failed to take the shortest

road to every nest and snare. From this arose a brief but interesting colloquy, most characteristic of mankind at large, whose great rule for judging others is self:—"How is it," says Gall, "that you contrive to find your way thus?" "How is it," answered Scheidler, "that you contrive not to find yours?"

Dr. Gall did not immediately perceive anything peculiar in the head of this youth; but, in order to lay it up among the treasures of his observation more faithfully than memory could do, he took an indestructible and rigid transcript of its form, by moulding it in plaster. To this cast he could, at all times, refer; he could study and re-study it; he could compare it with the living and the dead. He was well convinced that a faculty for recognising places, and the ways which lead to them, did exist; and what remained to be done was, to determine the shape of head which was concomitant to this faculty. He, therefore, inquired among his acquaintances for persons distinguished for their local memory, and at length found two. Schenberger, a celebrated landscape-painter, told him that, in his travels, he merely took a sketch of the scenery which he wished to paint, and that afterwards, when he made a more circumstantial drawing of it, every tree, every bush, almost every large stone, came back into his mind. Another was Meyer, the author of *Dia-na-sore*, whose greatest delight was to wander from place to place, and who, not having the means himself of indulging this propensity, always attached himself to some rich man, in order to travel with him. He, too, had an extraordinary power of recognising local relations. The heads of these two persons, then, Gall moulded, and compared them with that of Scheidler. He turned and twisted them in every direction, and for a long time found only differences, whereas what he sought was a resemblance. At length, however, he was struck with a coincidence in the region situated on each side of the root of the nose, and slanting upwards above the eyebrows. From that moment he considered it as probable that the organ of local perceptions was situated in this spot; and, according to his assertion, all his subsequent observations, which have been incredibly numerous, have fully confirmed his opinion.

Dr. Gall, as before mentioned, had many brothers and sisters, all of whom received the same education, and were, in all things, exposed to the same influences; yet their faculties and dispositions were totally dissimilar. One of his brothers showed a very early disposition for devotion; his toys were the ornaments of the Catholic altar, which he made and engraved himself; his pastime was prayer and high mass. His father had intended him for trade, but this profession he peremptorily refused, because, as he said, it would expose him to tell lies. At the age of twenty-three, this young man ran away from his paternal home, and turned hermit. His father, however, recalled him, allowed him to pur-

sue his studies, and five years afterwards he received holy orders, in which he spent a life of mortification and piety. Subsequently to this very juvenile observation, Dr. Gall remarked, that some of his con-disciples had, as he calls it, a receptiveness for religious instruction; while others were totally averse to it. Among the persons who had embraced the clerical profession, he saw some who were studious, pious, and scrupulous; others, who were idle, indolent, and who wished for nothing more than to live at ease, and at the expense of others. He conceived that these tendencies were innate; and, in order to embrace a wide range of experiment, he frequented churches, monasteries, visited religious seminaries, and observed both men and women in the world. One of the first things which struck him was, that the most devout were bald on the summit of the head; "yet," said he, "women are more devout than men, and women are seldom bald. Baldness, therefore, has no connexion with devotion." He then perceived on these bald heads, that the summit was much elevated, sloping as it were from the forehead to the centre; and this shape he found common to both sexes. He then concluded, that an elevation in that region of the brain was the organization which gives a disposition to devotion and religious feelings.

He had not long been in possession of this induction, when a remarkable fact offered itself to his view, imparting a singular conviction to his mind of the accuracy of his conclusion. He remarked that all the pictures of saints, of martyrs, of persons recorded for their religious zeal and sufferings, of our Saviour himself, were high in this region; and that, even in the most remote antiquity, artists had given this peculiar form to all that has been handed down to us of the heads of high priests, of sacrificers, and of whatever persons they held to be most pious, sacred, and venerable.

Such were the first steps of this, the youngest child that ever caught a glimpse of facts, and drew inferences, which he afterwards called philosophy—which he taught as such, and which has found followers. Who could have supposed, that from the perceptions of a mere brat of nine years old, a system could have ensued, which, in the hands of Dr. Spurzheim, would, in the year 1826, have filled not only the large lecture-room of the London Institution, but all the staircases, corridors, and passages leading to it, with hearers? and, great, indeed, must be the folly or the wisdom of the age.

Another observation of this young man was, that, among his school-fellows, the most adept at learning by heart were not those who retained facts the best; in the same manner as local and verbal memory did not always accompany each other in the same mind. Thus, then, was he led to surmise, that memory was of more kinds than one; that it was not a simple faculty: and to a

conclusion which some bearded philosophers had drawn before him, that there is a memory for words, another for places, and another for things; exactly coinciding—but entirely without his knowledge—with the *memoria verbalis*, the *memoria localis*, the *memoria realis*, of his predecessors. He continued to make observations on the world at large respecting this faculty, as he had done respecting the others, and by the same means; and he at length succeeded in assigning the situation of its corresponding organ in the head.

But the most extraordinary instance of folly and presumption, if the system be false, or of sagacity, if it be true, is, that Dr. Gall was not satisfied with observing the talents of his fellow-students; he carried his prying spirit into their moral tendencies, and examined their characters. One of his companions had a head so strangely shaped, that he could not help remarking it. It was particularly broad above the temples, and the boy was renowned for his cunning and his tricks. Another boy, whose countenance bespoke extreme candour—*ars est celare artem*—had a head of the same shape, and Gall immediately mistrusted him. In both cases his conjectures were confirmed, and his observations in later life gave them an additional force. When practising as physician, one of his patients died of consumption; Gall was struck at the breadth of his head in this region; and shortly afterwards a long scene of artifice and swindling came to light. Another person, so notorious as to have been posted as a knave by the police of Vienna, and whose head was of the same shape, confessed to Dr. Gall that he knew no pleasure equal to deceit.

As Dr. Gall acquired experience in his art, his tact became more sure, and he accumulated observations; but his method of proceeding was alike throughout. It would indeed, have been difficult to devise any better method than that which suggested itself at his first observation; and, be his doctrine true or false, that justice is due to him.

One or two more examples of his mode of discovering faculties and organs must be given. To study what is now called combativeness, he collected persons of the lowest classes in his house, treated them with wine, excited their talkativeness respecting each other, and uniformly found that one shape of the head belonged to the contentious, another to the gentle. He followed the same plan with regard to the propensity to thieving, and with the same success. On one occasion, he was requested to examine the head of a lady who was remarkable for the strength and durability of her friendships, and to take a cast of it; and thus was led to the discovery of the organ of attachment. At Vienna, he knew a man, who, from his eternal doubts and irresolution, was nicknamed *Cacadubio*; the remarkable form of his head, compared

with others, revealed this faculty, together with its local habitation. A servant of one of his friends gave the first idea of an organ of benevolence, at a time when he little thought that what is called a good heart is seated in the brain. Some of the organs became first evident to him in the heads of brutes. Thus the difference between the heads of graminivorous and carnivorous animals pointed out what he then called the carnivorous instinct—murder; and which now is termed by the modified name of destructiveness. The innate love of offspring, so necessary to every breathing thing, he found by the difference which exists between the skulls of males and females in general; although he did not know exactly what faculty the occipital protuberance denoted, until he perceived it most strongly in female monkeys, whose attachment to their young is so extraordinary.

Thus it was that Dr. Gall proceeded in comparing the manifestations of the mind with the development and form of the brain, until he had ascertained the situation and functions of twenty-seven organs; all of which he looks upon to be as clearly demonstrated, as observations multiplied in various bearings, repeated upon an incredible number of individuals, and continued during a long life, can demonstrate anything.

Now, if all these observations are correct, we cannot sufficiently commend the Baconian spirit with which they were conducted. It is not very probable that, when Dr. Gall was a young student of medicine in a German university, he had acquired much intimacy with the writings of the great English chancellor; yet he certainly adhered to his mode of amassing knowledge as closely as if Lord Bacon had rocked him in his cradle. Not a single fact was assumed without repeated observation and verification; not a truth was admitted without proof; no *a priori* conceptions were greeted as demonstrations. Still less is it credible that when Gall was hunting after bird's-nests, led by the local memory of his companion Scheidler; less again, that, when, having seen nine winters in the Schwartzwald, he measured the projecting eyes of his schoolmates, he had heard of the lord of Verulam; yet in no single instance was he found tripping in his researches. By an innate impulse, he followed, unconsciously, the precepts of Bacon, and of nature,—because Bacon, Gall, and nature were the same,—as unerringly as if the *Novum Organum* had been his primer. Thus say the phrenologists. (Note 1.)

The system of Dr. Gall, then, they continue, was, as appears in his writings, the result of observation; and to determine its validity nothing was necessary but to verify whether those observations were accurate or not. That a facility for learning by heart is accompanied by prominent eyes is, if true, an independent fact, standing by itself, leaning on no other fact: it is an oak of the forest, not a parasite fungus. Inquiry might stop there, and say,

“I know that you can learn by heart with ease, because I see that your eyes are prominent;” and the assertion would not be either more or less true, be the function assigned to what cause, to what member, to what organization, it may. If, however, the physiology of the function can be ascertained—if its connexion with a certain part of the body can be traced—if it can receive the support of anatomy—inasmuch as anatomy can explain any animal function, it must be confessed that assurance becomes doubly sure.

The visible and tangible signs of the twenty-seven faculties, announced by Dr. Gall, were found upon the external surface of the head; but to attribute them to the muscular integuments would be absurd: still more irrational would it be to suppose that the bony covering, the dura or the pia mater, the tunica arachnoides, had any share in the operations of the mind. In the brain only could the seat of the moral powers be placed; and to it the attention of the author was immediately directed.

It is now time to introduce to the reader's acquaintance the second person whose name stands at the head of this article, and whose anatomical labours bear so conspicuous a part in the promotion of phrenology. Little had been done to connect this science with anatomy; and the dissection of the brain by some appropriate method was yet a desideratum, when Dr. Spurzheim, of whom more ample notice shall presently be taken, became the pupil, and afterwards the associate, of Dr. Gall.

The mode of examining this viscus then in practice among anatomists, and not yet entirely abandoned, was, after removing the membranes which enclose it, to cut through it in different directions, to scrape away a large portion of its substance to show the falx cerebri, the corpus callosum, the fissura silvii, the tuberculæ quadrigeminæ, the fornix, and the septum lucidum, together with many other parts, of which the *names* are well known and barbarous, but of which compassion on the reader's jaws and mind forbids the enumeration. To Drs. Gall and Spurzheim this entire method appeared faulty, and they were induced to invent some other mode. Not that they expected anatomy to be more indiscreet in revealing the secrets of nature on this than on any other occasion, or to tell why and how the brain thought and felt, any more than why the liver secreted bile. They knew that the structure of an organ seldom denotes its functions; but they knew also that anatomy and physiology cannot be in contradiction. The most obvious method was to examine, in the dead body, whether the volume of the brain, in the region where an organ was supposed to be situated, bore a settled proportion to the manifestation which the living subject had given of the corresponding power of mind. This question was investigated by experiment; and it was ascertained, by the inspection of a very great number

of subjects, that the volume and the faculty were in constant unison.

This was an immense step; but "*nil actum reputans dum quid superesset agendum*," Drs. Gall and Spurzheim were still anxious to obtain more satisfactory knowledge of the structure of the brain. The figures and drawings which transverse cuts of the cerebellum offer, the arbor vitæ, however picturesque, did not content them. A fortunate accident occurred at length, and one more mystery of nature was explained.

A woman who had been afflicted from her youth with hydrocephalus, died of an inflammation of the bowels at the age of fifty-four. Her head was found to contain four pounds of water; and this liquor had so insinuated itself into every little cavity,—had so divided every little vessel from the substance in which it was imbedded, that their texture became immediately visible. Drs. Gall and Spurzheim then endeavoured to find a method which they might substitute at pleasure for that which diseased nature had employed in the case of this woman, and of many other hydrocephali. It was not, indeed, till they reached Paris that, stimulated by some objections made, as shall presently be related, by the French Institute, they fully assured themselves of the most effectual methods of performing this important operation. There they discovered that if the brain be macerated in nitric acid, diluted with alcohol, or in alcohol alone, if it be boiled for twelve or fifteen minutes in oil; if a small jet of water be projected upon any part of it from a syringe; or if it be blown upon through a blow-pipe, a separation is effected which answers every purpose. By introducing the hand, too, between the convolutions, a division may be operated; and by any of these means the structure of the brain becomes as evident as when it has been macerated for years in the morbid serosity of hydrocephalus.

Previously to these anatomists, the brain was considered as a pulpy mass, in which the whole nervous system had its origin. If by chance any attempt was made to assign a function to any particular part, to explain its use or nature, the success was as small as the epithets by which those parts were named were uncouth. Neither was this extraordinary. Let us suppose that any muscle of the body, the soleus maximus for instance, had always been cut through transversely, it would always have presented a transverse section of its mass; but no such idea as we now have of its fibrous texture could have been formed. But the mere inspection of a muscle at once denotes a fibrous texture, which in the brain is not so evident; and the phrenological anatomists have the merit of a very important discovery, in showing that the white substance of the brain is not less truly fibrous than the soleus maximus. And here would be the place to introduce some anatomical details in support of our doctrine, but in pity to our ge-

neral readers we shall refrain. We can, however, assure them, that every fact evinced by dissection is in our favour, and we defy our antagonists to the proof. Drs. Gall and Spurzheim have most triumphantly answered every objection on this head, and dread not to encounter any more which can be adduced. Let it be remembered merely that two great facts have been incontrovertibly established:—1st, the possibility of unrolling the convolutions of the brain; 2d, the fibrous texture of the white substance. (Note 2.)

Before Dr. Gall had received all the lights which the collateral sciences could throw upon his doctrine, and supported principally by the plain fact, abundantly ascertained, that a certain form of the head constantly accompanied a particular mental power, he began to communicate his knowledge to others. He was at that time established as a physician at Vienna, a city not very remarkable for the brilliancy of its scientific lights. His auditors were not numerous, but they were select; among them were Professors Froriep, Walther, Martens, who published accounts of what they had heard; and lastly, the best of all, Dr. Spurzheim, who, already advanced in the study of physic, became his pupil in 1800, and in 1804 his associate. Dr. Gall at first spoke only of the elevations and depressions on the cranium, as denoting the presence or the absence of determinate dispositions and talents; neither could he then speak of much more. This imperfect state of his doctrine entailed upon it a disadvantage which it has hardly yet surmounted; and exposed it to very absurd criticism and ridicule, under the names of craniology, craniology, (recollect, gentle reader, that phrenologists, not the *Foreign Quarterly*, speak,) bumps, protuberances, &c. When, however, he became strengthened by the positive conclusions of anatomy, and by the cheering analogies of physiology, he grew more confident in his system; and that confidence imparted to it a form and pressure more worthy of so vast a subject. His conversations at length assumed the appearance of lectures; but he had not continued them long, when the Austrian government took the alarm, conceiving that to explain the functions of the brain, and to improve its anatomy, must be dangerous to society. An order was issued, prohibiting all private lectures, unless by special permission. The doctor was reduced to silence, but as the government was less solicitous about the morality of strangers than of its own subjects, leave was granted to corrupt them by teaching them the pernicious doctrine, and one or two Englishmen thus learnt what the Austrians know not yet, that the brain is of some use. It is not surprising, that they who have the largest portion of this organ should be the most curious to know to what end it is given.

In the year 1805, our masters, warmed with the zeal of proselytism, turning their backs upon the lofty steeple of St. Stephen's

Kirche, to find their world elsewhere, sallied forth to attack the reigning cerebral and metaphysical doctrines of their fellow-creatures. They travelled together, pursuing their researches in common, to more than thirty towns of Germany, Holland, and Switzerland, and never stopped till they reached Paris. This itinerancy has been made the subject of reproach to them in this country; but we are all too apt to judge of others by ourselves. The habits of the nations which they wished to convert required such a mode of proceeding. Their own native land, divided into many petty states, has innumerable little points, but no one large focus of light. From the one to the other of these thought travels as slowly as the slumbering note twanged through the twisted horn and snaps-swallowing throat of a Westphalian postboy. In Holland it advances about as rapidly as an Amsterdam Cupid, flying on the wings of Love, in a Dutch trekschuit. In France there is one great metropolis of wit, as flashy as it is frivolous; and in this, words, with the ideas annexed to them, if any there be, whiffle about from the Faubourg St. Germain to the Faubourg St. Honore, and back again across the Pont de Louis XVI., in the cutting of a caper; but this emporium stands in the dreary middle of a vast wild, and preaching any where but in Paris to the French nation would literally be preaching in the desert. In Britain, on the contrary, a new idea mounts a mail-coach, drawn by four blood-horses, with plated harness, as light as the chariot of Queen Mab, and sweeps along with Macadamized speed and Magna Charta security, from Land's End to John o'Groat's house, in as short a time as Puck would take to "put a girdle round about the earth." Everywhere the fame of our professors had preceded them—everywhere new discoveries awaited them; and they had not gone one half of their round among the German universities, before they had met with more applause and more opposition than they had experienced in all their former lives.

A feature of these memorable travels was the visit of Dr. Gall to the prison of Berlin, and the fortress of Spandau. On the 17th of April, 1805, in the presence of the chiefs of the establishment; of the inquisitors of the criminal department; of various counsellors; and of many other witnesses, he was conducted to the prison at Berlin, where upwards of two hundred culprits, of whom he had never heard till that moment, to whose crimes and dispositions he was a total stranger, were submitted to his inspection. Dr. Gall lays much weight upon this visit, as a very great practical test of the truth of his system; and the result is official, being witnessed by persons in the employment of the Prussian government, and proposed for that purpose.

Dr. Gall immediately pointed out, as a general feature in one of the wards, an extraordinary developement in the region of

the head where the organ of theft is situated, and in fact every prisoner there was a thief. Some children also detained for theft, were then shown to him; and in them, too, the same organ was very prominent. In two of them particularly it was excessively large; and the prison-registers confirmed his opinion that these two were most incorrigible. In another room, where the women were kept apart, he distinguished one drest exactly like the others, occupied like them, and differing in no one thing but in the form of her head. "For what reason is this woman here," asked Gall, "for her head announces no propensity to theft?" The answer was, "She is the inspectress of this room." One prisoner had the organs of benevolence and of religion as strongly developed as those of theft and cunning; and his boast was, that he never had committed an act of violence, and that it was repugnant to his feelings to rob a church. In a man named Fritze, detained for the murder of his wife, though his crime was not proved, the organs of cunning and firmness were fully developed; and it was by these that he had eluded conviction. In Maschke, he found the organ of the mechanical arts, together with a head very well organized in many respects; and his crime was coin-ing. In Troppe he saw the same organ. This man was a shoemaker, who, without instruction, made clocks and watches, to gain a livelihood in his confinement. On a nearer inspection, the organ of imitation was found to be large. "If this man had ever been near a theatre," said Gall, "he would in all probability have turned actor." Troppe, astonished at the accuracy of this sentence, confessed that he had joined a company of strolling-players for six months. His crime, too, was having personated a police-officer, to extort money. The organs of circumspection, prudence, foresight, were sadly deficient in Heisig, who, in a drunken fit, had stabbed his best friend. In some prisoners he found the organ of language, in others of colour, in others of mathematics; and his opinion in no single instance failed to be confirmed by the known talents and dispositions of the individual.

On the 20th of April the visit was made at Spandau, in presence of the privy-counsellor Hufeland, one of the most philosophic physicians of his age; and of several other official persons of similar respectability. Four hundred and seventy heads were submitted to inspection. In every robber the organ of theft was highly developed, accompanied by various other organs in the different individuals. In one Dr. Gall perceived the organ of mathematics strongly pronounced; together with others denoting skill in the mechanical arts. This man, Kunisch, had in fact committed several robberies, in which his dexterity had much assisted him, and his address was such, that he was intrusted with the care of the spinning-machines in the house of correction.

Gall asked him whether he had any knowledge of calculation? "Do you think I could put together a piece of work like this, if I could not calculate the effects?" An old woman, in whose head theft, theosophy, and love of offspring were the prominent organs, confessed the justice of her punishment, and returned thanks to God for having placed her in that establishment; for since her confinement, her children, whom she herself could not have educated, had been sent to an orphan-house. Albert, distinguished for his haughtiness to his fellow-prisoners, was an example of a strong development of the organ of self-esteem. Regina Doering, an infanticide, was presented to him among a band of robbers, but he immediately called to Dr. Spurzheim to remark how in one organ her head resembled that of a servant of his at Vienna, a very excellent person in all other respects, but who delighted in killing animals. In Kunow, he found the organ of music predominant; and it appeared that all the misfortunes of this person proceeded from his having ruined himself by this his ruling passion. Raps had the organs of theft, of murder, and of benevolence, highly developed. His crime was having robbed an old woman, round whose neck he had fastened a rope with intent to strangle her, but having completed his robbery, an emotion of pity prompted him to return and loosen the rope, by which act the life of the old woman was saved. Such is an extract of the narrative of these celebrated visits to the prisons of Berlin and Spandau, which, in their day, attracted much notice throughout Germany.

But the great trial still awaited our travellers at the bar of the French Institute; and there they presented themselves, to receive official support or condemnation, in the face of expectant Europe.

The Institute was then in all its glory. In proportion as Buonaparte had cannonaded, it had grown enlightened. As the hero was the referendary of military justice, so was it the areopagus of scientific truth. The chief of the anatomical department was M. Cuvier; and he was the first member of this learned body to whom Drs. Gall and Spurzheim addressed themselves.

M. Cuvier is a man of known talents and acquirements; and his mind is applicable to many branches of science. But what equally distinguishes him with the versatility of his understanding, is the suppleness of his opinions. He received the German doctors with much politeness. He requested them to dissect a brain privately for him and a few of his learned friends; and he attended a course of lectures given purposely for him and a party of his selection. He listened with much attention, and appeared well-disposed toward the doctrine; and the writer of this article heard him express his approbation of its general features, in a circle which was not particularly private.

About this time, the Institute had committed an act of extraordinary courage, in venturing to ask permission of Buonaparte to award a prize medal to Sir H. Davy, for his admirable galvanic experiments, and was still in amaze at its own heroism. Consent was obtained; but the soreness of national defeat rankled deeply within. When the First Consul was apprised that the greatest of his comparative anatomists had attended a course of lectures by Dr. Gall, he broke out as furiously as he had done against Lord Whitworth; and at his levee he rated the wise men of his land for allowing themselves to be taught chemistry by an Englishman, and anatomy by a German; *sat verbum*. The wary citizen altered his language. A commission was named by the Institute to report upon the labours of Drs. Gall and Spurzheim; M. Cuvier drew up the report. In this he used his efforts, not to proclaim the truth, but to diminish the merits of the learned Germans. Whenever he could find the most distant similarity between the slightest point of their mode of operating, and any thing ever done before, he dwelt upon it with peculiar pleasure: and lightly touched upon what was really new. He even affected to excuse the Institute for having taken the subject into consideration at all, saying that the anatomical researches were entirely distinct from the physiology of the brain, and the doctrine of mental manifestations. Of this part of the subject Buonaparte, and not without cause, had declared his reprobation; and M. Cuvier was too great a lover of liberty not to submit his opinion to that of his Consul. His assertion, too, that the anatomy of the brain had nothing to say to its mental influence, he knew to be in direct opposition to fact; but even the meagre credit which he did dare to allow to the new mode of dissection, he wished to dilute with as much bitterness as he could. So unjust and unsatisfactory, so lame and mutilated did the whole report appear, that the authors of the new method published an answer, in which they accused the commissaries of not having repeated their experiments. Such was the reception which the science, that we (phrenologists) now see spreading over the globe, met with from the Academy of the Great Nation.

In November, 1807, Dr. Gall, assisted by Dr. Spurzheim, delivered his first course of public lectures at Paris; and these the writer of this article heard with intense interest. His assertions were supported by a numerous collection of skulls, heads, casts; by a multiplicity of anatomical, by a multiplicity of physiological facts. Great, indeed, was the ardour excited among the Parisians by the presence of the men, who, as they supposed, could tell their fortunes by their heads, as well as Mademoiselle le Normand could do with a pack of cards; and chiromancy was abandoned for cranioscopy. Every one wanted to get a peep at the necromancers; every one was anxious to give them a dinner

or a supper; and the writer of this article actually saw a list on which an eager candidate was delighted to inscribe himself for a breakfast, distant only three months and a half; at which breakfast he sat a wondering guest. But this was nearly all the harvest which phrenology reaped in Paris; and the season was not as long as the roll of festivals which curiosity had cooked. Though Dr. Gall has been a constant resident there, and has delivered lectures whenever an opportunity occurred, the public is not phrenological: though Dr. Spurzheim has done all in his power to diffuse the science there, it has remained recluse. Some periodical publications in England have much overrated the attention paid to it among our neighbours; but in truth the French have thought little upon it, neither will they think upon it, until their minds are more seriously bent upon a study which hitherto they have much neglected,—the study of the human being in other parts besides nerves and muscles. As a proof of this, we will mention that, in 1824, the government of that nation, as wise as that of Austria had been, prohibited the delivery of all lectures without its special permission; and Dr. Spurzheim was obliged to confine himself to private conversations at his own house. This proceeding, which no rulers of a truly enlightened people would have dared to attempt, was the death-blow to all phrenological inquiry in France, and an apt reply to the lucubrations of the *New Edinburgh Review*, which had pompously stated that the French were greater proficient in phrenology than the British. It must have been sufficient to disgust Dr. Spurzheim with every project of continuing his instructions there; and is most probably the reason why, within the last two years, he has taken this country so entirely under his tuition, and made it most essentially his phrenological domain.

It is probable, however, that, long before this time, a mind like Dr. Spurzheim's must have seen that the soil really appropriated to the seeds of his doctrine was profound, reflecting England, where every power of thought is kept so much within its own province, and is so well employed there, and where so important a branch of philosophy would be received with all due reverence. As soon as the communications were open, he came to this island, and repaired to London. The moment was not propitious. The nation was still smarting with the scars of war. Many things, too, had indisposed it to the lore of Germany; it was jealous and touchy upon the subject of quackery. Mesmer, Mainduke, Perkins, the morbid sentimentalism of Miss Anne Plumptre's translations, had made it so; and Dr. Spurzheim had to struggle against all these obstacles.

The campaign was opened by a dissection of the brain, at the Medico-Chirurgical Society's in Lincoln's-Inn Fields; and the novelty, as well as the truth of the demonstration, that this viscus

is composed of fibres, created no small surprise among the learned audience. The choice of such a mode to enter upon the subject was eminently judicious, as it placed it at once upon a respectable footing, by making an appeal to science. The effect in its favour, however, was not so general as might have been expected. When a course of lectures was delivered, not more than forty auditors were present; neither did a second course attract a more numerous circle.

From London, Dr. Spurzheim proceeded to Bath, Bristol, Cork, and Dublin, where also he delivered lectures. He then proceeded to Scotland. If, during his excursion, the harvest of proselytes was not yet very great, the additions to his observations were extensive and interesting; and it is much to be wished that he may one day publish his remarks upon the different races which he clearly distinguished, spread like horizontal strata over the land through which he travelled. In the Scottish capital another fate attended him, and a decisive moment was approaching. There, as in London, he opened his campaign by the dissection of the nervous mass; but the circumstances of the demonstration were highly piquant.

The writings of Drs. Gall and Spurzheim, conjointly and separately, had attracted the attention of our periodical critics, and an article had appeared in the *Edinburgh Review* for June, 1815, in which these authors were most heartily reviled. Hardly an opprobrious epithet in the language was omitted on their moral, as on their intellectual characters, and they were roundly called fools and knaves. The conclusion is as follows:—"The writings of Drs. Gall and Spurzheim have not added one fact to the stock of our knowledge respecting either the structure or the functions of man; but consist of such a mixture of gross errors, extravagant absurdities, downright mis-statements, and unmeaning quotations from Scripture, as can leave no doubt, we apprehend, in the minds of honest and intelligent men, as to the real ignorance, the real hypocrisy, and the real empiricism of the authors." Should phrenology prove false, the sagacity of this article will be most brilliant, even though, from beginning to end, it attempts no means of refutation but assertion. Should the doctrine prove true, then that production will be held by all men, as it now is by phrenologists, as the most flippant, pert, vulgar, ignorant, and presumptuous, that ever appeared in that able collection; and very wise, or very weak indeed, must be the physiologist to whom the works there criticised can teach nothing.

The intention of Dr. Spurzheim always was to visit the Scottish Athens, but this article confirmed it. He procured one letter of introduction for that city, and but one; that was to the reputed author of the vituperating essay. He visited him, and obtained permission to dissect a brain in his presence. The author him-

self was a lecturer on anatomy, and the dissection took place in his lecture-room. Some eyes were a little more, or a little less, clear-sighted than others, for they saw, or thought they saw, fibres. A second day was named. The room was as full as it could be, particularly as an intermediate bench was reserved for Dr. Spurzheim to carry round the subject of enquiry to every spectator. There, with the *Edinburgh Review* in one hand, and a brain in the other, he opposed fact to assertion. The writer of the article still believed the *Edinburgh Review*, but the public believed the anatomist; and that day won over near five hundred witnesses to the fibrous structure of the white substance of the brain, while it drew off a large portion of admiring pupils from the antagonist lecturer.

Thus aided by success, Dr. Spurzheim opened a course of lectures on the anatomy and the functions of the brain, and its connection with mind. He used to say to the Scotch, "You are slow, but you are sure; I must remain some time with you, and then I'll leave the fruit of my labours to ripen in your hands. This is the spot from which, as from a centre, the doctrines of phrenology shall spread over Britain."

These predictions proved true. Converts flocked in on all sides; the incredulous came and were convinced. After a residence of seven months Dr. Spurzheim returned to London; but the seeds of phrenological folly or wisdom were sown, and so rapidly did they germinate, that it would almost seem there was not a good plant among them.

After an absence of three years from Paris, Dr. Spurzheim returned there, and did not visit England again until 1825. Meanwhile, the voices of phrenologists, the clamours of the enemies of the science, were loud. The doctrine of phrenology had set the Old and the New Town, from the Calton Hill to the Castle, in a brain fever, a cerebral fermentation, which continued to send up bubbles, froth, and ardent spirit in phrenological confusion, until the year 1820, when, on February 22, the ebullition subsided, by the formation of a society, at the head of which stands the name of Mr. G. Combe. This gentleman had begun by being a sceptic, but, by degrees, he was convinced, and is now an ardent sectary. He was, we (phrenologists) believe, the proposer and is the president of the earliest phrenological society formed in this world; and his zeal and his writings, his perseverance and his abilities, have placed him very high among British phrenologists.

In the beginning, this society was without heads or brains; and a phrenological society without heads or brains is still poorer than a mineralogical society without quartz or corundum, or a geological society without gneiss or granite. The penury was quickly supplied by ample donations. Not only skulls and masks, but

the other necessary appendages just named, poured in from every side, insomuch that never did a learned body exist which had such a profusion of them for its own and others' use. Their collection increased most rapidly, and was liberally left open to public inspection. Their meetings were periodical; and in 1823 they published a volume of phrenological transactions, which, if the science be not false, will long be esteemed. They gave an example, too, of candour at least, which was soon followed, and similar societies were formed in many other cities. Edinburgh had to wipe away a large offence committed against phrenology, and thus did she make amends.

It would be long to enumerate all the successes and triumphs which this new science now obtained in the shape of societies, collections of busts, lectures fully attended in different parts of the British empire. London, Exeter, Manchester, Glasgow, Liverpool, Cork, Hull, Dublin, Paisley, Dundee, vied with each other, according to their means, to learn and diffuse the science; and, in an instant, as soon as the doctrine was fairly stated, more phrenologists sprung up among us than during twenty years in the country where Drs. Gall and Spurzheim had been residing all that time.

In the British colonies, too, phrenology has not been neglected; and Dr. Murray Paterson, in the East India Company's service, delivered lectures at Calcutta, where a phrenological society was about to be formed.

But the freest of nations must always be that in which whatever relates to the study of man will excite the greatest interest. Without such knowledge, indeed, liberty cannot exist. Such is a cause of the warm reception which phrenology has met with among its partizans in England, and of the no less warm opposition of its adversaries. The reverse, too, has procured it a tepid attention in France; for, whatever be the forms of liberty there its spirit is yet to be born. It is, then, easy to conjecture what may be the mind of the United States of America toward this doctrine. Dr. Caldwell, medical professor in Pennsylvania University, has edited "*Elements of Phrenology*," and delivered lectures in Baltimore, Washington, &c.; and in one of the American Universities, a professor of phrenology is as regularly announced as of moral philosophy, or of anatomy, of chemistry, or of history. Neither have all the European States been heedless of it; and the city of Copenhagen boasts of Drs. Otto and Hoppe.

It must not, however, be supposed, continue the phrenologists, that all this was effected in Britain without opposition or ill-will. The clamour against phrenology was loud and mobbish. The laughing journals scoffed, the weeping ones lamented; some would have put it down by authority, some by ecclesiastical ana-

thema. It would be too long and doleful to tell all the means to which some—few, indeed—resorted, to crush it without a hearing. But it is a principle in British law, because it is a feeling in British justice, that a man taken in the very act of murder shall not be dragged off to the first lantern-post, and there hanged without judge or jury. The same sentiment pervades all our decisions; and while some roared out that Drs. Gall and Spurzheim should be tied up in a sack with their evil deeds and drowned as witches, others demanded, as did a dying Irish judge—Lord Kilwarden—for his assassins, that they should be tried by the laws of God and of their country. A hearing has been obtained; the trial is now proceeding; and all that we (phrenologists) pretend to do is to address the jury, not for favour or for rigour, not for mercy or for fury—but for justice.

The doctrine, as it is now taught and received in the countries just mentioned, does not exactly coincide with the original ideas of Dr. Gall, neither is his view of some of the details, at this moment, in all respects the same as that which Dr. Spurzheim has taken. Immense as have been the toils and labours of the creator of phrenology, it was decreed that his fate should still be human; and that his life should not close without his learning, that, vast as was his horizon, it was not yet the limits of the earth.

The mind of Dr. Spurzheim, in our opinion (phrenologists), seems to have been cast in a still more metaphysical mould than that of Dr. Gall, who, though he has shewn very uncommon acuteness in his abstract inquiries upon mind, has yet left some points so feeble as to endanger the whole system. As an example—and it is the most striking of all—Dr. Gall attributed to the same organs,—pride, the love of authority, self-esteem in man, and the predilection which some animals show for elevated regions, as the wild goat, the eagle, &c. Now this even his best-disposed partisans found rather hard to grant; for it is not easy to admit that moral and physical height are one and the same thing. This piece of doctrine cooled his friends, heated his enemies, and stood in strong opposition to the adoption and diffusion of his system. Dr. Spurzheim felt the necessity of examining it more closely. The part of the brain where this organ is placed by Gall, is prominent sometimes in the upper, sometimes in the under, portion; consequently it is not one organ; for the very essence of an organ is to be one and entire. Hence, then, Dr. Spurzheim inferred two organs; and experience has confirmed his conjecture. To one of these he attributes self-esteem, to the other the love of habitation; and thus has rescued the system from the ridicule thrown upon it by confounding two such opposite sentiments as those which prompt a man to esteem himself, and a chamois to climb a mountain; while, at the same

time, he has shown the connection which might have led to the error, as long as the separation was not made.

Another of Dr. Spurzheim's modifications was a similar analysis of the faculty of music. The well-known fact that there are many excellent harmonists who are but indifferent timeists, and *vice versa*, induced him to conclude that an organ of music must be composed of an organ of tone and an organ of time; and he directed his researches towards the discovery. Experience and observation have authorized him to resolve the former simple organ into the two separate ones just mentioned; and his opinion has been adopted by all the phrenologists of this island.

In like manner it occurred to Dr. Spurzheim that poetry could not depend upon a simple faculty, but that it must have its origin in more powers than one. Besides, there are persons endowed with a large developement of the organ to which poetic inspiration is attributed, and who are not poets. A feeling for the grand and beautiful, which gives exaltation and rapture to the mind, Dr. Spurzheim considers to belong to this portion of the brain, and he terms it the organ of ideality, as one of its chief functions is to picture an ideal world of beauty and sublimity; to impart enthusiasm; and, in the fine arts, to accomplish very much of what has usually been attributed to imagination.

Dr. Spurzheim had met with persons in whom the organ of theosophy was large, and yet religious feelings feeble. He observed that some of these were antiquarians, others courtiers; in short, that the object of their respect was not always a Supreme Being. He suspected, then, that the fundamental feeling was not religion, but a mere propensity to respect and venerate. He termed it the organ of veneration, without specifying, in any manner, the thing which it venerates. When joined with the love of property, it may venerate wealth; with ambition, power; with vanity it makes a courtier; with eventuality an historian—an antiquarian. Among the organs enumerated by Dr. Gall, there is one in connection with visions, though none in combination with which, veneration would select almighty power and supernatural agency for its object. Dr. Spurzheim, knowing how little man can exist without the knowledge and worship of a Supreme Being, turned his attention to the research of an organ and faculty which might guide him to that end; and in fact discovered one, which he named at first supernaturality, and afterwards marvellousness. This faculty directs veneration towards the worship of one or more supernatural beings, the choice and number of which are more select and noble, in proportion as the higher faculties are more developed and exercised.

Another proof of what we (phrenologists) consider as the superior analytical talent of Dr. Spurzheim, is the discovery he has made of separate organs, each destined to take cognizance of

some special physical quality in objects. Dr. Gall had found an organ for the perception of colour; another for number; another for place: but these discoveries did not lead him to the general conclusion, that all the other properties of bodies, as well as their colour, number, and place, would be bestowed in vain for man, if man had not the faculties by which he could perceive them. The analogies of the science indicated that their situation must be in the vicinity of the other organs destined to similar ends; and they have all been found in the ciliary ridge. They are—size; momentum, in which is included a very long catalogue of properties, once thought distinct from each other, but now known to be in fact but one; and order. The latter Dr. Spurzheim discovered in England, and order certainly is a characteristic of the nation.

The additions which Dr. Spurzheim has made to the number of the simple fundamental faculties of human beings, not before admitted by Dr. Gall, are, including marvellousness, eight. But it is not the number, it is the spirit of these modifications which phrenologists principally admire. If some persons accuse Dr. Spurzheim of having abandoned the Baconian severity of his predecessor, and of indulging himself in *a priori* hypotheses, those very conjectures prove the extent of his analytical sagacity. To do him justice in this respect, it is indispensable to distinguish between inductions and facts. No fact, the existence of no faculty or organ, was admitted by him upon conjectural evidence. Before he adopted any new power of mind, in conjunction with any yet unnoticed cerebral developement, he waited, as rigorously as Gall could do, for the result of repeated observation; but to investigate such and such a region of thought, and of the brain—to turn his inquiries in this or that direction—he was, indeed, guided by his previous reflections and inductions. The truth of these time has proved, to his no small honour—if, indeed, they and all the rest be true; and he has the glory, not very common, of anticipating by meditation, the prudent march of experiment. Whatever talent Dr. Gall may have shown in his earlier observations—however acute, and clear, and philosophic he may have been in his investigations, physiological and moral, he does not seem, at any period of his labours, to have been carried forward by preconceived notions respecting the primitive faculties, but to have proceeded from step to step as each successive conviction casually led him. This is not meant as a reproach to Dr. Gall; for the march of his mind was, perhaps, more steady and secure on that account; but the sagacity of Dr. Spurzheim, who, by general reason, foresaw the law of nature before he had proof of it, and afterwards proved it, is of a very high order. When metaphysicians reproached Dr. Gall with his mode of proceeding, and with not first determining

what the primitive powers were, and then seeking out their organs in the brain, his constant answer was, "Do you metaphysicians tell me what the primitive faculties are, and I'll find out the corresponding organs." But this they neither did nor could do; and Gall continued, as some would say, empirically, to compare mental manifestations with cerebral developement, until he determined their mutual dependence.

Another part of the system, which was not without its inconveniences, was its nomenclature. The first observations and conclusions of Dr. Gall could be made only in extreme cases; for, when a faculty and its organ are weak and small, they could not attract an inexperienced eye, as that of Gall, like that of other men, necessarily was, before he had become familiar with them. When, indeed, he had acquired the habit of observing them, their slightest modifications became visible; but the name which had been derived from the exaggeration of the faculty became inapplicable. The first determination of one organ was made in thieves, of another in murderers; and the one was very naturally called the organ of theft—the other the organ of murder. But these faculties exist among mankind in diminished forms, and in various modifications; and to call them constantly by these names would evidently be an abuse of language. In the use of these terms, however, Dr. Gall perseveres: while Dr. Spurzheim has adopted more proportionate epithets, calling the one the organ of acquisitiveness, from its wish to acquire—a wish which, when extreme, and not controlled by the superior sentiments and faculties, does prompt to theft; but which, when under the guidance of the moral sense, and aided by such mental powers as can promote its honest gratification, becomes a motive of most conscientious exertion: the other he calls destructiveness, implying the very first wish of an infant to tear and break an insect or a toy. "I saw," says Valeria to Virgilia in *Coriolanus*, speaking to her of her son, "his father's son, a very pretty boy,"—"I saw him run after a gilded butterfly; and when he caught it, he let it go again, and after it again; and over and over he comes, and up again; caught it again: or whether his fall enraged him, or how 'twas, he did so set his teeth and tear it! Oh, I warrant how he mammoaked it!" It includes, too, the very last measure of crime—murder, and assumes every intermediate degree, according to its developement and its combinations. To call all these by one word certainly is not correct, however difficult it might have been to do otherwise, as long as the range and functions of a faculty were not determined; but the nomenclature of Dr. Spurzheim proceeds upon more philosophical views, although even that has been found subject to some objections. Neology is always displeasing, at least until the ideas on which it is founded are fully established; and to embrace the entire

scope of a faculty in one word is not easy, particularly as much yet remains to be settled with regard to the metaphysics of the faculties, though their general functions are fully determined. But without new words new ideas cannot be expressed; and without new ideas mankind rests stationary. Hallowed be the vices (the dulcia vitia) of language, which impart a truth unknown before!

To give the reader materials for judging the state of this German candidate for a place in philosophical society, and of knowing the two men to whom it owes its birth and progress, he is here presented with a diagram of the system such as Dr. Gall made, and still makes it; and of another comprising Dr. Spurzheim's latest modifications. As Dr. Gall has not himself translated his names into English, we give them in the original German, with an attempt of our own to explain them;—

- No. 1. Zeugungstrieb—the instinct of generation.
- No. 2. Jungenliebe, Kinderliebe—the love of offspring.
- No. 3. Anhänglichkeit—friendship, attachment.
- No. 4. Muth, Raufsinn—courage, self-defence.
- No. 5. Würgsinn—murder, the wish to destroy.
- No. 6. List, Schlaueit, Klugheit—cunning.
- No. 7. Eigenthümsinn—the sentiment of property.
- No. 8. Stolz, Hochmuth, Herschsucht—pride, self-esteem, haughtiness.
- No. 9. Eitelkeit, Rhumsucht, Ehrgeitz—vanity, ambition.
- No. 10. Behüsamkeit, Vorsicht, Vorsichtigkeit—cautiousness, foresight, prudence.
- No. 11. Sachgedächtniss, Erziehungs-fähigkeit—the memory of things, educability.
- No. 12. Ortsinn, Raumsinn—local memory.
- No. 13. Personensinn—the memory of persons.
- No. 14. Wortgedächtniss—verbal memory.
- No. 15. Sprachforschungssinn—memory for languages.
- No. 16. Farbensinn—colours.
- No. 17. Tonsinn—music.
- No. 18. Zahlensinn—number.
- No. 19. Kunstsinn—aptitude for the mechanical arts.
- No. 20. Vergleichender Scharfsinn—comparative sagacity, aptitude for drawing comparisons.
- No. 21. Metaphysischer Tiefsinn—metaphysical depth of thought, aptitude for drawing conclusions.
- No. 22. Witz—wit.
- No. 23. Dichtergeist—poetry.
- No. 24. Gutmüthigkeit, Mitleiden—good-nature
- No. 25. Derstellungssinn—mimickry.
- No. 26. Theosophie—theosophy, religion.
- No. 27. Festigkeit—firmness of character.

Dr. Spurzheim's arrangement of the faculties is comprised in orders, genera, &c.: they are:—

ORDER I. *Feelings, or Affective Faculties.*

GENUS I. Propensities:—No. 1. Amativeness. No. 2. Philoprogenitiveness. No. 3. Inhabitiveness. No. 4. Adhesiveness. No. 5. Combativeness. No. 6.

Destructiveness. No. 7. Secretiveness. No. 8. Acquisitiveness. No. 9. Constructiveness.

GENUS II. Sentiments:—No. 10. Self-esteem. No. 11. Approbativeness. No. 12. Cautiousness.

GENUS III. Superior Sentiments:—No. 13. Benevolence. No. 14. Veneration. No. 15. Firmness. No. 16. Conscientiousness. No. 17. Hope. No. 18. Marvellousness. No. 19. Ideality. No. 20. Mirthfulness, or Gayness. No. 21. Imitation.

ORDER II. *Understanding, or Intellect. External Senses—Feeling, Taste, Smell, Hearing, Sight.*

GENUS II. Perceptive Faculties; the Intellectual Faculties which perceive the existence of external Objects and their physical Qualities:—No. 22. Individuality. No. 23. Configuration. No. 24. Size. No. 25. Weight and Resistance. No. 26. Colour.

GENUS III. Intellectual Faculties which perceive the Relations of external Objects:—No. 27. Locality. No. 28. Calculation. No. 29. Order. No. 30. Eventuality. No. 31. Time. No. 32. Tune. No. 33. Language.

GENUS IV. Reflective Faculties:—No. 34. Comparison. No. 35. Causality.

It is thus modified that Dr. Spurzheim has disseminated the doctrines of phrenology since he has fixed his residence in this island. (Note 3.)

The attacks upon the science, however, have by no means become less virulent during this period; and its old enemy has again entered the lists. The LXXXVIIIth No. of the *Edinburgh Review* opens with an article which pretends to nothing less than to put down phrenology for ever, but which the sectaries hold to be a still more pitiful production than any that had preceded it in the same *Review*.

In reading this precious article *once* over, with a pencil in our hands, (say the phrenologists) we were induced no less than one hundred and fifty-three times to mark some passage which struck us as reprehensible, under one or other of the following heads:—
 1. Ignorance of every principle of phrenology, of the situation, size, functions, and value of the organs, and of the metaphysics of the phrenologists. 2. Ignorance of the general principles of human nature in its widest bearings. 3. Total inaptitude for philosophical pursuits and general science, and a mind the antipode of Baconian. 4. Unsound and confused notions upon every system of metaphysics. 5. Wilful misrepresentation of facts, doctrines, and opinions, *ad libitum*. 6. Phrenological facts are never opposed by anti-facts, but by an ipse-dixit; by assertions, jokes and quibbles. 7. Some as dull jokes and stupid pleasantries as ever were cracked upon the heads of our German doctors. Time and space do not allow a special notice of this article at present, but until some benevolent critic shall undertake to give it due castigation, to point out all its bad faith, blunders and pretensions, one phrase must be noticed as a specimen of the philosophic mind of the author (page 296, line 20 to 27).

“If it were really true that, &c. it is, in the first place, inconceivable that the discovery should have remained to be made in the beginning of the 19th century; and in the second place, still more inconceivable, that, after it was made, there should be any body who could pretend to doubt of its reality.” Admirable critic! profound philosopher! Adieu, then, all that has been brought to light since the year 1800, together with all that anybody doubts about! Nay, more, for if the critic fixes upon the opening of the present century as the æra at which he locks the gate of science, and throws the key into a fiery furnace, we will wall it round in 1700. Some other friend to the progress of truth will stifle it in 1600, and so on till the retrogradation of knowledge is complete. And then adieu Vesta, Juno, Pallas, and Ceres; potassium and sodium; hydrogen and oxygen; steam-engines and mule-jennies; the discoveries of Newton cannot be true, for *somebody* still doubts about them; and in fine, there is not either truth or knowledge upon earth, and none can henceforth ever be disclosed!

This article has drawn a reply from Mr. Combe, against whose work it was principally directed; and although this phrenologist has said more than is necessary to refute the flimsiness of the attack, he has by no means exposed all the weak points of his adversary, or held up the production to the contempt which it merits.

The efforts of the Edinburgh Reviewer, however, have been completely impotent to stop the spreading torrent of truth. On the contrary, they have assisted it so much, that we (phrenologists) hope he may never cease to write against us. About the time when the LXXXVIIIth No. of the Edinburgh Review appeared, Dr. Spurzheim visited Cambridge, and was received in that seat of exact learning with honors seldom bestowed before. By the influence of some of the members of that eminent body, the most distinguished for their characters and talents, permission was granted to deliver a course of lectures on phrenology, in the botanical lecture-room of the University; a favour never conferred on any who are not members of the establishment. The audience was most respectable, and increased as the course advanced; till, towards the close, it amounted to 130, among whom were 57, partly professors, partly tutors, and fellows of the different colleges. The attentions paid to Dr. Spurzheim, personally, were most gratifying; and the impression made, not merely by his method of dissecting the brain, but by his phrenological doctrines, was as complete a refutation of the lame and impotent conclusions of the Edinburgh Reviewer as candour and science could desire. Now the university of Cambridge will generally be held as high authority as the man who writes that our faculties, viz. the love of approbation, acquisitiveness, cau-

tiousness, &c., arise out of the constitution of human society, and not that human society is the result of human faculties (page 263, last lines); and who considers the ascending affections, as the love of children for parents, &c. to be as necessary and as natural instincts as the love of parents for their offspring (page 269.) (Note 4.)

From Cambridge Dr. Spurzheim proceeded to Bath and Bristol; and the managers of the literary institutions there have declared that since those establishments were opened, no lecturer had attracted so numerous a class. The London Institution, too, had a weekly lecture, attended by several hundreds of auditors; and the new mode of dissecting the brain was exhibited with entire success at St. Bartholemew's Hospital. Thus Dr. Spurzheim may deride the pert petulance of the ignorant.

But if the Edinburgh Review has not been able to prevent the public attention from being directed to phrenology, and convinced by truth, still less has it been able to arrest the accumulation of facts; and the XVth Number of the Phrenological Journal* (page 467), contains—what, in a certain slang dialect, would be called such a *plumper*, that nothing softer than the Reviewer's fact-proof cranium could resist it,—Mr. Deville's visit to the convict ship *England*, bound with 148 prisoners for New South Wales. This zealous practitioner, after examining the convicts, gave a memorandum of the inferred characters of each individual, and of the manner in which the propensities of each were likely to manifest themselves. The most desperate were accurately pointed out, and one man in particular, Robert Hughes, was noted as most dangerous, on account of his ferocity and dissimulation. A mutiny, at the head of which was this Hughes, was on the point of breaking out, and the conduct of every prisoner coincided most accurately with Mr. Deville's predictions. The records of the whole transaction are now officially in the Victualing Office, and the following is extracted from a letter of Mr. Thompson, surgeon to the ship, to whose care the convicts were committed:—

“ I have to thank you for your introduction to Deville and phrenology—Deville is right in every case but one, Thomas Jones; but this man can neither read nor write; and, being a sailor, he was induced to join the conspiracy to rise and seize the ship and carry her to South America, being informed by Hughes that he would then get his liberty. Observe how Deville has hit the real character of Hughes, and I will be grateful to Deville all my life, for his report

* A Trimestrial publication, as necessary to the lovers of this science as the Journal of the Royal Institution, Professor Jameson's or Dr. Brewster's Edinburgh Journals, &c. are to the friends of chemistry, natural philosophy, &c. This work at present is much superior to what it was in the beginning, and contains many very excellent dissertations on the metaphysics of phrenology, as well as a rich collection of undeniable facts.

enabled me to shut up in close custody the malecontents, and arrive here not a head minus, which, without the report, it is more than probable I could not have done. All the authorities here are become phrenologists."

Now the man who does not admit that to be a science which errs but once in 148 cases, must have little experience of what human science is. The visit to the convict ship *England* is the fair appendix to Dr. Gall's visit to the prisons of Germany; and here, at least, the practical use of phrenology cannot be denied. It is known that Mr. Deville has been applied to by some persons in the employment of government to examine another convict ship ready to sail for New South Wales; that he has complied with the request, and that the report of the surgeon, by which his prognostics will be either refuted or confirmed, is daily expected. (Note 5.)

The science being thus brought down to its present condition, and the phrenologist having closed his pleadings, the adverse party must now be introduced; at the same time, for the sake of brevity, the answers shall be given. Many of the objections are anatomical, and would fatigue the reader; many of them must be omitted, but the most prominent shall be preserved. The works of the authors, the *Edinburgh* and *Quarterly Reviews*, the *Phrenological Transactions and Journals*, the *Report of the French Institute*, and the answer to it, contain enough to satisfy the most curious.

To every objection that ever has been, or ever can be, brought against phrenology, one general answer might be given; and if we (phrenologists) were not very good sort of persons, we might dismiss our adversaries with one word: "Come to our schools and collections, and observe along with us, whether mental manifestations are, or are not, in constant proportion to cerebral development; whether a given shape of head is not always accompanied by a certain talent and a certain character. If this be not so, we are in error. If it be true, all that you can say upon this, that, or the other, cannot make it untrue; and our facts, the facts which we compel you to admit, cannot be destroyed by hypotheses or pre-conceptions. But we will still listen to you, in order to show to the world of what nature your objections are; and because we are so strong in honesty, that your words pass by us as the idle wind.

You do not venture to assert, say the anti-phrenologists, that so soft a substance as the brain can give its form to the skull; or to maintain that it is not the bone which imprints its configuration on the pulpy aggregate. You know, reply the phrenologists, that the cranium is formed *after* the brain; that its bones, at first cartilaginous and soft, follow, as they become hardened, the structure of the cerebral mass, assume its shapes, and very accurately represent its hills and hollows. Observation confirms this fact, and

you yourselves know many analogous to it. Are not the bones of adults often warped from their natural shape by the constant action of the muscles; and do not the bones of hydrocephalic skulls expand and recede according to the quantity of water contained in the head?

You know, say the anti-phrenologists, that the internal and the external plates of the bones of the skull are not parallel, consequently the impressions made upon the one are not always perceptible upon the other. Hence then, even admitting that the brain gives its form to the internal plate, you cannot judge of it externally; and all your inductions are false.—We do know that the plates are not always parallel, and that their deviation often amounts to one or two tenths of an inch. But the difference in heads amounts to one inch, sometimes to two inches; that is to say, to as many inches as the deviation from parallelism does to tenths of an inch. Now, when you prove that a tenth part is equal to the whole, we will admit your objection.

You, continue the opponents, produce the fibrous appearance in the white mass of the brain, by always scraping in the same direction with your dissecting-knife.—Had the dissecting-knife teeth, like a comb, there might be some plausibility in your remark; but, whatever be the process we employ,—maceration, ebullition, congelation,—the fibrous appearance is constantly the same. Now, a result obtained by so many different processes must be in nature, not in any particular method of proceeding.

But the great, the overwhelming objections under which, with Sir Everard Home* at our head, say, thirdly, the anti-phrenologists, we shall bury you and your science for ever, although you think that you can shake them to air like dew-drops from the lion's mane, are those derived from incidents which have happened to different parts of the brain; while the faculties attached to those parts have not been diminished or impaired. Innumerable cases are quoted of cerebral wounds without any injury to the mental powers, by surgeons in every age and country. In one of these a bullet was found upon the pineal gland, after many years innocuous residence there. A boy lost a piece of his brain as large as a pigeon's egg, but not a jot of his reason. Stones, halberds, pistol-balls, knives, stiletos, abscesses, cysts, steatomous tumours, excrescences, cavities, have been detected after death; while, in the living subject, no diminution of intellect had been perceived. Sometimes a fragment of the right, sometimes of the left hemisphere; at others a good lump of the cerebellum has

* Sir Everard Home is accused by phrenologists, 1st, Of not understanding their doctrines; 2dly, Of wilfully misrepresenting the little he does know about them; 3dly, Of attempting to appropriate to himself some of the discoveries of Drs. Gall and Spurzheim, to which he has not and could not have the slightest pretensions.

been carried away, and no harm done ; nay, the mental powers have been so tenacious in some individuals, that they have continued to keep their seat, even amid a general ossification of the cerebral mass, or its total solution in the waters of hydrocephalus. The authorities upon which these facts rest are formidable, for among them stand the names of Abernethy, Duvernay, Earle, J. Hunter, Ambrose Paré, Petit, Pringle, &c., with many others, *quos nunc describere longum est*.

If, say Drs. Gall and Spurzheim, and their associates, all these observations were as correct as their authors state them to be, not only phrenology would be subverted *ab imo fundo*, but it would be impossible to maintain that the brain performed any intellectual functions, or indeed any functions except that of terminating the columnar structure of man with a round nob, on which Quakers hang broad-brimmed hats. Were the mass, said to be fibrous, converted to bone, without a loss of any faculty—vital, animal, intellectual ; were it really liquid, and addled, as it then might be, and no thought or action weakened, this surely is the inevitable consequence. But the vague indefinite manner in which all these examples are produced, save the head and its contents from the imputation of being useless appendages, and give phrenology a chance of a little longer life than its opponents wish. In order to ascertain whether an injury done to any material organ is followed by the disease of any function, the direct method is to observe whether the function attached to that organ is diseased or not. Thus let locomotion be supposed to depend upon the soleus maximus ; to ascertain this, we should observe whether, when this muscle is injured, the power of locomotion be impaired or not. The same process should be followed with the brain. If an ounce or two of the organ of cautiousness be carried away, as in one case it seemed to have been, we should not examine whether the faculty of music, of eventuality, had been diminished or increased, but whether the poor patient were more or less cautious than he was before. If we confine our inquiry to faculties which do not belong to the part affected of the brain, we shall obtain as satisfactory answers as we should if we were to conclude that, because smell and taste were not directly impaired when the abductor oculi, or the constrictor oris, is cut across, the patient suffered no injury but pain ; or that, because he could still walk and hear, he could turn the globe of the eye outwards, or purse up his mouth as well as ever. But this, say the anti-phrenologists, is begging the question, and supposing proved the assertion which we deny ; viz., that the brain is a congeries of many organs. It is not begging the question, answer Drs. Gall and Spurzheim ; it is merely assuming, for a moment, the fact which we wish to demonstrate, in order the more readily to come to a conclusion ; for, if the diminution of the faculty does not ac-

company the injury done to the organ, we will cease to say that such is the cerebral seat of cautiousness, of music, &c.; and if, by the same mode, what we have asserted of each portion of the brain be disproved, we give up phrenology for ever. What we do maintain is, that our predecessors and opponents did not possess the due means of observing the fact which they have stated; for, instead of looking for the faculties which we attach to the injured parts above quoted, they endeavour to find there, not merely powers which do not belong to those parts, but powers which we do not allow to exist in man as simple fundamental faculties—perception, memory, judgment, imagination, &c. These, indeed, as understood by the doctors of the old school, may very well survive a partial lesion of the brain. We say, too, that those cases have not been adduced against us with fairness, and we give an example of this. Dr. Ferriar quotes the case of the Duc de Guise, mentioned by Ambrose Paré: “A lance entered *under* the right eye, and came out at the neck, between the ear and the vertebræ; a piece of the steel remained there.” So says Paré; and, in that direction the brain could hardly have been touched. But Dr. Ferriar says it entered *above* the eye. Besides Paré never says one word either about brain or faculty.

If the brain, say the phrenologists, be one organ, the organ of mind, then mind must be injured exactly in the same proportion as the brain is injured; that is to say, if one-tenth of the brain be destroyed, then one-tenth of each mental power—perception, memory, judgment, &c.; must be destroyed along with it. Now we request the old metaphysicians to prove this; while we most satisfactorily account for the loss of one of our acknowledged innate faculties, when all the rest remain entire, by admitting a plurality of organs. And as to the non-destruction of a faculty, even when its organ on one side of the head has totally disappeared, we explain it, as we do the continuance of the power of vision in a man who of two eyes has lost one. Every organ, every member of the human body is double, and has long been acknowledged to be so. The fact has been doubted, only since it became necessary to oppose phrenology.

The plurality of the organs is in one sweeping condemnation totally denied by the anti-phrenologists, while the assertors of the doctrine pretend to support it by many arguments. 1st, The analogy between the brain and the other portions of the nervous system declare that the former, like the latter, must be composed of parts, each of which has its separate functions. 2ndly, In taking a large view of the subject, and overlooking some partial anomalies, the brain is found to become more complicated in every class of animals, in proportion as that class stands higher in the scale of intellect. Thus, beginning with insects, fishes, proceeding upwards through birds to mammalia, through the

most sagacious quadrupeds to man, this viscus is augmented by the addition of new parts. Some animals, indeed, have one portion greater, others another, according to their natures; but the number increases, as do the faculties, till in the most intellectual of all they become the most numerous. Even in the individuals of the human species, proportionate differences are observable; and whoever studies the heads of Bacon and of an idiot, must become half a phrenologist. 3rdly, The cerebral development takes place in all animals exactly in the regions where the faculties for which he is the most distinguished reside. 4thly, The different parts of the brain grow not simultaneously, but one after another; the growth of each part is invariably accompanied by the development of its concomitant faculty; and both organ and faculty are developed according to the demands of nature, at the various periods of our existence. Thus, in children, the perceptive faculties gain strength before the reflective faculties, because we must collect knowledge before we can reason upon it. 5thly, Intense application does not fatigue all the faculties, but only that which is in action, and we repose it by changing the object of our study. When the organ of number has been over-exercised by calculation, the organ of tune may yet be quite fresh, and we may be as well disposed to hear or to make music, as if no part of the brain were weary. Thus it is that gentle descents and risings in a road, as they bring different sets of muscles successively into action, are more advantageous than a dead level. Thus, too, change of posture rests the body. 6thly, When, by the over-excitation of an organ or faculty, monomania is induced, a cure is sometimes performed by exciting the action of another organ or faculty, and thus procuring rest to the inflamed organ. 7thly, A faculty is injured whenever its organ is diseased, and the use of a faculty has been restored by restoring health to the organ. Topical applications to a part of the head have brought back the healthful action of the mental power attached to it. 8thly, The states of sleeping, waking, dreaming, and somnambulism can be satisfactorily explained only in the hypothesis of a plurality of organs. We regret that the space allotted to this article, already very long, prevents us from offering the phrenological theory of these interesting phenomena.

But the objections in which British readers are most likely to take a part, are those founded upon fatalism, materialism, and atheism. If, say the anti-phrenologists, you attach the powers of intellect, the feelings, the passions, to the shape and organization of the body, that shape and that organization are decrees of fate. Weak, finite beings, men are no longer masters of their thoughts and actions, but bow before the mass of matter that composes them, as the reed before the storm. If you assert that we think

and feel by means of material organs, then matter is our soul, and all the properties of that immortal essence are corruption, death, annihilation. If these be the laws of nature which you expound, then there may be no God, there is need of no God, and your system is as dreary and desolating as the worst that ever attempted to plunge mankind in cheerless scepticism, to root out hope and reason from our creed.

To all this, and to much more, phrenologists reply: Our doctrine does not in the least alter the questions of fatalism and materialism, but leaves them exactly where it found them. If you admit a Creator, you must admit him omnipotent; and, among the attributes of universal power, you must insert omniscience. That the Almighty reads the thoughts of our hearts before we form them, that he knows what every one of his creatures is before he has sent him into the world, is the inevitable consequence of omniscience. The spirit, the essence of all things, flow from his will; and, without it, nothing can be. Now, whether his pleasure be that good and evil, that the mingled nature of man should be inherent in human organization, or should exist independently of it, the fact of their existence is constant; the means alone are different. Whether it be by the fibres of his brain, or by his essential nature, that the created being becomes the perpetrator of harm, harm is not more or less his act—his lot. Whatever is is right. Whatever is is by the will of God. If the will of God be fate, every doctrine which admits a God endowed with will, as ruler of the universe, is fatalism; and divines and moralists are fatalists as we are. If, too, the influence of the Creator over human thoughts and actions be fatalism, it is fatalism, whether exercised by spirit or by matter.

But it never was in our minds, continue Drs. Gall and Spurzheim, to say that this influence resided in matter, or that any mental faculty was substantial. We have, indeed, discovered innate powers in man, and found the organs by means of which these innate powers are manifested. But we did not, as you allege, ever confound the faculty with the organ. The faculty belongs to the soul, the organ to the body, and until the soul and body be confounded, the faculty and its organ must remain distinct. The muscles, with the bony tubes which stretch them out, and which, in their turn, they move at command, are no more the will to move the faculty which causes motion, than is the organ of benevolence, benevolence. The string which vibrates in the harp, the hand which draws it out of the straight line, and lets it go again, are not the note of music which we hear; neither is the organ of tone, tone. In this we have advanced no more than many philosophers have done before us, who have considered the body as the instrument of the soul; and mind to depend on organization. Solomon, St. Paul, the Fathers of the Church, Heathen

Philosophers, Christian Moralists, all have attributed a material residence, an instrument to the soul. Some who called soul the power by which the body grew and was maintained, irritability, life, supposed it to be diffused in every limb and artery, in every atom which composed us. Some divided the soul, and allotted to its parts different regions, analogous to its particular functions in those parts; placing some of it in the thorax, some in the abdomen, some in one part of the head, some in another. Pythagoras, Plato, fixed it in the brain; the Stoics and Aristotle, in the heart; Erasistratus in the meninges; Herophilus in the great ventricles of the brain; Servetto in the aqueduct of Silvius; Auranti in the third ventricle; Van Helmont in the stomach; Descartes in the pineal gland; Schellhammer at the origin of the spinal marrow; Drelincourt in the cerebellum; Lancisi in the corpus callosum, or in the great commissure; Willis in the corpora striata; Vieussens in the centrum ovale; Ackerman in what he calls the *Sinneshügel*, or tubercles of the senses; Psorri in a very subtle, fragrant juice, which, according to him, is found in the brain; and we should not be surprised to hear one of these days, that some peripatetic had set it off full gallop on the *sella turcica*. All that is proved by this is, that we know nothing of the nature of the soul, or of its residence; while we see that every philosophy has attached it to some material organ. Yet none of these are accused of materialism; and why then should we, who have attempted no bolder change than merely to proclaim what are the innate faculties of man, and what the organs by means of which they act, be accused of saying that the soul is matter? We never said so. We no more say this, than do the anatomists, who teach that motion depends on the apparatus of nerves and muscles, say that motion is matter. In our whole doctrine there is not a tenet which alters the position either of fatalism, or of materialism; yet futile minds accuse us of wishing to establish both these heresies.

But, we might say to you anti-phrenologists, suppose that our physiology of the brain does lead to those conclusions, what will you say if our theory be true? What we show you are facts; what you oppose to us are opinions. And what do you know about fatalism and materialism? Who has revealed to you what they are? You scale the heavens too soon when you dare to speak of them, for your best knowledge of them ever must be ignorance. You would interpret the laws of omnipotence according to your own weakness, and make infinity finite; yet you are blind to what your eyes can teach you. Come with us, and see whether what we say be true; and then you must confess that what you once believed is all imagination and hypothesis. You will own that you never understood, that it is not given to you ever to understand, what fatalism means, or what is materialism,

any more than to know the nature of your own soul. These are questions not merely of human abstraction; they involve considerations still higher, and touch upon the essence of the Divinity. The most unfortunate objections for our antagonists that ever were started, are those of fatalism and materialism; and the day is near when all men shall say, "How could such absurdity ever have been spoken?"

A question may now be put to phrenologists, which, in a popular point of view, is the most trying of all. What is the use of your science, supposing it to be true? It may be pretty, it may be ingenious, and it is amusing enough, in a circle of bald heads, to pry into hidden dispositions, and hold an infallible key to men's minds. But *cui bono* all this, and have you attained no greater end from all your studies? Certainly, answer these strange folks the phrenologists, we have attained much greater ends, the greatest, perhaps, that ever have been attempted in anthropology; and, if we have not already worn out your patience, we will recount to you what we promise shall be the result of our discoveries.

In the first place, then, TRUTH. We hold it to be in absolute contradiction with the nature of things, that a truth can exist, the knowledge of which is not useful to mankind. The earth contains no poison, the air no pestilence, which Providence has not at the same time endowed with some principle which mankind will, some day or another, turn to use. All is not, indeed, discovered at once; but let us look at the most deleterious substances known in nature or in art, and see the murderous arsenic, how useful it is in hardening types, and thus ministering to a free press; in forming specula for reflecting telescopes; in making glass; in dyeing; in printing cotton stuffs; nay, in pharmacy, as a tonic. How many lives might a pound of opium not destroy; how many pangs may it not allay? Neither does any substance exist which can do no harm. If a patient will submit to the trial, he will find himself as effectually killed by a sufficient quantity of boiled chicken, as of corrosive sublimate; and the "*question à l'eau*" could be made as unpleasing as any other species of torture, and would still be so were that water Tokay. What we give you is truth; truth, with its bad and with its good, like all other human truths; but in which the useful portion far exceeds, not only the noxious, but even that which malevolence can turn to evil, or folly make ridiculous.

Secondly, The knowledge of individual character is of no mean interest in the life we lead, as it must give security to social intercourse, and make communication prompt and easy. Physiognomy has been thought of some advantage to this end; but how much more will not a science, which has fixed and certain principles, contribute to it. Physiognomy is but the expression which the countenance, and perhaps some other parts

of the body, derive from the habitual state of the mind and heart, from the predominant feelings and passions; but it goes no deeper. Many powers which we discover have no tongue for the physiognomist; neither can he lay down a body of doctrine by which he can communicate his acquired knowledge. With him all is tact, mere tact, fugitive and changeable as the fancies of men and women, and more vague than meteorology. But we proceed by rule and compass, armed with all that can repel fantastic feelings; we judge by principles which can be explained. Let any man read the works of our doctors, and those of Lavater; and he will see that the two modes cannot bear comparison. Neither did physiognomy ever pretend to tell what were the original propensities of a man, much less to indicate the simple fundamental faculties of our nature. If, then, some credit was given to this most empirical mode of pronouncing, how much more does not our system deserve to be approved and trusted, since we can, by surer precepts, teach profounder truths? It may be said, that phrenology may create repulsive feelings among men, by revealing hidden defects; but will it not reveal hidden virtues also? And unless the false and gloomy system be admitted, that vice is more general than virtue, phrenology must publish more good than evil in the human species. Besides, when some defect is seen, is there not seen in the same head (unless it be one of those unfortunate cases, so rare in the world,) the quality which corrects it? In a word, phrenology will paint men as they are, and that alone is important; but whether it brings to light more virtue or more vice, must depend, not upon it but upon mankind. Nay, more, human virtue is likely to be increased by it, for men will be convicted of their faults upon phrenological evidence, from which no self-love, no flattery, can protect them. They will be instructed, too, of the means which Providence has given them to balance those faults; and, joined to destructiveness, for instance, they may find benevolence, or justice, or religion, to stop their murderous hand. In some heads, it is said, no good is found—no weight to counterpoise a vicious propensity. It may be so; but independently of every system, of every hypothesis, Thurtell was a murderer.—The will of God be done!

Nothing that ever was devised by man has put in his hands so powerful an instrument to know himself, as that which we (phrenologists) have given him; for, if he believes in us, he cannot deny the evidence of his own organization. The first key to unlock the hearts of others is that which opens our own; and to know whether we judge our neighbour fairly or not, we should measure the quantity of our own feelings which we mix up in the judgment. But from this acquaintance with ourselves and others may result the greatest benefit that could accrue to social intercourse, mutual indulgence. When we recollect that each

has his own particular organization, as we have ours: that it is not easy to control the dispositions which nature has implanted thus in our minds; that we have defects as insupportable, perhaps, as any that we encounter, we shall be more disposed to bear with others' foibles, that they may pardon ours; and mutual necessity will make us tolerant. There are, indeed, those who have reproached our system with inspiring indulgence even for vice; and say, that by it it is unjust to punish the criminal, since he only obeys the impulse of organization. But we must here distinguish between feelings and actions: for the former no man can be taxed; for the latter all are accountable to society; and as to destiny, we have shown that to be among the impenetrable mysteries of Providence.

Another influence which phrenology, say its advocates, will have on individuals, is the mode of treating mania. The whole theory of insanity has hitherto been much too vague, and all its affections and appearances have been considered only as inflammatory and as chronic. Some practitioners, indeed, more happy than others, have struck out particular modes of treatment, which have been crowned with occasional success. But the knowledge of the innate faculties, and of their seat in the brain, must generalize the hygiene of mental derangement. In erotic mania, in the mania brought on by the excessive development or excitation of the organ and faculty of ambition, of acquisitiveness, of cautiousness, physicians will direct their practice immediately to the part affected and to its functions; and not, as is now too often the case, apply, as it were, a topic to the leg for a disease in the arm, and scrape away the tibia to extirpate a caries in the humerus.

A still higher function of phrenology, as it relates to mankind at large, not merely to the few unfortunates who labour under malady, is its empire over education. The vast error, that men are alike fitted for all professions, that all can turn their mental powers to the same account and profit, has done much injury to the education of individuals, and consequently to the general progress of the world. But our science (continue Drs. Gall and Spurzheim) shows that all men are not alike fitted for all purposes; that, in one, a receptiveness for musical, in another for mathematical instruction predominates; that some are endowed with the power of prompt perception, and others with that of abstruse induction; in short, that every walk of social life has its destined votaries. Now, it is to be hoped, that when parents have the authority of phrenology for the talents and disposition of their children, they will cultivate those which nature has made the most salient in their cranium, and not torment them with studies for which they have no sufficient organ. Should one of their boys, in defiance of birch-rods and ferulas, neglect his vo-

cabulary to carve his law, or cut out waggon-wheels with his penknife, let them consult one of us, and we will tell them that all the betula of Windsor forest will not make a scholar of him; we will show that, not being one of the ox-eyed, he can but ill remember words, but that having a fulness in the frontal bone, just above the spheno-temporal suture, he may become an expert mechanic, an engineer, a mill-wright, or a Watt; that it is in vain to thrust in through the gluteus maximus what cannot penetrate the head; and that flog him as they may, his *propria quæ maribus* will always be covered with chips and chisels. In the same manner we will teach them to oppose the bad propensities of youth, by withholding aliment from self-love, from obstinacy, from cruelty, and by cherishing benevolence, justice, piety; and correcting levity by gently stimulating the reflecting faculties. We can tell, too, why many a school-boy, who has carried away prizes and rewards, sinks into an ordinary adult; and why more than one dunce has burst out like a luminary in later years; for we can show the organs which make a brilliant infant and a dull man, and those which are of little use at Eton, but most essential to a statesman or a philosopher. Neither shall we allow ourselves to be imposed upon by any urchin's cunning, or mistake ill-will and idleness for inability. The marks by which we judge are registered by nature, indelible, immutable, and clear to every eye.

But individual education is a very small portion of the good which we aspire to teach—(these people really are mad; their ambition is unbounded!) We will educate nations; and nothing can prevent us from fulfilling this mission, but the destruction of the human race. We will tell the men of every country their faults and their vices, their virtues and their talents, and hold them up, as clearly as size and form can be held up, to the notice of mankind. None shall escape us. Already, not only Europeans,—English, French, Germans, Italians,—the most enlightened, the most refined of men, have we scrutinized, but Asiatics under every latitude, Africans thirsting on both sides of the Equator, Americans as wild as Africans, as civilized as Europeans. We have told truths to all, and pointed out the means of improvement. At this moment, indeed, they may not listen to us, but the day will come when they will advance but by us. To us is given to decide the great question of original national propensities, as of individual propensities, and to show how they may be expanded or repressed. We shall instruct rulers how to govern, and subjects how to submit, and strike the just balance—as various as the races and the regions of the earth—between the sovereign and the people; and the first time that we inspire oppressed reason to demand her rights, and to demand no more—that we teach men how much liberty they can bear, how much privation they must yet endure, we shall have our full reward. (Note 6.)

So much for the practical pretensions of our science. The reader must now hear our claims to speculative superiority. Dr. Spurzheim has said, and been most heartily abused for saying—and, if the science be false, most heartily deserves to be abused for saying,—that the whole philosophy of the mind must be entirely changed; that the study of man in this respect will become a new study, &c. In this dictum—most noble or most arrogant, according to events—we (phrenologists) concur, with the loudest cheers; and in this, do we say, lies the stupendous monument of our science. Since the earliest records of philosophy, sages have speculated on the heart, the mind, the passions, and the understanding. For more than three thousand years systems have flashed, and disappeared without leaving a trace. Some of these, indeed, were abundantly ingenious; but were defective in that which alone can make them lasting, truth. It would be curious to examine the hypotheses which have grown up, one after another, in the fertile soil of fancy, Arabian, Chinese, Persian, Egyptian, Greek, Roman, and modern European, and to see how specious and how futile all have been. Not one of them was founded on any thing but conjecture; and, until Gall appeared, it was not supposed that mental philosophy, that psychology, ever could have any other basis. But Gall proceeded entirely upon fact; and those who accuse his system as imaginative, will probably call the “*Farie Queene*” an historical poem, and “*Lear*” an algebraical tragedy. He stalked from brain to brain, from organ to organ, and trampled conjecture under foot. “*The man of skulls*”—aye, Mr. Edinburgh Reviewer, the *boy* of skulls—endowed in truth, with not less imagination than his predecessors, had yet more love of fact than they had; and this single faculty has placed him above them all. It is, indeed, most wonderful, that the catalogue of the innate faculties of man should have escaped the grey-haired philosophers of every age and climate, and that its first fold should have been opened to a child of nine years old, who in maturity unrolled it all, except a leaf or two, which he left to his followers. Such a discovery, had it been made by a man after so long concealment, and so many attempts to accomplish it, would have been wonderful; but let it never be forgotten that it was the work, and not the accidental work, of an infant.

We (phrenologists) do not say that Dr. Gall has invented the faculties which he attributes to man, or that he even discovered them all. Many of them had a place in ethical science before they were announced by him. Philosophers, the most remote from admitting the connection between the brain and the mind, from adopting innate differences of character, have yet allowed many of the powers which we have recognized, to be simple and fundamental. Thus Mr. D. Stewart, who attributes so much to habit, does not deny an inborn bias to self-esteem, to friendship,

nay to pugnacity, as in the case of sudden resentment; he admits, too, conscientiousness, under the much more philosophical name of the moral sense. Many more moralists have done the same, as Cudworth, Hutcheson, Reid, Brown, &c., but still they went on no foundation but conjecture. Neither had they the slightest notion of forming a body of doctrine like that which our masters teach. Others again have asserted, that all the disparity between man and man resulted from later circumstances, for nature had made the individuals of the species alike; and systems of education have been most erroneously founded on this opinion. The British philosopher who, in our days, stands the most remote from our doctrine in his philosophy of mind is Mr. D. Stewart; whose theory, on this very account, must be the first to become obsolete; and whose works—to the great impoverishment of English literature,—will be remembered only for the beauty of their style, and the benevolence of their philosophy. He who has come the nearest to it is the late Dr. Tho. Brown; and, strange to say, many traces of opinions like ours are to be found in some papers published since 1819, in the *Edinburgh Review*, and still more in others inserted about the same time in the *Quarterly Review*, insomuch, that of one of these, (Art. XII. of vol. 25,) it has been said, “The observations of the reviewer are so strictly phrenological, as almost to tempt me to believe that he is a phrenologist in disguise.” (See *Phren. Journal*, No. VIII., page 603, note.)

It has already been mentioned—to the great dismay of all sober-minded readers,—that we (phrenologists) had entirely rejected the hum-drum faculties of perception, memory, imagination; which mental philosophers have so long been discussing. It must now be added, that taste and judgment—this the reader will easily credit,—have been turned adrift along with the rest: that attention, association, are not simple fundamental powers, that passion is a resident, not in the heart, but in the brain; that pain and pleasure, joy and grief, are affections of the innate faculties, not faculties: that sympathy is the unison of one or more faculties in different persons, &c. It would be as long to detail the philosophical principles of phrenology, as to dissect all the brains of the *Royal College of Physicians*; it is indispensable, nevertheless, not to pass them by in utter silence.

No mode or action, no quality of mind, do we contend, can be considered as a simple fundamental faculty, if it has not an organ in the brain. Now perception, memory, imagination, with all the above enumerated, have no cerebral seat; nay, they can have no cerebral seat, because not one among them is ONE. Perception is of as many kinds as there are kinds of objects of which it can take cognizance. These kinds are determined by the intellectual faculties, which are found to exist in the brain and mind. Thus there is a perception of time, and a perception of place; a per-

ception of colour, of order, of number, of weight; and the day is forgotten when it was not known that a person who has a very lively perception of one of these, may be totally deprived of the perception of the others. It has always been allowed that a painter who estimates colours most accurately, may not estimate number, and there may be most profound algebraists without a feeling of melody. Seeing, then, that perception is thus necessarily divisible into many parts, one of the most extraordinary instances of the laziness of the human mind, which, when it falls into a rut, seems incapable for centuries of rising out of it, is, that perception should ever have been considered as a mental element. Some philosophers, indeed, have attempted to resolve the difficulty, by saying, that chance directs the first current of our perceptions, and that habit confirms it. But chance must then be busy with us at a very early moment; and habits must be contracted in our mother's womb. Every nurse at the Foundling Hospital knows this; and that differences of individual dispositions precede the possibility of habit. But even admitting habit, still the fact, that perception is as various as the kinds of things perceptible, stands as firmly as before: and perception is not, cannot be, a simple fundamental faculty. The same reasoning is good with regard to memory. Memories which are most active, most retentive on some subjects, on others are relaxed. One man remembers facts, who forgets dates; another recollects faces and not names; some never lose from their minds the places where they have been, yet have no power to recall a tune; therefore, memory is not a simple fundamental faculty. In the same manner, had Milton taken it into his fancy to imagine fluxions, it is probable that he never would have put a dot upon his; or his; neither would Newton have produced Adam, Eve, or Satan. Handel never could have been a Rubens; or Michael Angelo a Mozart. Imagination, the creative power of mind, then, is not one; and of these three faculties, which were the great battle-horses of all metaphysicians down to Gall, not one has an independent existence as a simple fundamental power of mind.

What, then, are perception, memory, and imagination, for surely they have an existence somewhere? Certainly every intellectual faculty has its perception, its memory, and its imagination; and these have complete and full existence as modes and qualities of every simple fundamental power of intellect. They are modes of action, and the explanation which follows will make their functions palpable.

Let a series of numbers, 1, 2, 3, 4, 5, be presented to the eye, the organ of that external sense which takes cognizance of all that is visible, and the first thing it does is to see the series of numbers which is thus communicated to the mind, and *perceived*

by it. For this operation no great effort of intellect is necessary, and it constitutes the first, the least complicated act of the faculty which receives the impression of number. Let these numbers be now withdrawn from the organ of sight; if any traces of them remain, those traces are not pictured upon the retina, but upon the mind; and some stronger effort is required to call them back after they have disappeared, than to perceive them when they stood before us. This is a second and higher operation of intellect than mere perception:—it is memory; and that memory is above perception in the mental scale is evident, for in idiots, in drivellers, in the lower animals, perception often remains vigorous when memory fades. Let the person who has seen these numbers be now requested to transpose them, to repeat them, not in the order 1, 2, 3, 4, 5, but in any other order; it is clear that, unless he remembers them, his attempt must be vain. But should he be able to recal them to his mind, he may, by a new effort, throw them into a different order, thus 4, 2, 5, 1, 3, or into any other order: he may diminish or add to them: he may subtract, divide, or multiply them, and produce an infinity of new combinations. In these operations he is compelled to spin from his own mind. Perception, indeed, collected the materials, and memory furnishes them anew out of her store-house; but all the shapes into which he throws them are the devices of his own understanding. The act which performs all this is imagination; and the tension of mind is greater in imagination than in memory.

From this, then, it follows, that the first degree of activity in the organ of number was to perceive the series of numbers; a second and a higher degree of activity, was to remember them; a third and a still higher, was to produce new forms with them. In the same manner let a painter's pallet be shown to one man, he will perceive the colours; let it be shewn to another, he will perceive and remember them; let it be put into the hands of a Titian, and the result will be a San Pietro Martire. One man may hear the notes of the gamut, another may remember tones and tunes; Weber will compose the Hunter's Chorus in the Freischütz. The activity of the faculty of colour, of tone, produces these differences; and so it is with every faculty of the mind. Phrenology, then, does not annihilate perception, memory, or imagination; it denies their existence as simple fundamental faculties, but it assigns them a place as attributes of every intellectual faculty. Every intellectual faculty perceives, every intellectual faculty remembers, every intellectual faculty imagines. No faculty can remember if it has not perceived; no faculty can imagine if it has not remembered: perception is, then, the basis of all the operations of every intellectual faculty.

It may be objected to this system, that memory and imagina-

tion are not in constant proportions in different minds; that one man who has a powerful recollection of events, of tones, of colours, cannot combine or unite them in such a manner as to imagine new productions; while another, endowed with the most vivid power of reproduction, has a relaxed and feeble recollection of his past perceptions; whereas, if the system just expounded were true, one degree of memory should always be accompanied by its corresponding portion of imagination.

In drawing conclusions upon these qualities of mind, the distinctions just made must henceforth be kept in view, viz., that there are as many kinds of memory, as many kinds of imagination, as there are perceptive faculties. Is it true that memory and imagination in these cases are so disproportionate in quantity as in quality? Does not this apparent error often arise from mistaking memory in one shape, for imagination in another? From confounding, for instance, the memory of words with the imagination of events; or the imagination of tone with the memory of colour? From not knowing that neither memory nor imagination is an element of the mind, but an attribute of many of its elements? Future observations must clear up this doubt; for all that have been made before the true nature of the attributes of mind was known, must be considered as equivocal.

Besides, supposing—continue the phrenologists—memory not to be always in the same proportion with imagination in the same faculty, viz., that one man has a strong memory and a weak imagination for numbers, while another has those attributes in reversed proportions in the same faculty; the fact, if ascertained, is easily accounted for by the re-action of every faculty upon its fellows. No power of mind can, for a single instant, act alone, much less determine an habitual state; and when the higher sentiments, as marvellousness, ideality, mirthfulness, or the reflective qualities, as comparison, causality, are very active, they may impart their stimulus to the memory of numbers, and raise it nearer to imagination than it would be if it were dully handed over to the propensities or the senses. Certain it is that, without memory, there is no imagination. Memory is the mine from which imagination takes the ores that fancy shapes and taste refines, to gild its airy castles. Had the good genius of the magic lamp not perceived, not remembered all the elements of which fairy artists fabricate their spells, Aladdin never could have built a palace for his bride.

Having despatched the good old-fashioned faculties of perception, memory and imagination, with as little ceremony as we should our grandmother's high-backed, patchwork arm-chair, we (phrenologists) proceed to the demolition of some other antiquated powers, and assert that, if they trust us, mankind have neither judgment nor taste. Judgment is no faculty; but every

faculty of intellect has its judgment. Hence it is correct and common to say such a man is a good judge of music, such another of painting, &c.; and this could not be so, had not the one the organs of time and tone, the other those of form and colour duly developed; and were they not moreover endowed, not merely with the power of perceiving, remembering, and imagining, but with another power different from them:—these are modes of quantity. The one now under consideration is a mode of quality, and entirely independent of the others. Before we can judge, indeed, we must perceive; and, if we wish to judge an object once perceived, but no longer present, we must be able to call it back to our minds; but perception alone is sufficient to afford the judgment matter for its exercise.

Beside these special judgments, there is another judgment useful in the affairs of life, constantly talked of under the plain, round name of common-sense; and another, the highest of all, metaphysical judgment. But these and every species of judgment are explicable in the same manner as the special judgments, and are modes of quality belonging to the faculties which preside over the various departments of mind. Thus, as the power of judging melody resides in the organ of tune, so does the power of judging the value of metaphysical speculations reside in the organs of comparison and causality, the highest and grandest of all the human faculties. But the metaphysical faculties would be of as little avail in judging melody, as the organ of tune in judging abstract ideas. Each faculty, then, which procures knowledge, has not only its perception, its memory, and its imagination, which are modes of quantity, but its judgment, which is a mode of quality.

This mode of quality assumes different names, according to the objects upon which it is exercised. In the common concerns of life it is called judgment; in literature, in the fine arts, it is called taste; but judgment and taste are, in fact, one and the same thing, only directed to different ends. What, indeed, is taste, but the power of judging a poem, a picture, a statue, any production of the fine arts, any beauty, any deformity of nature? This mode, called judgment when it pronounces on objects whose principal merit is their fitness, and taste when it considers their beauty, belongs to every intellectual faculty, from that which perceives an individual, to that which compares all objects, and inquires into first causes.

To keep this mode of action in its best condition, the equilibrium of all the faculties is indispensably necessary. The great sources of their derangement are the feelings, the propensities, and the sentiments, of Dr. Spurzheim's system. Our perceptions may be just, our reflective faculties may be sound and powerful, and thus far we may be organized for excellent judg-

ment in all its branches. But, if our propensities be strong, our decisions will be influenced by them, and the most preponderant will give its bias to the mind. So is it with the sentiments; and the best of human feelings may err from too much, as from too small, a development. To judge well, to have good taste, the elements of the mind must all be present, but so balanced that not one shall outweigh another, so mixed that not one of them prevails,—as the best sauce, says the Cuisinier Imperial, is that into which every good ingredient may enter, but where not one of them can be tasted separately. Let a man in whom combativeness is too large, be consulted on a trifling point of honour, he will counsel arms; let a poet of a similar organization write a tragedy, his verse will breathe pugnacity. Let this organ be deficient, both these men will be too tame; and, in either case, better organized heads will blame the judgment of the one and the taste of the other. If benevolence be too strong, it may produce ruin in common life, and mawkishness in literature; if it be too weak, it may give too much scope to the evil propensities in the one as in the other, and in both cases judgment and taste may be offended. It is now easy to understand how the same person may have excellent judgment and excellent taste in some points, and in others be totally deficient, as he may have local memory defective, and the memory of numbers very powerful.

But we (phrenologists) go still further; we annihilate association also as a primitive faculty, and call it merely the influence of the faculties upon each other. Sympathy, too, is the simultaneous action of the same one or more organs, similarly affected, in different persons. Pleasure, and pain, joy and sorrow, result from the gratification or the sufferings of any faculty. Passion is the over-excitement of a faculty, and when more than one is aroused, as is usually the case, the passion is more complicated. Habit results from the frequent exercise of any faculty, and is more the effect than the cause of strong mental power. Thus, for instance, if a man has not a strong faculty for music, he will be little impelled to practise the art, and will acquire no habit of execution. Should the natural impulse be strong, he will perform music often—music will become habitual to him. Then, indeed, the habit will re-act upon his natural talent, and make him an expert performer; but it is not the less true that the habit was acquired only through the strength of the primitive impulse. Labour as you may to give a person, in whom the organs of comparison and causality are weak, a habit of metaphysical induction, and you will labour in vain.

Man acts and thinks by virtue of the primitive faculties which Providence has implanted in his nature; man can act *but* by these; he can give himself no new power or faculty; within his own limits he is as much confined as the crustaceous animal that lives

within its shell, only his limits are larger. Such is the law of creation. But what distinguishes him is the number, the extent, the elevation of his faculties. Some species of brutes possess one mental power, others another, but none are conspicuously endowed with more than a few of these. In man, not only all that are scattered through the races of the earth are united, but other and higher faculties, peculiar to himself alone, are given him. On these philosophers have proudly bestowed the name of reason; but what is reason in their sense? Can it be anything but the use of those superior, those exclusive faculties, which God has given as the badge of the creature whom he formed in his own likeness? It may, indeed, be improved by practice, as may the faculty of number, form, or tune; but the faculties on which it depends are as much an original gift of Providence as the instinct which prompts the puppy-dog to seek its mother's teats, or the young kid to avoid the herbs that are poisonous. All reason is cultivated instinct. It was by instinct planted by the hand of God, and tutored by human culture, that Newton discovered gravitation and its laws. It was by instinct that Bacon thought; that Addison was witty. By the instinct of ideality, Shakspeare "exhausted worlds, and then imagined new;" by marvellousness he peopled them with elves, and spirits, and ghosts, and witches; by individuality, he enumerated all that Puck and Fairy relate (*Midsummer Night's Dream*, act ii., scene 1.); by melody and time, he threw the words which his instinct of language furnished, into the most melodious cadences; and the steam-engine, which now towers to the clouds, has its origin in instinct. Man is not less a bundle of instincts than were the fasces which were carried before the Roman Consuls a bundle of twigs.

These instincts then, for so do we peremptorily denominate the innate faculties of man, are the source of all that now exists in human society; and their primitive force, succeeded by education, marks all the differences between human beings. The most improved portions of mankind have successively been raised from station to station, by the unremitting action of cultivation. But, in every stage and condition, it is original force which elevates the individual above his age and country. It is this which gives him superiority and power over the minds of men. This is genius; and the greatest that ever lived is he in whom the greatest number of intellectual instincts has been the most completely developed, and the most duly balanced.

Such is a summary of the system by which we (phrenologists) pretend to explain all the phenomena of the human mind and character, and to overthrow all the metaphysical theories yet devised by philosophers. One of these neologists has communicated to us some observations of his own, which, though not in print, are here imparted to the reader. He says, that led by the na-

ture of his studies to examine, at various periods, the metaphysical systems with which philosophy has swarmed for ages, he could not find in them satisfactory explanations of the facts which he daily witnessed in real life. For many of the faculties which metaphysicians enumerated, he could see no foundation; and others which they did not even mention, he fully admitted as fundamental. He ransacked first one theory, then another, then combined them from the time of Thales the Milesian, who taught all Greece to call the soul the principle of life, down "to him that did but yesterday suspire;" and all he learned was, that he had learned, and could learn, nothing from them, because they knew nothing. This person, however, had been long engaged in meditating a work upon some points of the human character, and finding the doctrines of his predecessors so different from what his observations taught him, he remained at variance as well with the moderns as with the ancients. He had long since attended a course of lectures by Dr. Gall; but some things in the mental philosophy of this master were unsatisfactory; and though he admitted the truth of the general doctrine of the relation between brain and mind, he abandoned the study. Brought back again accidentally to reconsider it in the state to which Dr. Spurzheim has advanced it, the first thing he did was to examine its metaphysics, and these he found so conformable to the ideas which he himself had long held to be the most rational, that he gave it his full assent, not upon a comparison between cerebral and mental developement, but upon its fitness to elucidate the phenomena of human character. If, says he, the table of the simple fundamental faculties, as given by Dr. Spurzheim, be weighed merely by the same metaphysical principles as all preceding systems; if all considerations between brain and mind, if craniology, be utterly abstracted from it; if it be considered (like the systems of Hobbes, Mandeville, Paley, Stewart, Brown, &c. &c.) an *a priori* system, conjectural, hypothetical, imaginative, it will be found to explain a greater number of facts than ever have been explained since the days of Anaxagoras, the great ancestor of all moral philosophy, down to the Edinburgh Reviewer.

Let an example be given of this:—There is unfortunately one which has made much noise in the world, and which our adversaries have brought forward to overwhelm us, under the many weights of phrenological, moral, and religious perverseness. It is that of John Thurtell, executed for the murder of Weare. Our doctrine has been reproached with finding, in the head of this assassin, a large development of benevolence, and thus making him out to be a harmless, good-natured person, and not the atrocious, cool-blooded murderer who could brood for days and nights over iniquity.

Surely the persons who make such an objection as this must

have been scared, by their dread of phrenology, out of all they ever knew of human nature, if they cannot perceive that the same man does at one moment an act of kindness, and at another an act of cruelty; that he is at one moment just, at another unjust. What was Augustus, persecuting and proscribing, and Augustus emperor? What was Nero a stripling, and Nero when he saw the city blazing? What is every man whom we have ever known? Is there not a true, but common, cant, about the mingled nature of the human species, about the good and evil of our hearts, which shows the inordinate absurdity of such a remark, and might dispense us from all further answer? (Note 7.) But let us examine facts, and see, not from his head, but from his biography, what Thurtell was.

Thurtell, being applied to in behalf of a friend in distress, drew out of his pocket his last remaining half-sovereign, and said, "Give him the half of this: but no—he wants it more than I do: he is sick; give it him all." He once innocently caused a quarrel between two friends, and shed tears of tenderness over their reconciliation. His kindness to Hunt excited as much gratitude as Hunt was capable of feeling. His affection toward all his family was extreme, and his attachment to his friends inviolable. His general character, when lieutenant on board the *Adamant* in the Leith roads, was that of a dashing, thoughtless, good-hearted officer. Yet, from his early youth, he was irascible, and what was called a murderous shot; a very dare-devil, a kind of prize-fighter, a notorious liar, a dupe of all his gambling associates; and he became a predetermined, cold-blooded murderer. These are facts; and let us now put different systems to the test, by attempting to explain them. Unity of mind, its indivisibility into various faculties, feelings, and propensities, can do it nearly as well as the indivisibility of the solar ray can explain the prismatic spectrum and the rainbow. This system then needs not much examination, and recourse must be had to some which admit a plurality of faculties. But which of these must be preferred? One that is hypothetical, or one that is founded on fact? All are subject to the same objection, of admitting contradictory sentiments in man; and if phrenology falls by this objection, all the rest must fall; and so indeed must facts. Whatever system does not admit a sentiment, or a combination of sentiments, to account for Thurtell's irascibility, his benevolence, his pugnacity, his attachment, his lying, his firmness, his tenderness, his cruelty, is defective. Let those who have leisure examine whether phrenology does not effect this more completely than all the others put together, and better than any that could be fabricated by their means. In truth, no metaphysics but those of phrenology could account for the apparent contradictions in that man's mind; none which reject, as fundamental principles of human nature,

benevolence, combativeness, attachment, destructiveness, secretiveness, firmness, can explain the facts of his life and character. If his charitable, generous acts be not totally denied, how would unity of mind reconcile them with the murder he committed? But our (phrenologists) doctrine says, he had large benevolence, and this was sometimes very active; he had large combativeness, large destructiveness, and when circumstances roused these into action, they were the more imperious, because they were aided by a strong developement of all the inferior propensities, while the superior faculties were too weakly developed to counteract or counsel them. The cerebral organization of Thurtell, compared with his life, testifies as strongly in favour of phrenology as facts can do; and if the world had been told by any other tongue but that of our science, that he, or any other murderer, had often done kind actions, the thing would have appeared quite simple, quite in conformity with daily observations. But the subterfuges which men take to evade conviction, when they are resolved that they will not be convinced, are wonderful.

One often hears of contradictions in character; and, often too, it is said, that those contradictions are only apparent, because we have not the key of the character in which they seem to be. Now, the general key, which effaces all contradictions from every moral manifestation, is phrenology. Actions, as opposite as cruelty and benevolence, appear to us (phrenologists) as natural, as easily accounted for, as that a man should one day calculate by means of his organ of number, and the next day paint by means of his organ of colour.

Although, tried by this test, the metaphysics of phrenology pretend to greater validity than all other systems, yet it is not thus that we—its votaries—maintain it, but by the relation of cerebral developement to mental manifestations. It is upon facts confirming this relation that we proceed, and the number which we have collected exceeds all belief. The collection of Dr. Gall, that of Dr. Spurzheim, of Mr. Deville, whose zeal and activity in promoting the practical part of the science cannot be sufficiently commended; those of the Phrenological Societies of London, Edinburgh, and many other places, contain many thousands of facts which are incontrovertible. It is not in the power of any phrenologist to enregister all living examples, but we build our pretensions upon every age of the world, and call not only moderns, but ancients to our aid. As this is one of the most curious parts of our pretensions, it must be briefly noticed.

Every head which has been handed down to us from antiquity is in as exact conformity with our doctrine, as if we ourselves had moulded it for our own purposes. The bad Roman emperors, Caligula, Nero, Caracalla, have the regions where the inferior faculties reside very much developed; while the antago-

nist faculties are small. The Antonines have heads that would do honour to any man. Vitellius is a mass of sensuality, deprived of all elevation. The Roman gladiator most powerful in the basiliary region, has a narrow and contracted forehead, where little reason could reside. In Homer, the developement of ideality is immense, and still greater perhaps in the rapturous Pindar. In Demosthenes there is a fine show of the superior faculties, but the organ of language is not the most prominent, neither were the natural command and flow of words the characteristics of his eloquence. His desire of gain, too, is largely developed. The head of Socrates is such as Drs. Gall and Spurzheim would model to demonstrate the organ of marvellousness, and a mind of visions; and so is a head, more modern, that of Torquato Tasso. The head of Zeno is that of a profound and moral thinker, as he was. That of Seneca has much bad, but more good; so balanced that a struggle between them will be necessary, but the latter will generally prevail. The head of Cicero, larger on one side than on the other, has more language than Demosthenes, with large reflecting faculties—vanity, the desire of gain and of fame, and cautiousness great, with little hope and little courage. In short, the examples of antique statues in our favour are innumerable. Now, either these heads are genuine casts, or they are not. If casts, their perfect coincidence with respective characters most phrenologically proclaims, what all men indeed have long since known, that nature has acted in all ages by immutable laws. If they are not casts, but ideal heads, then the ancients had observed the fact, that a certain form of head regularly accompanied such a power of mind: and their sculptors, without accounting for it, registered it in their works.

But the heads of Venus and Jupiter necessarily are ideal. Now, the head of the Venus de Medici—supposed, indeed, to be a modern addition to the original mutilated statue—is, like that of many a belle, too small to contain much mind, but sufficient, perhaps, for the goddess of beauty. The front of Jove is exactly what we would give to the creator of the world—locality, space, immense; form, size, weight, colour, order, number, phenomena, very large; with prodigious reflecting faculties. One single faculty, indeed, is small, and that was the least necessary of all to the maker of the world—wit. The occupation of shaking the earth, the sun, moon, and stars out of chaos, certainly was not one which could excite the creator to crack jokes; yet it seems he could rally his consort—whom, by-the-by, her ox-eyes must have made insufferably verbose—when she read him one of her long curtain-lectures. The ancients were at least as good seers, as good observers, as the moderns, though they but ill accounted for the phenomena which they perceived.

It is with hosts of alleged facts that we (phrenologists) have taken the field; and the way to beat us out of it is evident: it is to bring a very small number of counter-facts to overthrow our fabric. A very small number indeed would be sufficient; for the arch which is built of many stones falls when but two or three are removed. This is the method which anti-phrenologists should long since have tried, instead of abuse,—of allowing themselves to become irritated, or endeavouring to out-face us by ridicule or anathema. Not scorn or irony, not force or tyranny, can smother truth in the nineteenth century; for even in the seventeenth, the prisons of the Inquisition, though they could silence Galileo, could not restore to the sun the supposed motion which this philosopher had destroyed. But we are men of good composition; and since so many persons are desirous of becoming our exterminators, and of sharing in the glory of dispelling error, we will put into their hands the only weapons by which they can hope to succeed; and instruct them in the marches and the countermarches by which they may the most vigorously assail us. To this end we must begin by telling them that smiles, sneers, contempt, fall from us, like drops of pelting rain from an armour of oiled silk, and the shafts of authority would lose their points upon our hardened corslets. We must be out-facted;—such a number of well-ascertained truths must be brought against us as, in all fair proportion to human certainty, may overbalance our observations; and these truths must rest upon such evidence as a jury of unbiassed experts would allow to be fair and admissible.

It is not every person who has studied, or who has leisure and disposition to study, the forms of heads and their coincidence with mind; and we do not think it presumptuous to request all such to hold their tongues. But let any man or woman of liberal education, endowed with average mental powers, purchase (for about five shillings) one of the casts on which the organs are marked, and let him thereon assiduously study the topography of the head, until he can lay his finger on the place of each organ, as surely as upon the islands of Sumatra or Borneo on the terrestrial sphere. Let him then divide the head by imaginary lines, as Dr. Spurzheim has done in his "*Phrenology in connexion with the study of Physiognomy*," into four regions; first, by a line drawn from the ear (the meatus auditorius externus) to the point where the frontal and the sagittal sutures unite,—into an anterior, the frontal, and a posterior, the occipital region; secondly, by another line crossing this, and drawn from the middle of the forehead to the point where the parietal and the occipital bones unite into an inferior or basilar, and a superior or sincipital region. Let him study the organs, and their import, which are situated in each of these districts, and know in which

of them the inferior propensities, the higher sentiments, the perceptive, the reflective faculties reside.* Let him, thus accoutred, sally forth to observation, and slyly cast his eye on all the heads he meets; not yet to examine their organs and faculties, but to reconnoitre the general shapes of heads, to ascertain whether there really is so much difference as we assert, and to obtain terms of comparison with regard to the developement of the various regions. When his tact has been exercised upon these general points, he may give a glance at the particular organs; but let him not be in a hurry to verify their relation to the character of the individual. He must begin with the larger organs,—with those which occupy the most room on the head, and consequently modify its shape the most—as cautiousness, for instance; and when he has fully learned to appreciate the size of these, he may proceed to the smaller organs, ending with those of which no less than five are situated in the ciliary ridge. When his eye is well exercised, and his tact thoroughly formed, he may begin to apply his knowledge. He must lay his friends and intimates—the persons with whose characters and talents he is the best acquainted—under contribution, and scan their foreheads with his eye, or, better still, lay his hand, widely extended, on their sinciput, embracing all the organs of that region in one grasp, and afterwards pass it down upon the occiput and the basiliary region. His friends, indeed, may not be very sincere upon all points of their characters, and many inaccuracies in the current ideas and current language of society will be embarrassing, but the observer must supply the deficiency; and, in the circle of his acquaintance, he will find many whose talents—as music, drawing, calculation, manual dexterity, &c.—or whose avarice, benevolence, cruelty, timidity, or courage, are too well defined to admit of denial. The examination of the heads of children, too, will do much to confirm or refute our doctrine; for parents avow many things of them which they would not say of themselves: and boys and girls tell tales of each other, which are often just keys to character. Visiting schools, then, if our

* The following is an improved method of studying the cerebral organization in general. Let those portions: of the animal feelings;—of the moral and religious sentiments;—and of the intellectual faculties, be compared with each other in the same person. To that effect, let a line be drawn from the anterior edge of constructiveness at the temples upwards to the temporal ridge, and continued along this ridge to the middle of the upper border of cautiousness, and then toward the mesial line of the head, between the organs of conscientiousness and love of approbation, and terminate between self-esteem and firmness. The portion of brain below and behind this line contains the organs of the animal feelings. If another line be drawn from the anterior edge of constructiveness in the direction of the upper borders of tune, causality and comparison, the cerebral portion between the two lines is the seat of the human sentiments, and the portion before the second line is the forehead, strictly speaking, and the residence of the intellectual faculties.

antagonists have it in their power, and prisons, if that be not repugnant, will give them boundless means to refute us; and they will be much assisted by having access to the collections of phrenological societies now largely diffused over the kingdom—those of Dr. Spurzheim, and of Mr. Deville, in London, and to Mr. O'Neil's, in Edinburgh,* &c. As they advance in knowledge, and become experienced, opportunities will multiply around them. Public meetings will rejoice them; private assemblies will gladden their hearts: in ball-rooms they will look for brains—in churches for devotion; in Westminster-hall for justice; in the navy and the army for courage; and if they find them not, we avow ourselves defeated. And if we are defeated, may our enemies, when they stand exulting over our crushed and prostrate organs, inherit from us the only boon we have to bequeath to them—a delight unknown to all but phrenologists—the raptures which a bald head—once the field of our glories, now of theirs—inspires! and curse the pernicious age of the Grand Monarch who buried craniology in periwigs!

It is fair, however, to tell our adversaries, that this precious knowledge is not to be acquired in a day; neither do we know of any science that can. To estimate the mere size of an organ of a head, may not be very difficult, though even that requires some practice; but to appreciate the entire development of the brain, in all its parts,—their proportions, their relation to each other, their combinations, requires time and exercise. The tact must be formed, and a minute knowledge of the shapes, general and particular, which compose such and such a character, and give this or that talent, must be acquired. They among us who have had the good fortune to see Dr. Spurzheim exercise his art in a numerous assembly of subjects, to witness the promptness as well as the certainty of his judgments, would be inclined to attribute it to supernatural agency. The writer of this article lately saw him in a school of fifty-eight boys, not one of whom he had ever beheld till that moment, run his eye rapidly over every head, touch some which appeared to possess eminently any defect or quality, and, in less than an hour, deliver his opinion upon the most remarkable subjects—for good or for bad, without committing a single mistake; for all his opinions coincided most accurately with the testimony of the masters, to whom the scholars were well known. The same trial was made, the same day, and with the same success, in a school of thirty-four girls, and gave miraculous evidence of the truth of our doctrine. A course of practical—if we may so call them, of clinical lectures, as a compliment to phrenological study, has long been desired, to form

* It is much to be desired that the persons who possess collections would add to them the heads of animals. Comparative phrenology is one of the most interesting and amusing branches of the science.

practical students: and Dr. Spurzheim now delivers such courses in London, for the further instruction of those who already possess the rudiments of the science. In this he analyzes known heads; compares their cerebral development with their mental manifestations; discusses the reasons why, according to their organizations, they evinced such a talent, such a tendency; and explains the combinations—for in them reside the pith and marrow of the science—the final consequence of which is the general assemblage of qualities called character. Such a course as this he never thought of in France, for the attempt would have been vain.

By all these helps, it is to be hoped that observations will be multiplied, that the science will be diffused, and its truth ascertained; and the public opinion of England is of much more value than the decision of learned bodies in any other country. Some say that phrenology should be handed over to one class of men, some to another; and physicians have been named as the most fit persons to determine the question. But we cannot see what requisites they possess more than other men, unless they are at the same time, what does not necessarily follow, good moral observers. The requisites for a practical phrenologist are, the power of appreciating size and form, accompanied by a talent for estimating moral phenomena. Now these medicine does not bestow; neither does the study of theology, of the *legum legumque*, or the study of anything but of themselves, bestow them: and all we request is, that phrenology may not be sentenced to annihilation by those who know nothing of the subject. This prayer, we trust, is not more extraordinary than those which mathematicians, astronomers, chemists, nay, which shoemakers, would proffer. (Note 8.)

We (phrenologists) are fully aware of the many motives which militate against us, and the adoption of our doctrines. Every thing new is, and ought to be, received with caution; but how much more caution than usual must be used before men who have long been in the habit of supposing the brain to be useless can admit that a spherical excrescence like the head is that which makes them think and feel. And all this, too, comes from a German: a man, who was obliged to learn English, presumes to teach Englishmen why and how they are the greatest nation on the globe. This is too much; and we are too wise, say some, to believe the Doctor. We have an un-take-in-able sagacity which will not be his dupe: we are too much upon our guard even to listen to him. Others, again, are ashamed to own their conviction; and very sensible men are known to be phrenologists, yet who are afraid to declare themselves openly, as long as ridicule dares point his waggish finger at their approbateness. One word to quiet the self-love of those who fear to commit their sa-

gacity in this trial. Sagacity does not consist either in doubting or in believing: as much, or as little of it may be shown in the one as in the other. Sagacity is proved by distinguishing truth from falsehood. Now, the first step to this is inquiry; and this step, unlike that which St. Denis made with his head in his hand—*c'est le premier pas qui coute*—is the easiest of all. This is the step which we (phrenologists) invite our foes to make, giving them up entirely to their own wisdom to make the last, assuring them that the true test of sagacity is truth.

Another calamity is, that phrenology has not been protected by the fashionables in science; and that its chief supporters have been among the lower ranks of the learned. We really do not understand what fashion is in science: neither do we conceive how truth is to be chosen as a *petite maitresse* chooses her gown, or a dandy his mustachoes. If persons of fashion will not believe in phrenology, so much the worse for them; phrenology can do without them. If fashion and respectability be the same thing however, the University of Cambridge may count for something, and save the blushes of many who now fear to be called quizzes by avowing their conviction. (Note 9.)

The transition from the old to the new mental doctrines certainly requires some force of mind; and the change is great from one metaphysical catalogue to the other. It reminds us of a revolution which, in the memory of many living, took place in the chemical sciences, when the pneumatic doctrines were first published. The Aristotelians, the Cartesians, the Stahlians of ancient days, were the many-coloured metaphysicians of former schools; fire, air, earth, water, were perception, memory, judgment, imagination; and phlogiston was the soul. Long had these elements continued to furnish out the material world, when a simple appeal to weight and measure put them all to flight. Long had hypothetic principles explained every phenomenon of mind, when experiment and observation proved their non-existence. The Stahlians, who long had reigned unmolested, shuddered when they heard of oxygen; and would rather that the ocean had swallowed them up, than have seen one drop of water decomposed. Athanors waxed dim, caput-mortuums looked aghast, as phlogiston took its nether flight, and hydrogen lorded it over metallic resurrections. Even so do Lockeites and Reidites now grow pale, when any one of the thirty-five innate faculties is named, and when the element of general memory bows before the powers which have rent its empire into fourteen sad dependencies. It is not that the names of Stahl and Locke are not venerable in silence, but, fact *versus* man, man must be nonsuited.

The reasons, too, why error so long prevailed in both these

sciences, are not without analogy to each other; and they who have examined both sides of both questions, and have finally been guided by experiment, find in them much subject of reflection upon the general march of the human mind. In the Stahlian doctrine, the increase of weight in metallic oxides was entirely overlooked, as was their loss of weight upon revivification; and phlogiston was a body endowed with positive levity, one which took away from the absolute weight of the substance with which it was combined, yet augmented its specific gravity. No account either was taken of the volatile products of an operation of those which, when not allowed to escape, burst every vessel which would confine them. Not much more than half a century ago, the art of perforating air-tight bolt heads was taught in chemical lectures; that is to say, the means of perpetuating ignorance; but the art of making impermeable lutes succeeded to it. All that was necessary to demonstrate the errors of Stahlism was, to weigh a metal and its oxide; to collect the aeriform products, and to examine them; to see that combustion could not take place without oxygen. These observations were made at length, and the science changed its whole hypothesis. All that was wanting to create phrenology, was, to know that all in metaphysics, was conjecture; that not a single fact existed to prove that perception, memory, imagination, were simple fundamental faculties, but many to prove that they were not; that the various systems which had succeeded each other explained nothing; and that all we knew about the brain was, how to slice it. What future progress and vicissitudes remain to each of these sciences we shall not determine, for they are beyond our speculations. Chemistry embraces the most subtle properties of nature; but is not the mind of man a universe, and are not its relations infinite? Far greater, in our opinions, are the dependencies of human feeling and reason, of passion and intellect, than those which elaborate matter, or guide the world through space.

The facts adduced in favour of our science rest principally on the authorities of its great founders, and it is but fair that the objections should be brought forward by men whose endowments bear some proportion to theirs; or else that they be supported by an adequate number of competent witnesses. Although the *Edinburgh Reviewer* could collect no information from the volumes of Dr. Gall, yet we (phrenologists) look upon them to be as extraordinary, in point of erudition, new facts, and new observations, as any that have honoured the present age; and Dr. Spurzheim has shewn, in all his writings, a mind far above the common level of observing moralists and philosophers. These two men have devoted their lives to the study, and it would be unjust to overturn their doctrines by the hasty conclusions of a

tyro. We do not, indeed, require so long and severe an apprenticeship in our opponents, as the masters of the science have undergone; but we exact a fair and honest competition. (Note 10.)

One claim we must make in favour of our science, and this distinguishes it from all the branches of physiology which have been cultivated to this day,—it has cost no blood: not a single act of cruelty has dishonoured it; while Messrs. Majendie, Flourens and others, have been torturing animals to teach their pupils but little, and repeating their tortures, to learn that little over and over again, our masters have not mutilated a single insect while alive, or shortened the existence of a single being, to have its brain a few days sooner under their scalpel. Yet phrenologists might feel as much interest in scraping away a piece of cautiousness, and then observing how dauntless the animal would become; or of excavating an organ of locality, to make him lose his way, as any physiological butcher could do: or they might be as curious as Vesalius was to take a peep into the living organs of some human subject. But they have abstained from every act of cruelty, and shewn that anatomy and physiology may receive some of its best additions without becoming inhuman.

“The bantling which but a few years since we ushered into the world,” say the phrenologists, “is now become a giant; and as well might you attempt to smother him as to entangle a lion in the gossamer, or drown him in the morning dew.” “Your giant,” say the anti-phrenologists, “is a butterfly: to-day he roams on gilded wing, to-morrow he will show his hideousness and be forgotten.”

Dixit the phrenologist. Dixit the anti-phrenologist. And now the Foreign Quarterly resumes its wonted *we*, to repeat our assurances to our readers, that not one word of what precedes has been said by us, but by the advocates of the contending parties. *Fiat justitia.*

NOTES.

Note 1, page 8.

The phrenological faculties of Dr. Gall's infantile genius were, Individuality, Eventuality, and Causality, in an eminent degree.

It has been remarked, as singular, that Dr. Gall should have been the first founder of this new science, whilst he could not recollect persons after dinner, though they had been near him at table, and since he could not find his way again to places where he had been before, or, in phrenological terms: since he had form and locality very small. Those who make that remark; can neither know the proceeding of Dr. Gall, nor understand the true meaning of the two phrenological denominations. Dr. Gall compared the size of individual cerebral portions with certain talents, or characters, eminent in any way; and he was not deficient in the power of perceiving size and its differences. The want of locality did not prevent him from making discoveries, any more than the want of seeing certain colours hinders any one to cultivate geometry or mathematics in general. Dr. Gall's deficiency in form explains why he constantly attached himself to isolated elevations and depressions on the surface of the heads, rather than to their general configuration, and left this rectification of phrenology to my exertions: he nevertheless, has the great merit of having discovered first, certain relations between cerebral development, and mental manifestations.

The few historical statements of phrenology made in this article, the nomenclature introduced by Dr. Gall, and our works, sufficiently prove that Dr. Gall and myself cannot be meant, when it is asserted that the phrenologists first founded a theory, and then looked out for facts to support it. I am sorry to see that friends and foes, the former by unskilful management, and the latter by unfair statements, have retarded the progress of phrenology. In any accredited science, those who teach it are taxed for their misconception or mismanagement, whilst the reality and merit of any new science, of phrenology for instance, are judged of, even by the ignorance or unskilfulness of its disciples. Phrenology has its foundation in experience, whatever the opinions of its friends or foes may be. Whatever is maintained in opposition to nature must be rejected, and every one of its teachers, master or disciple, is, and can be, only answerable for his opinions.

Note 2. p. 11.

Some opponents of phrenology among the medical profession have a strong tendency to ascribe to others, the merit of our anatomical discoveries. Dr. Gordon, in his examination of our claims as anatomists, in 1816, said (p. 99) that Reil is the original discoverer of our ideas; that we have borrowed them from his writings; and (p. 182) that Reil has been defrauded. Dr. Gordon thought it sufficient to make such statements, and to refer to Reil's archives of physiology for the years 1809 and 1812.—A professor of anatomy and physiology in his lectures before the College of Surgeons in London in the spring of 1829, thought it right to renew Dr. Gordon's opinion, and to give his assent to it. I must therefore, repeat to the public the same answer which I gave to Dr. Gordon in 1817, in my Examination of the Objections made in Great Britain against the doctrines of Drs. Gall and Spurzheim.

“Why have we not acknowledged that we owe our anatomical information of the brain, to the writings of Reil? The reason is simple: because it is not the case.” (I may add: it could not be, for his writings did not exist.) “The proof of this assertion is equally simple, I have only to state the history of our investigation.”

“While at Vienna, we spoke of the great leading points of our anatomical demonstrations; viz. of the aggregation of various cerebral parts, and their connexion with the medulla oblongata; of the proportion of the grey and white substance; of the diverging and converging fibres; and of unfolding the brain.

“In the year 1805, the 6th of March, we left Vienna for Berlin, where we repeated our anatomical demonstrations, in the presence of the medical professors and numerous auditors. Outlines of our anatomical and physiological propositions were published during that spring, by Professor Bischoff. From Berlin we went to Potsdam, then to Leipsig, where Dr. Knoblauch published an account of our doctrines of the brain. Then the usual demonstrations and lectures were delivered in Dresden, where Mr. Bloede published outlines of our anatomical and physiological views. From Dresden, we went to Hallé, where Professors Reil and Loder, and numerous gentlemen of the profession, honoured us with their presence at the public lectures and demonstrations. With Loder we repeated several times the anatomical demonstrations; and once we dissected with Reil, a brain, quietly in his own room. He was so much pleased with our demonstrations, that he gave to Dr. Gall some drawings with which he was formerly occupied *de structura nervorum et cerebelli*. Thus I beg to observe, that in the summer of 1805, we demonstrated to Reil the same leading points in the anatomy of the brain which we still maintain. We then continued to lecture and to demonstrate the brain, that very same year, in Weimar, Jena, Goettingen, Brownschweig, Hamburgh, Kiel, and Copenhagen. In the year 1806, anatomical demonstrations were made in Bremen, Munster in Westphalia, Amsterdam, Leyden, Frankfort upon the Main, Heidelberg, Manheim, Stuttgart, and Fribourgh in Brisgaw. In the year 1807 we went to Marbourgh, Würtzbourgh, Munie, Augsbourgh, Ulm, Zurich, Bern, Bale, and in the autumn of the same year, to Paris, where we dissected the brain, first in the presence of Cuvier, Fourcroy, Geoffroi de St. Hilaire, Dumeril, Dr. Demangeon and others, and successively before many learned societies. Meanwhile, numerous publications had appeared in Germany. Dr. Demangeon who had attended the lectures in Hamborough, published in Paris, 1806, his *Physiologie Intellectuelle*, and mentioned our anatomical views.

“In March, 1808, we delivered our memoir to the French Institute. The Commissioners declare at the beginning of their Report, that they have hesitated a moment whether they should examine our paper, because there is a rule ‘de ne point émettre avis sur les ouvrages déjà soumis au grand tribunal du public par la voie de l’impression et l’on pourrait croire que la doctrine anatomique de M. Gall a reçu, par l’enseignement oral que le professeur en a fait dans les principales villes de l’Europe, et par les nombreux extraits que ses disciples en ont repandus, une publicité à peu près équivalente à celle d’une impression authentique.’ They however, add, that Gall had not given his sanction to any one of the publications, and that this circumstance was one of the motives which induced them to examine our memoir.

“The report is printed, even translated, and inserted in the Edinburgh Medical and Surgical Journal, for January 1809. We published our Memoir with observations on the report in 1809. After this, Reil published in his Archives, views essentially the same as ours, of the aggregation of cerebral parts, of diverging and converging fibres, and of the possibility of separating the convolutions in the middle line. He does not state that he was the first who has conceived such general ideas, nor does he mention us as the inventors. He does not, and could not say that we have learnt them from him; he merely describes and represents them in engravings. As we had been in almost every town, and at all universities in Germany, our countrymen knew how to estimate the proceedings

of Reil, and it is only the great publicity of our demonstrations that can excuse Reil for not mentioning them.

“It is true, Reil has chosen other names; he calls our apparatus of formation, Hirnschenkel system, and our apparatus of union, Balken system, our diverging bundles are his Stabkrans. We speak simply of fibres, he of various convexities, obtuse and acute angles of the fibres, of laminæ, fossæ, and radii of the white substance; of wings, mountains, lobules, teeth; of a comb, and of similar mechanical denominations, which may appear interesting to a mechanical dissector who is attentive to every little cul-de-sac, and declares the anatomy of the brain unnecessary to physiological and pathological views. (Dr. Gordon had said so.) We think that there would be no end of such mechanical details in comparative anatomy, if, for instance, in the gradation of animals every new additional part in the cerebellum is to be named, who will learn all the names? and of what use will such a study be? We therefore point out the structure of each part, well aware, however, that each part is modified in the individuals of different species, nay in the different individuals of the same species.”

Professor Bischoff, in the preface of his Exposition of Dr. Gall's doctrine, reports Reil's own words, after we had dissected the brain to him in 1805. ‘I have seen in the anatomical demonstrations of the brain, made by Gall, more than I thought that a man could discover in his whole life.’ This short account is sufficient to prove, that there is no occasion whatever for us to apologize with respect to the publications of Reil. On the contrary, might we not rather complain of several recent authors who, in their publications, speak of our views without any mention of the source whence they were derived, or of the individuals who first struck them out, or reduced them to certainty by direct proofs. The influence our labours have had on the study of the nervous system, is incontestable. To be convinced of this, it is enough to examine the state of knowledge in regard to the anatomy, physiology, and pathology of the brain and spinal nerves, when we began to develope our ideas on these matters, whether it was by teaching orally, by dissecting publicly, or by means of our writings. M. de Blainville is one of the few, who, placing truth above selfishness, and looking for mere personal merit, declared, (in his report on Dr. Foville's researches on the anatomy of the brain, read to the Academy of Natural Sciences, the 23rd of June, 1828,) that Gall and myself have given to the researches of the nervous system and brain, an impulse and direction altogether new;—that this new direction has diverted anatomists from the beaten track to which they had attached themselves before our labours; and that if we had done nothing but this, and were all the points of our anatomy to be successfully contested and completely refuted, there would still remain to us, the honour of having discovered a new impulse, and consequently to us must be referred as to its source, all that may be valuable in future labours on that subject.

As, however, *our* anatomical discoveries are often quoted under the name Gall alone, it becomes necessary to allot to each of us the portion he deserves. It is universally known, that Dr. Gall has the great merit of having first begun our phrenological inquiries. The medal published in Paris after his death, and dedicated, *au createur delu physiologie du cerveau* indicates, the merit due to him alone. He had pointed out many relations which exist between various talents and characters of man, and instinct of animals, and certain cerebral parts, before I was so happy as to become acquainted with him. But though he is the first founder of the physiological basis of phrenology, no one can deprive me of that honour and merit which I deserve in our common labours and in the progress of phrenology. I settled my anatomical account with Dr. Gall, in an appendix to my French Essay Philosophique, Paris, 1820, and in the preface of my English work on the anatomy of the brain, London, 1826. Dr. Gall has never contradicted my statements; and in the last volume of his work, *Sur les Fonctions du Cerveau*, p. 490, he said, “Qu'il me soit permis de relever, une tendance singuliere que manifestent beaucoup de personnes d'attribuer nos découvertes à d'autres par exemple à Reil; et M. Spurzheim a deja dans plusieurs endroits,

revendiqué NOTRE propriété." The following is a summary of my relation with Gall. In the year 1800, I first attended a private course of lectures, which he had repeated from time to time, during four preceding years. He then spoke of the brain as the organ of the mind;—of the necessity of considering the brain as divided into different organs;—of the possibility of determining the special organs, by the development of individual parts of the brain, exhibited in the external configuration of the head. He admitted organs of particular memories, and of several feelings, but he had not yet commenced any anatomical investigation of the brain. Hitherto he had recourse to physiognomical means alone, to discover the physiology of the brain. But physiology without anatomy is imperfect: Dr. Gall felt this particularly in observing a poor woman with hydrocephalus, who was weakly, but as active and intelligent as other women of her class. He concluded, as Tulpius had done long before, from a similar case, that the structure of the brain must be different from what it is commonly believed to be. The woman died at the age of fifty-four years. Four pounds of water were found in her head, but the brain was not destroyed nor dissolved.

As Dr. Gall's time was greatly occupied by his medical duties, he employed a medical student, Mr. Niclas, to dissect for him. The investigations, however, were conducted from works published on the brain, and with mere mechanical views, as mentioned in the preface, p. xvi. of our large work on the *anatomie et physiologie du système nerveux en général et du cerveau en particulier*.

From the moment in which I got acquainted with Dr. Gall's physiological doctrine of the brain I have never lost sight of it. My medical school studies being at an end, in 1804 I joined Dr. Gall, and undertook the prosecution of the anatomical department, especially. Dr. Gall then knew the decussation of the pyramids, he also spoke of their passage through the pons varoli, and eleven layers of longitudinal and transverse fibres in the pons, of the continuation of the optic nerves to the anterior pair of the corpora quadrigemina, of the diverging bundles at the outside of the crura cerebri in the dissection, in which Vieussens, Monro, Vicq d'Azyr, and Reil (*Gren's Journal*, 1795, I.) had followed them, the first in scraping, the others in slicing the brain. He also showed, like Vicq d'Azyr, the continuation of the anterior commissure through the corpora striata, and mentioned the unfolding of the brain in hydrocephalus. The idea, however, which he had conceived of the brain in that state, was incorrect, in as much as he considered the hemispheres as resulting from a membrane folded together, and fancied that the crura cerebri expanded there, and were then folded by juxtaposition of the convolutions. This erroneous idea may be found recorded in all expositions which various individuals have published of Dr. Gall's lectures, and was not corrected previously to the presentation of our Memoir to the French Institute, in the year 1808. Till then the true structure of the convolutions and their connexion with the rest of the cerebral mass had never been described.

When I began to dissect the brain, I found the spirit in which the structure of this organ had been examined, too mechanical, and endeavoured to discover a structure of the brain in harmony with its functions. I succeeded in observing the law of the continual and successive additions of the cerebral fibres;—their division into two principal portions which are in communication with the rest of the nervous system;—their divergent directions towards the convolutions;—the difference of the diverging and converging or uniting fibres;—the true connection of the convolutions with the rest of the cerebral mass, and their structure, which permits every convolution to be unfolded, as happens in hydrocephalus internus, whilst the cerebral substance at the bottom of the convolutions, viz. the mass where the diverging and converging fibres cross each other, is pushed by the water, between the two layers of which every convolution is composed. In our public as well as private demonstrations of the brain, I always made the dissections, and Dr. Gall explained them to the auditors.

Since our conjoined publication, I have extended our notions of the communication of the nerves and cerebral parts with each other, and collected them in a separate section, in my English work on the anatomy of the brain. During the

last three years, I have been occupied with showing the regularity of the cerebral portions, and with specifying the individual organs and *their boundaries*. This additional discovery was desirable for phrenology. It is also a means to prove that individual parts are wanting in various idiots, and in the brain of the Ourang Outang, which, however, has the greatest analogy with the human brain. I presented these ideas in a paper accompanied with drawings, to the Royal Society of London. The council of this learned body permitted them to be read, but did not think the paper worthy of being published in their transactions. My ideas, however, are new, no where demonstrated in books, and will be, I am sure, appreciated by phrenologists, as the completion of the phrenological anatomy of the brain. Dr. Gall died without knowing the regularity of the convolutions and boundaries of the cerebral organs.

Note 3, p. 25.

It is curious to hear some opponents object to phrenology because I admit a greater number of organs than Dr. Gall, and differ from him in various points. Is chemistry to be rejected, or is it less true, because the chemical knowledge of Sir H. Davy was more extensive than that of Lavoisier, or because this latter did not discover whatever may be known in chemical science in future? Dr. Gall being the first founder of phrenology, remains immortal. The success of his labours, too, was immense. He discovered the situation of twenty-six phrenological organs, I say twenty-six instead of twenty-seven, because his organ of verbal memory and that of language are to be considered as one. But his talent and the sphere of its operations had their limits, and since our separation in 1813, Dr. Gall has neither made a new discovery in phrenology, nor a step towards its improvement.

The spirit in which he from the beginning conducted his researches into the moral and intellectual nature of man, is expressed in the publication of the first chapter of a large important but unfinished work entitled, *Philosophisch medicinische Untersuchungen ueber Natur und Kunst im gesundem und kranken Zustande des Menschen*. Wien 1791.

The first printed notice of his inquiries concerning the head, appeared in a familiar letter written by Dr. Gall to Baron Retzer, and inserted in the German periodical journal, *Doutscher Mercur*, in Dec. 1798. The objects of his private lectures in Vienna from 1796 to 1802, are published by Dr. Frieriep and Dr. Walther. Further, the whole of the physiological doctrines as exposed by Dr. Bischoff and Mr. Bloede in 1805, are Dr. Gall's exclusive property; but every new addition from that period up to 1813, belongs to us in common, because we pursued our inquiries together.

My special rectifications of phrenology, and new physiological discoveries, begin with our separation from each other in 1813. They concern particularly the discovery of eight new organs, and the analysis of the special powers of the mind, whilst Dr. Gall mostly confined himself to the comparison of talents, characters, and certain modes of acting, with individual cerebral portions. He admitted in every power of the mind the same modes of action, for instance, perception, memory, judgment, and imagination, whilst I classify the mental powers into orders, genera and species, and examine the common and special modes of acting of the different faculties. Further Dr. Gall ascribed to the senses the notions which the mind acquires of existence, and of the physical qualities of the external objects, whilst I think those operations of the mind to be dependent on cerebral organs. I therefore speak of immediate and mediate functions of the external senses; in the former the mind takes cognizance by the assistance of the senses alone; in the latter it is assisted, besides the senses, by cerebral organs. In general my philosophical views in phrenology differ widely from those of Dr. Gall.—The moral and religious considerations of phrenology, too, as they are taught in Great Britain, are conceptions of mine. Dr. Gall never endeavoured to point out the standard of natural morality.—In the natural language I discovered several principles in addition to that found by Dr. Gall: that the move-

ments of the head, body, and extremities, are modified by the seat of the organs in action. Moreover in the practical part of phrenology, and in examining the development of the special organs, I began to pay more attention to the breadth of the organs than Dr. Gall was accustomed to do, and directed phrenologists to attend to the individual regions of the head, in reference to the three lobes of the brain, and to the three regions of the animal propensities, the human sentiments and intellectual faculties, rather than to the protuberances and depressions to which Dr. Gall attached himself almost exclusively. In short the comparison of Dr. Gall's works with my publications on phrenology, on its philosophical principles, on education, insanity and other matters, will best shew how much I have contributed to extend and improve phrenology, and to forward its study.

Note 4, p. 27.

No one acquainted with the Edinburgh Review, will doubt that it was the greatest desire of the late editor and his party, to upset phrenology *per fas et nefas*. In Dr. Gordon's celebrated attack upon the new doctrines in the 49th number, even our anatomical discoveries were treated with unsparing expressions. In No. 88, of the Review, Mr. Jeffrey himself tried his wits and powers to deliver the public from all the phrenological absurdities. Though he had candour to avow that he is not learned in anatomy, he hoped, however, to deprive phrenology of its pretensions. His lucubrations, it is true, produced a temporary effect, but his ignorance in phrenology, and his sophistical proceeding, were sure to turn at last against the literary delinquent himself. In a note to the 89th number, Mr. Jeffrey stated that "if we find at the end of a few more years that the science is still known by name among persons of sense, we may think it our duty to look once more into its pretensions, and give ourselves another chance of conversion." I give Mr. Jeffrey up to his modified feeling of duty, and rely on the truth of phrenology.

But as far as the Edinburgh Review is concerned, in reference to our anatomical discoveries, and the basis of our phrenological principles, there is an immense change from No. 49 to 94. In the latter, there is an article on the nervous system, where special functions are ascribed to individual nerves; where it is admitted that "in the nervous system alone, we can trace a gradual progress in the provision for the subordination of one (animal) to another, and of all to man; and are enabled to associate every faculty which gives superiority, with some addition to the nervous mass, even from the smallest indications of sensation and will, up to the highest degree of sensibility, judgment, and expression. The brain is observed progressively to be improved in its structure, and with reference to the spinal marrow and nerves, augmented in volume more and more, until we reach the human brain, each addition being marked by some addition to, or amplification of, the powers of the animal—until in man we behold it possessing some parts of which animals are destitute, and wanting none which theirs possess." (p. 443.)—Is this not eminently phrenological?

"Even within our own time (says the Edinburgh Reviewer, No. 94.) although many great anatomists had devoted themselves almost exclusively to describing the brain, this organ used to be demonstrated by the greater number of teachers, in a manner which, however invariable, was assuredly not particularly useful. It was so mechanically cut down upon, indeed, as to constitute a sort of exhibition connected with nothing. The teacher and the pupil were equally dissatisfied with the performance, and the former probably the most. The latter soon gave up the painful attempt to draw any kind of deductions from what he witnessed, and disposed of the difficulty as he best could, when he had to render an account of what he had seen. Up to this day, our memory is pained by the recollection of the barbarous names, and regular sections of what was then the dullest part of anatomical study, which, although often repeated, left no trace but of its obscurity or its absurdity. Here an oval space of a white colour, and there a line of grey, or curve of red were displayed, here a cineritious, there a medullary

mass, here a portion white without, and grey within, there a portion white within, and grey without; here a gland pituitary, there a gland like grains of sand; here a ventricle, there a cul-de-sac, with endless fibres, and lines, and globules, and simple marks with appellations no less fanciful than devoid of meaning." (p. 447.) Is this not quite the language which Dr. Gall and myself used in dissecting the brain to our classes? Why then are our names never mentioned in the article, since we have introduced a new and better method of dissecting the brain? at all events this article is a powerful pleading of the phrenological principles, and the Edinburgh Review is an evident proof that truth must prevail.

Note 5. p. 28.

Since the time when this article was published in the Foreign Quarterly, I have delivered many courses of phrenology to numerous and most respectable classes; for instance, in the beginning of 1828, three in Edinburgh; in the spring of the same year, two in Glasgow; and, in 1829, at Derby, Nottingham, Sheffield, Wakefield, Leeds, Manchester, Liverpool, and several other places. Mr. George Combe, too, lectured on Phrenology in Dublin, during last April, with the greatest success. The phrenological collections in London, Edinburgh, and at various other places, have largely increased. In short, phrenology is propagated with unabated zeal, and numerous converts are made in favour of it. The London Encyclopedia, under the article Craniology, referred to that of phrenology, on condition that the pretended science should not have "evaporated before that time." In the 33d part, however, when the turn of phrenology came, a favourable article appeared. The great change which meanwhile took place in the Edinburgh Review itself, is already mentioned in Note 4.

Note 6. p. 38.

Phrenology, in establishing the knowledge of man, must become the basis, not only of moral philosophy, education, and legislation, but also of the science styled political economy. It will teach those who constantly speak of the march of intellect, that intellect is only one part of the human mind; that knowing to read and to write is not the first basis of common welfare; that masters alone cannot give talents, nor precepts produce morality. It will exercise a great influence on the welfare of nations, in indicating clearly the difference between natural and arbitrary nobility, and in forming the relations between individuals to each other in general, and between those who govern and those who are governed in particular. Further, it will dispose governments who take interest in the happiness of their subjects, to think of means of making them not only rich, but also healthy, virtuous, and wise: and should they not succeed to produce such eminent results, a great merit will be due to them for preserving individual families and their nation at large from degeneracy. The laws of the hereditary descent in the physical, moral, and intellectual constitution of man, will offer the most important considerations to their study and reflection, and those laws can be understood by phrenology alone.

Note 7. p. 48.

Phrenology has been objected to, because criminals have been described as possessing at the same time certain organs of the animal feelings and of human sentiments large. But does this apparent contradiction in organization not coincide with a contradiction in character, not only among criminals but also in many other persons? First, if criminals possessed only the organs of the animal propensities large, and were deprived of those of the human sentiments, could they be declared guilty? Hence the legislator and judge, in inflicting pains and even capital punishment, suppose counter motives against criminal propensities. Now, those counter motives, as well as the brutal propensities,

depend on cerebral organs, and the only reasonable thing which can be said on this point is, that criminals are guilty, and their criminality great, in proportion to their human sentiments and intellect with which they are endowed. The object of phrenology is only to show such states, which in reality are not rare. The ancients had Nemesis as a divinity of vengeance; and, since the Christian era, there have been criminals who performed religious ceremonies, and said prayers, in hopes that they might be successful in executing their heinous plans, and who, after fulfilling their evil deeds, gave thanks to some superior beings. Why should it be impossible to find in such individuals the organs of veneration and marvellousness large, as well as some of the animal propensities? Whilst lecturing for the second time at Manchester, in October 1829, several gentlemen, among them one of the first magistrates, went with me through the prison. Amongst various criminals whom we examined, a female, condemned to fourteen years transportation, was presented to us. Her organ of acquisitiveness was large, but those of cautiousness and conscientiousness were small. At the same time I perceived the organs of veneration and marvellousness large, directed the attention of the gentlemen who were with me to this contradiction of dispositions, and manifested the wish to be informed about her devotional conduct. We then learned that her behaviour in the chapel is exemplary, and that on the preceding Sunday she had been rewarded for it by the chaplain with a prayer book. Do not conquerors and invaders sing *Te Deum* for having immolated thousands of innocent victims? Do we not observe in daily life, that individuals are pious and charitable at one time, preach even sermons, and write moral and religious treatises, but who at another time indulge in sensuality and debauchery, and degrade themselves to the level of the brute creation? Mr. Greg, in his answer to Mr. Stone's pamphlet on Burke and Hare, pointedly says, "Every observer of human nature, in its ever varying phases, must have been surprised and confounded by the inconsistent and anomalous qualities which present themselves in the same character, sometimes simultaneously, sometimes in the order of succession. We could point out many who, calm and placid on all other occasions, become fiery and ferocious the instant that gunpowder word phrenology is mentioned." Pascal, and other divines, have considered it as one of many other superiorities of Christianity, to represent man as a mixture of good and evil. Did not the great apostle Paul himself complain of two laws, one in his members, and the other in his spirit, confessing that he saw and felt the better and did the worse? Phrenology alone furnishes the best natural explanation of this opposition in the animal and human feelings of the same individual. Further, phrenology alone explains why only a few are geniuses either in virtue or talent, whilst some others are characterized by mere brutal tendencies;—why some excel in certain dispositions, but are middling in others, and almost defective in still others;—finally, why the great bulk of mankind are followers of their leaders, and apparently the work of occasional circumstances, but middling in all their proceedings.

Note 8, p. 54.

Medical men are frequently called upon to decide about the reality of phrenology. This, however, is a great mistake, since it is positive that, before our time the medical profession was quite ignorant of the structure and functions of the brain, in its state of health and disease. Medical men, therefore, before they study phrenology, have no more right to judge of its reality than any other man or woman who never attended to it. He who can perceive differences in size and forms, and compare coincidences of cerebral development, with mental dispositions, and who takes the trouble of examining nature, he alone is entitled to form and give an opinion concerning the pretensions of phrenology. There have been many medical men who, though ignorant of the new science and its foundation, wished to keep up the craft which surrounds their profession, and who

with great self-complacency declared phrenology to be nonsense. Their motives seem to have been of two kinds: as long as the public opinion was against phrenology those with predominant secretiveness and acquisitiveness thought it the most proper to go with the tide. In proportion as the public opinion turns in favour of phrenology, these opponents become silent. Others with predominant organs of self-esteem and firmness, and smaller conscientiousness, think it necessary to maintain till the end of their days that which they have once said, viz.; phrenology to be nonsense and quackery. Nature will take charge of them, and send younger brains, open to conviction, truth, and new discoveries. I confine myself to only one remark more. Medical men who neglect the study of phrenology, and think it below their dignity and wisdom, have to choose between self-esteem and ignorance, or modesty and knowledge.

Note 9, p. 55.

“The votaries of phrenology are said to be third-rate men—persons without scientific or philosophical reputation. They are not entitled to *challenge* the regard of those who have higher studies to occupy their attention.” The assertion that no men of note have embraced phrenology, is not supported by fact. The great success with which I have hitherto lectured in London, Cambridge, Bath, Bristol, Edinburgh, Glasgow, Manchester, Liverpool, and many other places; the respectable classes which never decreased in number, but always increased as the course went on, so that my last lecture was every where the most numerously attended, is for me a certain proof that phrenology excites the interest of enlightened minds, whenever it is fairly presented. I, however, am not willing to occupy the public with the personal merit of phrenologists, but it may be interesting to understand the talents which our opponents display, the profundity of their knowledge, the consistency of their judgment, the fairness of their proceedings, the sincerity of their motives, and their eminence in every respect. It may be noticed as a general though singular remark, that many of those who belong to the pretended liberal party, and who speak a great deal of the march of intellect, are the most inveterate enemies of phrenology, though this science will do more for the welfare of mankind than all other means of improvement together.—The probable cause of this class of opponents is, that their literary gospel, the Edinburgh Review, without knowing phrenology, had declared against it. Now leaders of any kind do not wish to appear to be in the wrong. Predominant self-esteem, firmness, and love of approbation dispose the owner of such powers to look every where for the first place; and the same feelings, if not guided by conscientiousness, prevent him from changing his former decisions, or at least, from avowing such a change of mind. I pardon the adversaries among the liberal party, because they do not know what they do, and turn myself in particular, to the Critical Reviewers and anonymous writers of the public press, who repeatedly announced phrenology to be entirely upset. Mr. George Combe, in his answer to Mr. Stone’s contrived observations on the heads of Burke and Hare, pointedly remarked, that “the very fact of repeating the same declaration year after year, since 1815, when Dr. Gordon’s celebrated attack on phrenology appeared in the 49th number of the Edinburgh Review, seems never to have struck the critics as demonstrating its falsity and absurdity. If phrenology was refuted by Dr. Gordon, why did they laud Dr. Roget for demolishing it?—If Dr. Roget succeeded, why did they praise Dr. Barclay so extravagantly for subverting what was already overturned?—If Dr. Barclay was a fatal enemy, why did they extol Mr. Jeffrey to the skies as the prince of all anti-phrenologists?—If Jeffrey left no shred of the science sticking to another, why did they sound a loud acclaim to Sir William Hamilton for his repeated victories over its scattered members? and if Sir William’s brows were decorated with well-earned laurels on account of his magnanimous achievements, why do they now cling to Mr. Stone, as if no other champion had tilted with success against phrenology? The only inference that

can reasonably be drawn is, that those who uttered those eulogiums, entertained a great yet childish prejudice against phrenology;—that they dreaded its ultimate triumph, as implying a censure on their own conduct towards its founders—but that, even while they condemned it, they were conscious of being ignorant both of its nature and its evidence, and were beset by that inward misgiving, that secret uneasiness, which ever haunts those who oppose truth on the strength of prejudice alone. It was this state of feeling which caused them to hail with deep interest, every shadow of an argument, and every phantom of a fact, by which they might justify to their own minds the doubtful conduct which they had pursued.”

The great critics of the Edinburgh and Quarterly Reviews, deserve a particular notice. They, of course, must think themselves of the first-rate men—persons of the greatest scientific and philosophical reputation, and therefore assume the mighty *we* of sovereignty. The conscientious feelings of the former Editor of the Edinburgh Review must be mortified to see that his successor, in No. 94, has acknowledged the basis of phrenological principles, though he did not mention that name, whilst the Quarterly continues to assail phrenology, probably to cover his shuffling conduct: but the readers should mind their being deceived.

In No. 77, in alluding to Dr. Granville's remarks on the supposed skull of Charlemagne at Aix-la-Chapelle, the Quarterly Reviewer says, “We have a higher opinion of Dr. Granville's sagacity, than to suppose him capable of being deluded by so gross a piece of quackery, as craniology—for that is the proper name. Let him leave that, by all means, to the young gentlemen of Edinburgh, who pretend to believe so strongly in the infallibility of their patron Spurzheim, as a good catholic does in that of the pope, each equally contrary to common sense and human reason. While on this subject, we will tell those northern bumhunters a little anecdote of their oracle which we know to be true.

“On visiting the studio of a celebrated sculptor in London, his attention was drawn to a bust with remarkable depth of skull, from the forehead to the occiput. ‘What a noble head,’ he exclaimed, ‘is that, full seven inches, what superior powers of mind must he be endowed with who possesses such a head as is here represented!’ ‘Why, yes,’ says the blunt artist, ‘he certainly was a very extraordinary man; that is the bust of my early friend and first patron, John Horn Tooke.’ ‘Aye,’ answers the craniologist, ‘you see there is something after all in our science, notwithstanding the scoffs of many of your countrymen.’ ‘Certainly,’ says the sculptor, ‘but here is another bust, with a greater depth, and a still more capacious forehead.’ ‘Bless me,’ exclaims the craniologist, taking out his rule, ‘eight inches! Who can this be? This, I am sure, must belong to some extraordinary and well known character.’ ‘Why, yes,’ says the sculptor, ‘he is pretty well known, it is the head of Lord Pomfret.’”

Now my simple answer is, that this little anecdote, which the Reviewer knew to be true, has never occurred, and never could occur with me, since I never measure skulls or heads by inches, nor do I ever use language in correspondence with such a fallacious proceeding. The whole story, in reference to me, is an unfounded assertion, and “he who uses such weapons, will find that they must necessarily recoil upon himself, and fatally pierce his own reputation, both for sense and veracity.”

The simple report of this contrived story, proves the Reviewer's peculiar veracity, let us now see a proof of his sense and perspicacity. In No. 81, of the Quarterly, art. Gooch on insanity, p. 176, in a note we find—“The following anatomical facts, selected from Wenzel's celebrated work, *de penitiori structura cerebri hominis et brutorum*, shew that up to the 7th year of life, very great changes are going on in the structure of the brain, and demand, therefore, the utmost attention not to interrupt them by improper or over excitement, just that degree of exercise should be given to the brain at this period, as is necessary to its health, and the

best is oral instruction exemplified by objects which strike the senses. The dimensions of the brain proper, are as follows :

LENGTH.	Inches.	BREADTH.	Inches.
At the 3rd mth. after conception -	$1\frac{3}{12}$	- - - -	$1\frac{1}{12}$
At birth - - - -	$4\frac{1}{8}$	- - - -	$3\frac{2}{8}$ to $4\frac{1}{2}$
At the 7th year - - -	6 or 7	- - - -	5 to 6
At the 80th year - - -	6 or 7	- - - -	5 to 6

“ It appears therefore, says the Reviewer, that the brain proper, increases rather more in length and breadth during the six months immediately preceding birth, than during the first seven years after birth, that those dimensions arrive at their maximum at the age of seven, and they suffer no change during the whole of after life. The weight of the whole brain arrives, most commonly, at its maximum at the age of three years, and remains without diminution the whole of after life.”

The latter conclusions are heresies in phrenology, and I beg the reader to mind that the great literary judges did not perceive the fallacious proceeding of Wenzel to compare different individuals in order to make out the size of the brain at birth, at seven years, and at eighty years. I have seen in children of seven, even of three years, larger brains and foreheads (the residence of intellect) than in some adults who opposed phrenology, but does this prove that the adults had already the same size of brain at their age of seven years, and that the brains of children seven years old do not increase in after life? Whoever will observe the same individual will arrive at results very different from Wenzel's statements and the Reviewer's conclusions. Critics, however, of so little sense of comparison and discrimination dare to decry a science of which they know nothing, and which they never wish to study. Fiat justitia.

Note 10, p. 57.

Whilst writing my notes to this article, I asked myself several times, whether it be necessary to speak of an opponent who is a mere mouthpiece of an illiberal party, and who conducts the inquiry and discussion with uncommon effrontery, particularly since his erroneous proceeding, his fallacious argumentation, his evident misrepresentations and misquotations have been clearly shewn by Mr. George Combe, in the Phrenological Journal, and by an acute writer, in a series of articles in the London Medical and Surgical Journal. Mr. Stone has been chastised in a manner which must deprive him for ever of scientific reputation. I refer to those refutations every impartial reader who wishes to know the arguments on both sides, before he forms a decisive opinion. I shall make only a few remarks which, however, will be sufficient to indicate the spirit in which Mr. Stone published his lucubrations and committed his “ literary delinquencies.”

He begins his evidences with stating that Dr. Gall and myself claim the merit of being the discoverers of several propositions, the first of which is “ that the brain is a congeries of so many distinct parts, each of which is the organ of some innate special faculty.”

Now this statement is evidently a mere invention of Mr. Stone. Neither Gall nor myself have ever said that we claim to be the discoverers of the idea that the brain is a congeries of organs. This very proposition is developed with details in our joined works, as well as in those which every one of us published separately. Our works evidently contain more historical quotations than Mr. Stone's pamphlet. We were particularly anxious to collect the opinions of various ancient and modern writers, who believed in the plurality of mental powers and their special bodily conditions, since we are aware of the natural tendency of opponents, first to reject a new doctrine as long as they can; but if they can no longer resist its reality and force, then to ascribe its discovery to some predecessor:—The reader, however, will feel the difference between admitting any

general idea, and proving its details, hence between believing in the plurality of mental powers and bodily conditions, and specifying the powers, and demonstrating their organs in the brain. The latter is exclusively our merit.

The second proposition which, as Mr. Stone told his readers, we claim is "that the power of manifesting each faculty, is always proportionate to the size and activity of the organ or part of the brain with which it is supposed to be in immediate connection." The argumentation of Mr. Stone, in examining this proposition is particularly fallacious. I confine myself to repeat our real opinions. We admit that in the ordinary and healthy state in the same brain, the larger organs show greater tendencies and energy than smaller ones, but the reader is reminded not to believe in the Edinburgh Review, or any other opponent, who says that the phrenologists measure the dispositions of the mind in proportion to the size of the cerebral organs. All works on phrenology deny this to be possible. In all my works there is a separate chapter on the absolute size, and I always conclude that it is not possible, even in individuals of the same kind, to measure their faculties according to the absolute size." But to show how shamefully the public has been deceived, let us hear only what the Edinburgh Reviewer, who boasted of a "conscientious discharge of duty," No. 49, p. 229, told his readers, p. 249:—"Gall and Spurzheim, in affirming that the vigour of intellect is always proportionate to the size of the head, seem to have been desirous how far their effrontery might be carried." I may answer: not as far as that of the Reviewer goes. His conscientiousness is *sui generis*, and the clearness of his understanding too. We place the intellect in the forehead, and the critic confounds the forehead with the whole head!

Mr. Stone particularly insists on phrenology not being supported by facts. He finds only twenty-eight observations in the publications of the Edinburgh phrenologists. These in return, (*Phrenol. Journal*, No. 19, p. 468, call Mr. Stone's assertion "a flagrant absurdity.") It is really puerile to speak of only twenty-eight observations in support of phrenology, whilst the phrenological collections in Great Britain contain many hundreds of well-authenticated facts. Further, shall all the observations which Dr. Gall sedulously made for above fifty years; shall my exertions since thirty years, and all the labours of our disciples be outweighed by the authority and *ipse dixit* of Mr. Stone?

Mr. Stone's "Evidences against Phrenology" had died and were forgotten when he published his "Observations on the phrenological development of Hare and Burke, and other atrocious murderers." The opponents of phrenology, with great eagerness laid hold on these pretended phrenological observations, and extolled them to the skies. When I first read Mr. Stone's pamphlet, I found his proceeding quite anti-phrenological, since he measures by decimals, as if phrenology were a mathematical science;—admits in the size of the organs, length without breadth;—denies the boundaries of the organs to be known;—compares one individual with another, and proceeds in opposition to the phrenological principles, as taught and applied by true phrenologists; and I thought, with the *Edinburgh Phrenol. Journal*, No. 19, p. 559, that these inaccurate observations were "obviously published for the purpose of opposition, and ought to be called anti-phrenological." With respect to Mr. Stone's report of the cerebral development of Hare, Burke, and other atrocious murderers, I suspended my opinion till I could appeal to my only authority in phrenology, Nature. Till then, I could not think that Mr. Stone could publish a barefaced falsehood, in telling his readers that, in comparing the organs of the animal propensities with those of the human feelings in Hare and Burke, the organs of the moral and religious sentiments were not smaller, and those of the animal propensities not larger, absolutely and relatively, than in individuals of high moral and intellectual character. But since I am in possession of exact copies, from nature, of the heads of Hare and Burke, procured by an eminent artist, Mr. Joseph, I cannot help believing in Mr. Stone's *moral or intellectual* incapacity of instructing the public about phrenology. In my collection, among fifty busts and forty skulls (these

partly real, partly copies in plaster) of criminals, there are not six with so low cerebral organization as Hare and Burke.—When, beside these evident misrepresentations, I also read Mr. Stone's words: "the skull of this murderer (Pepe) which has been repeatedly inspected, exhibits a remarkable deficiency of the pretended organ of destructiveness," whilst the same skull, during my visit in Edinburgh, in 1823, was put by Dr. Graham, into my hands, without telling me a word of its history, but with the request to give my opinion of the skull; I at once found the organs of combativeness and destructiveness very large; and when I find Mr. Stone's "Evidences against Phrenology" to be evidently "literary delinquencies," I must be allowed to refuse all his authority in any decision about cerebral development, and any phrenological truth. His high-sounding propositions must dwindle into absolute insignificance; and I cannot conclude better, than in repeating Mr. George Combe's expressions: (See his answer to Mr. Stone's observations) that "no opponent is more admirably qualified than Mr. Stone, to bring into contempt the cause of opposition; nor a series of criticisms better adapted than the encomiums bestowed on Mr. Stone, to render the press ridiculous, in the eyes of reflecting and enlightened men."

THE END.

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Fig. 1.



Hydrocephalus. Idiotic child

Fig. 2.



Hydrocephalus - adult & intelligent

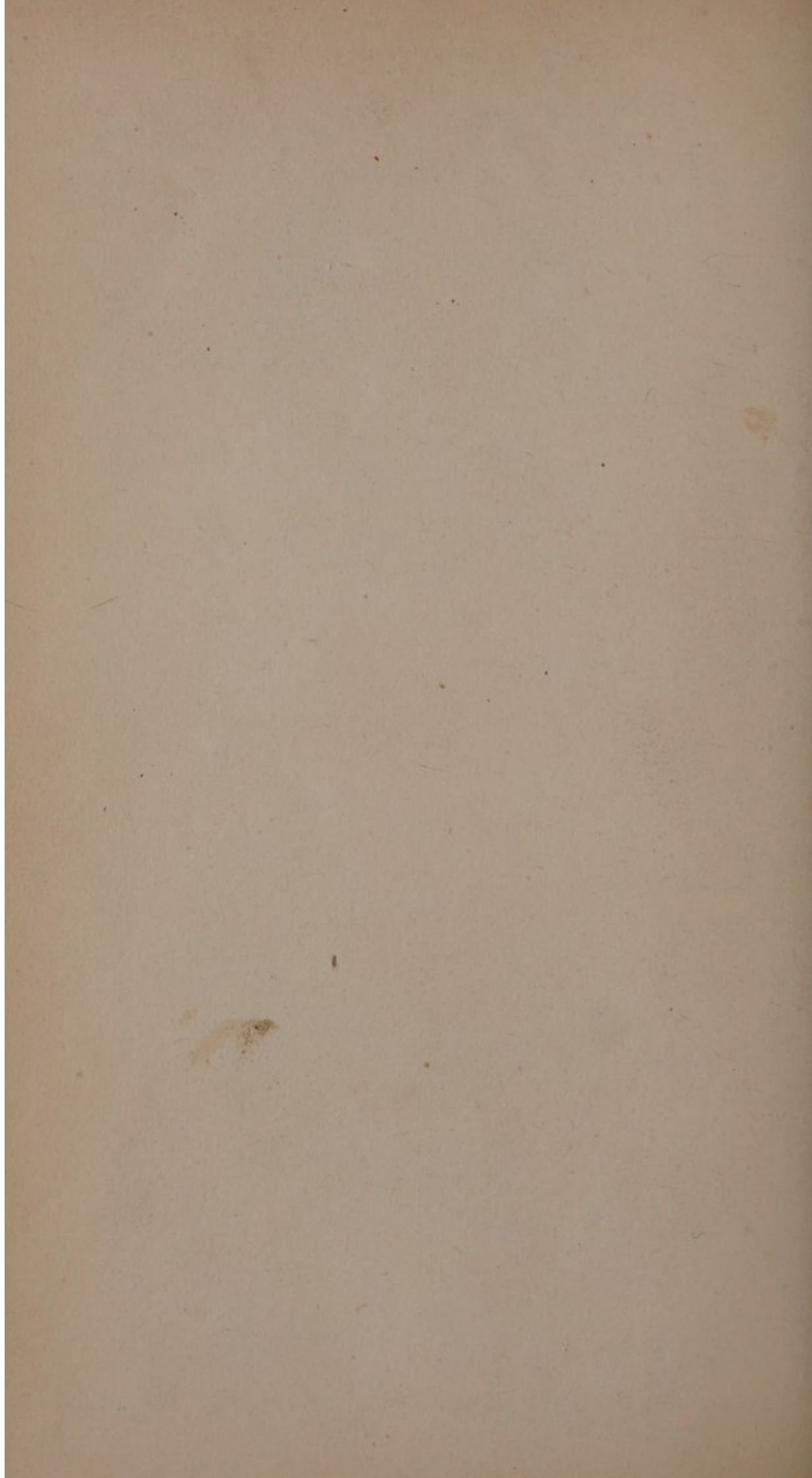
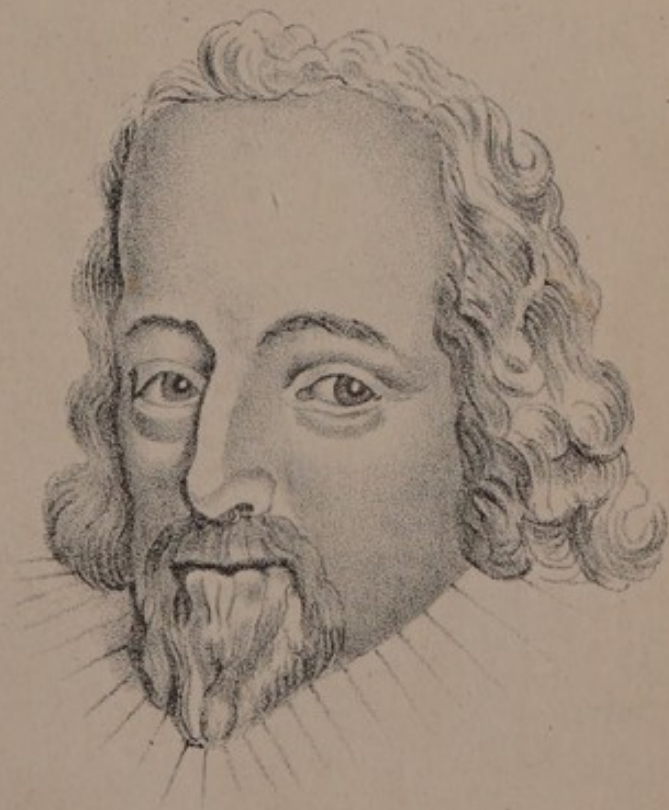


Fig. 1



Idiot. 25 years old

Fig. 2.



Lord Bacon

1 count 2

Fig 1.



amblyopia — large

Fig 2.



amblyopia — feeble

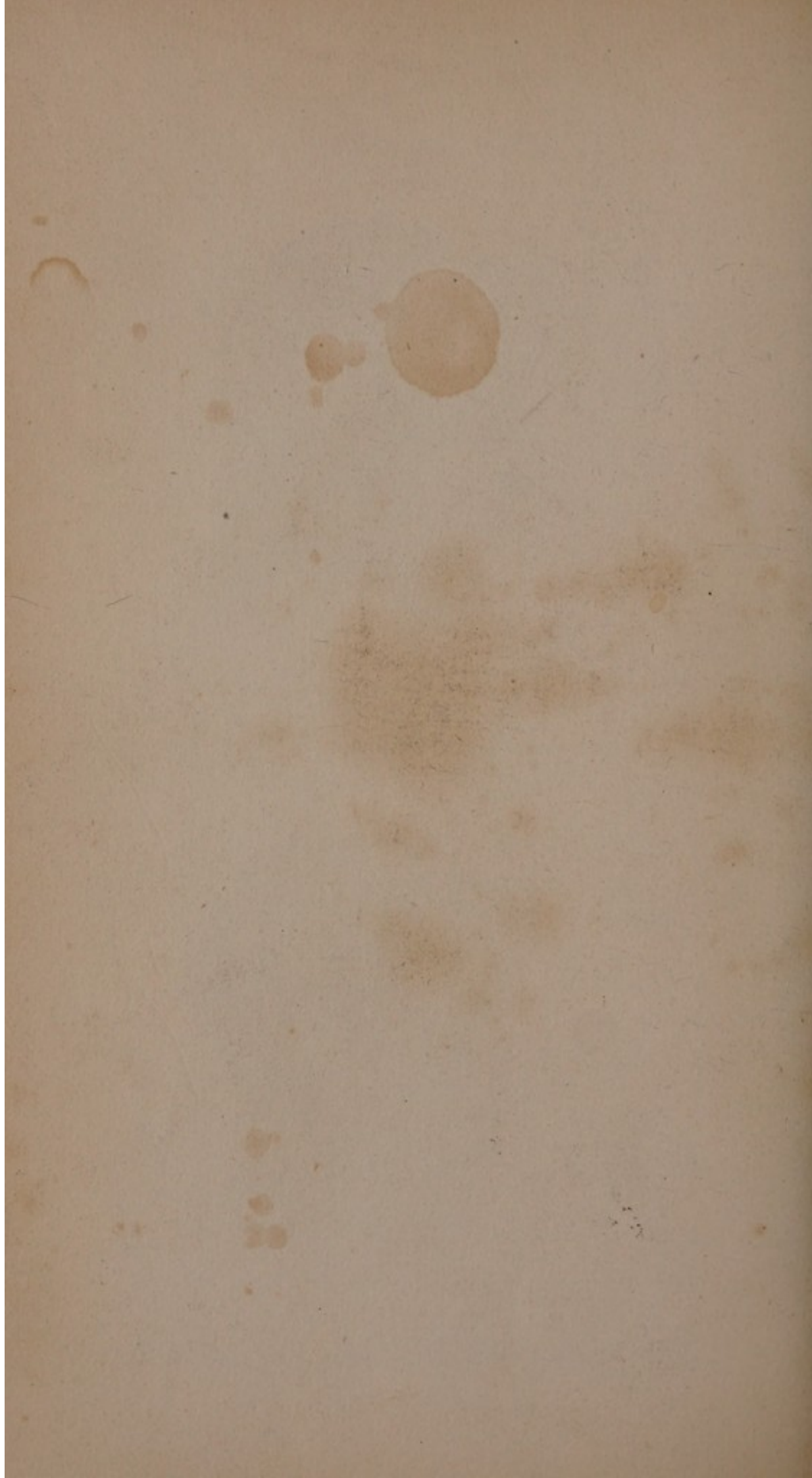


Fig. 1.



Philoprogneitismus - large

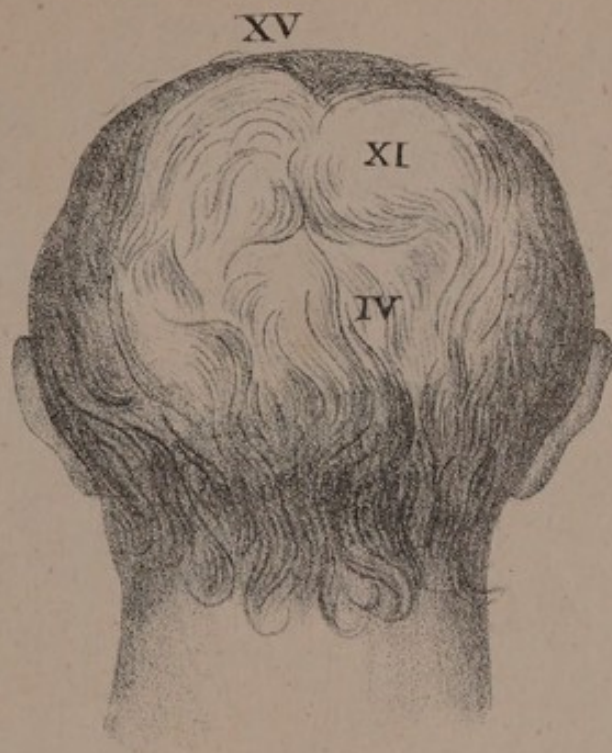
Fig 2



Philoprogneitismus - small

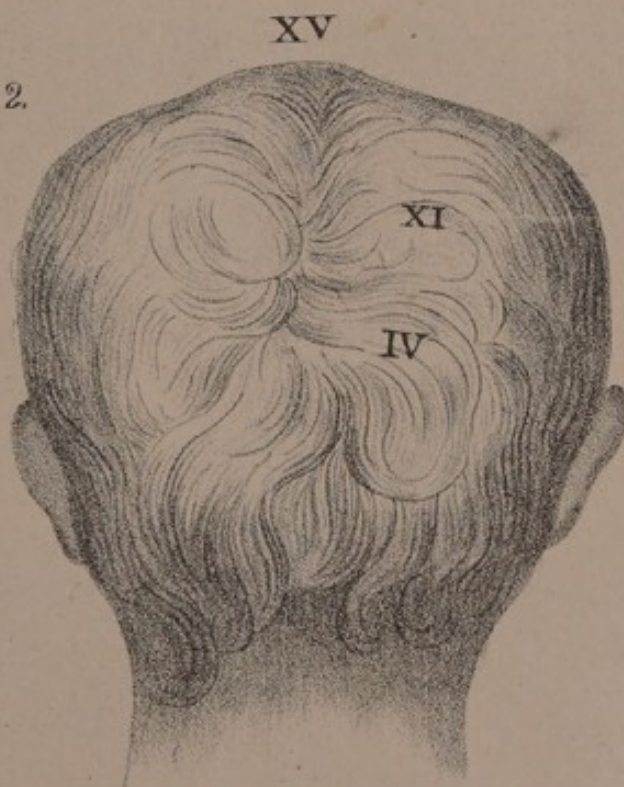
4 and 3.

Fig. 1



Combatus - Destruction

Fig. 2



Firmus

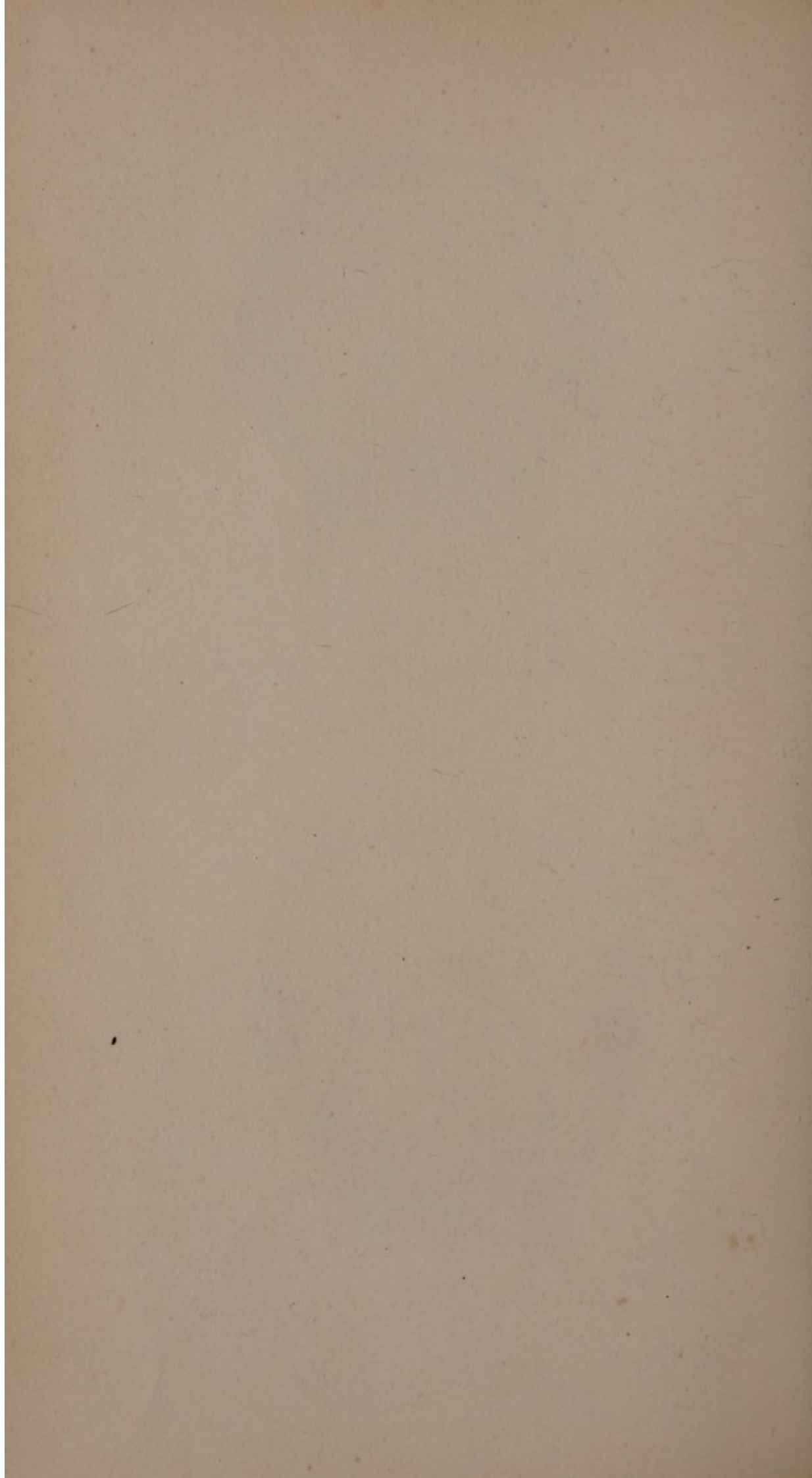
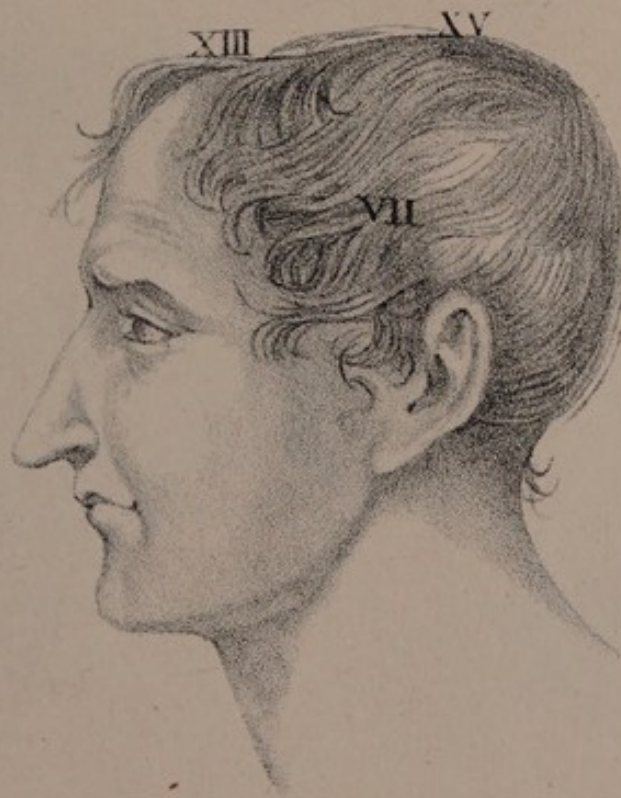


Fig 1.



Fig 2



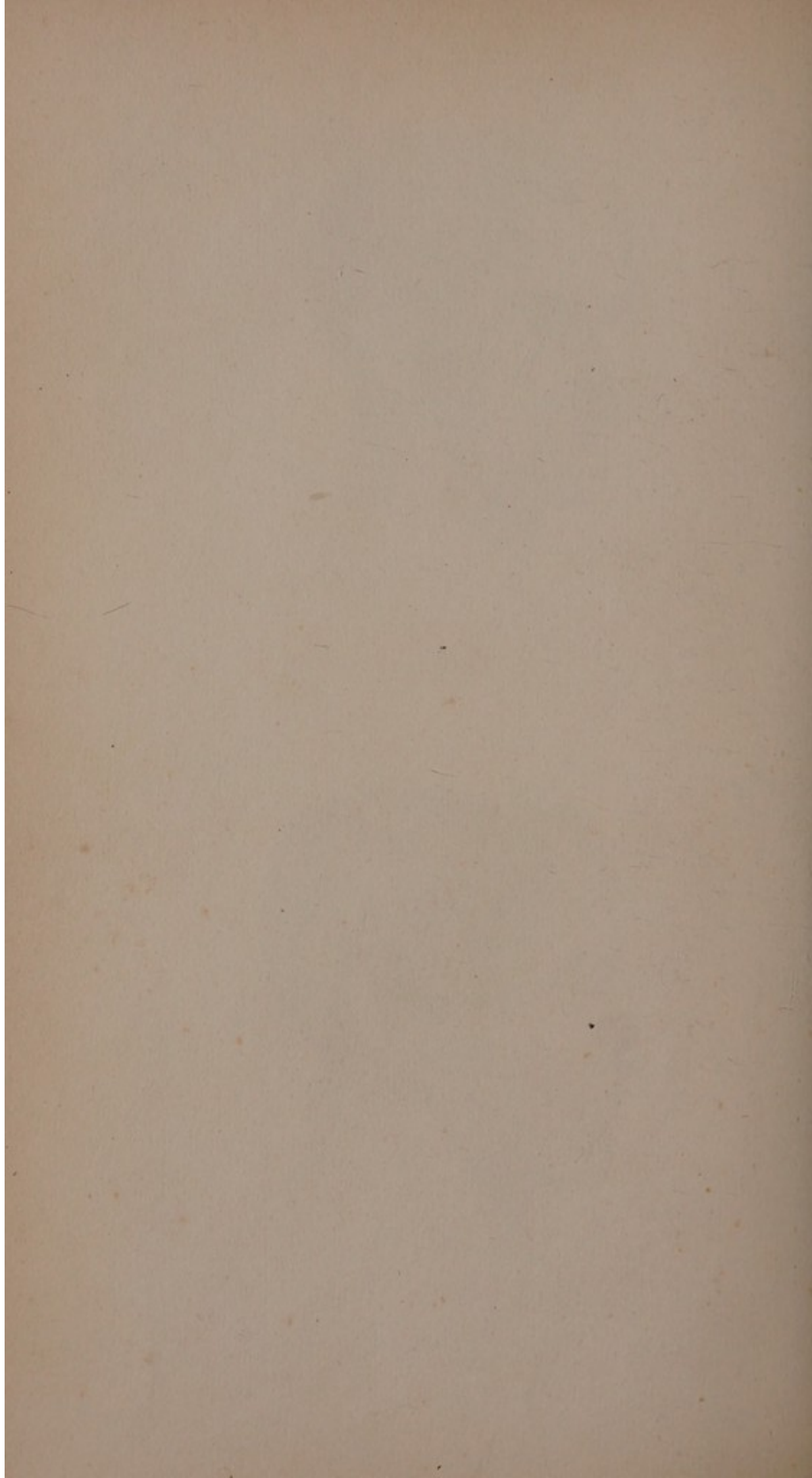


Fig. 1

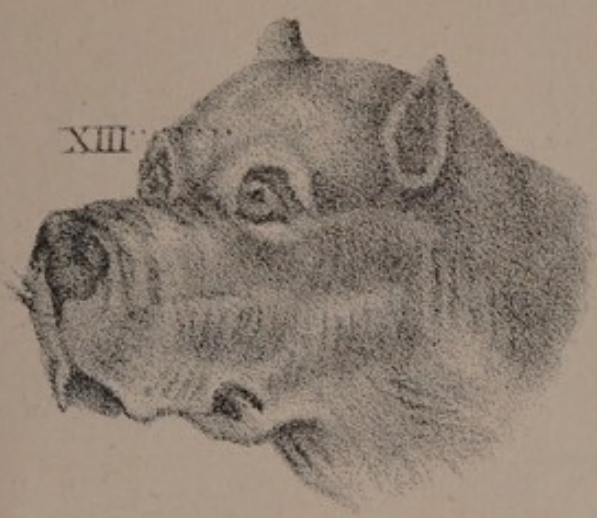


Fig. 2



Good Temper

Bad

Fig. 3



Fig. 4



Good Temper

Bad

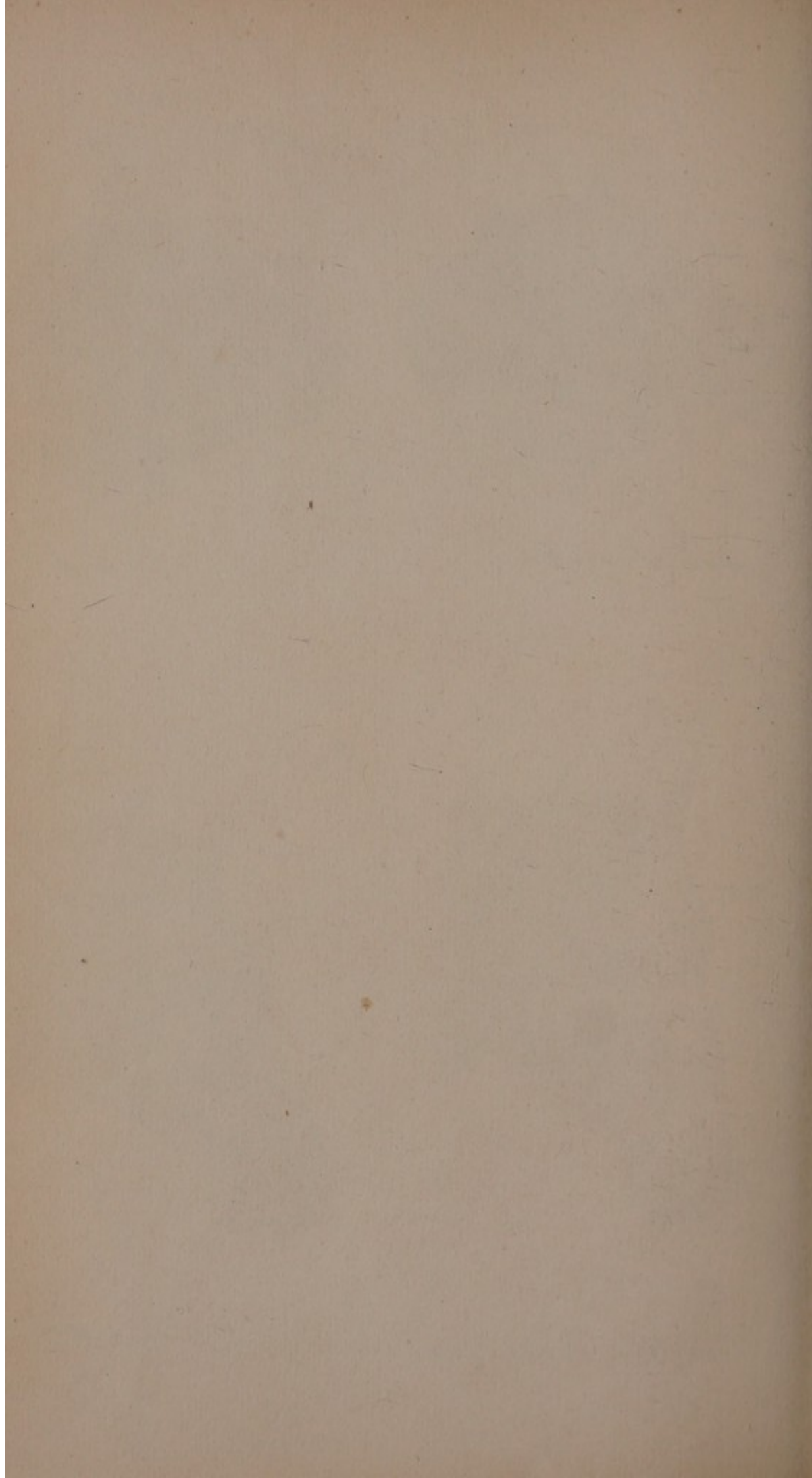


Fig 1.



Benevolens - Pueration

Fig 2



Bad facies

8 and 10.

Fig. 1.



St. Bernard

Fig. 2.



Shakespeare

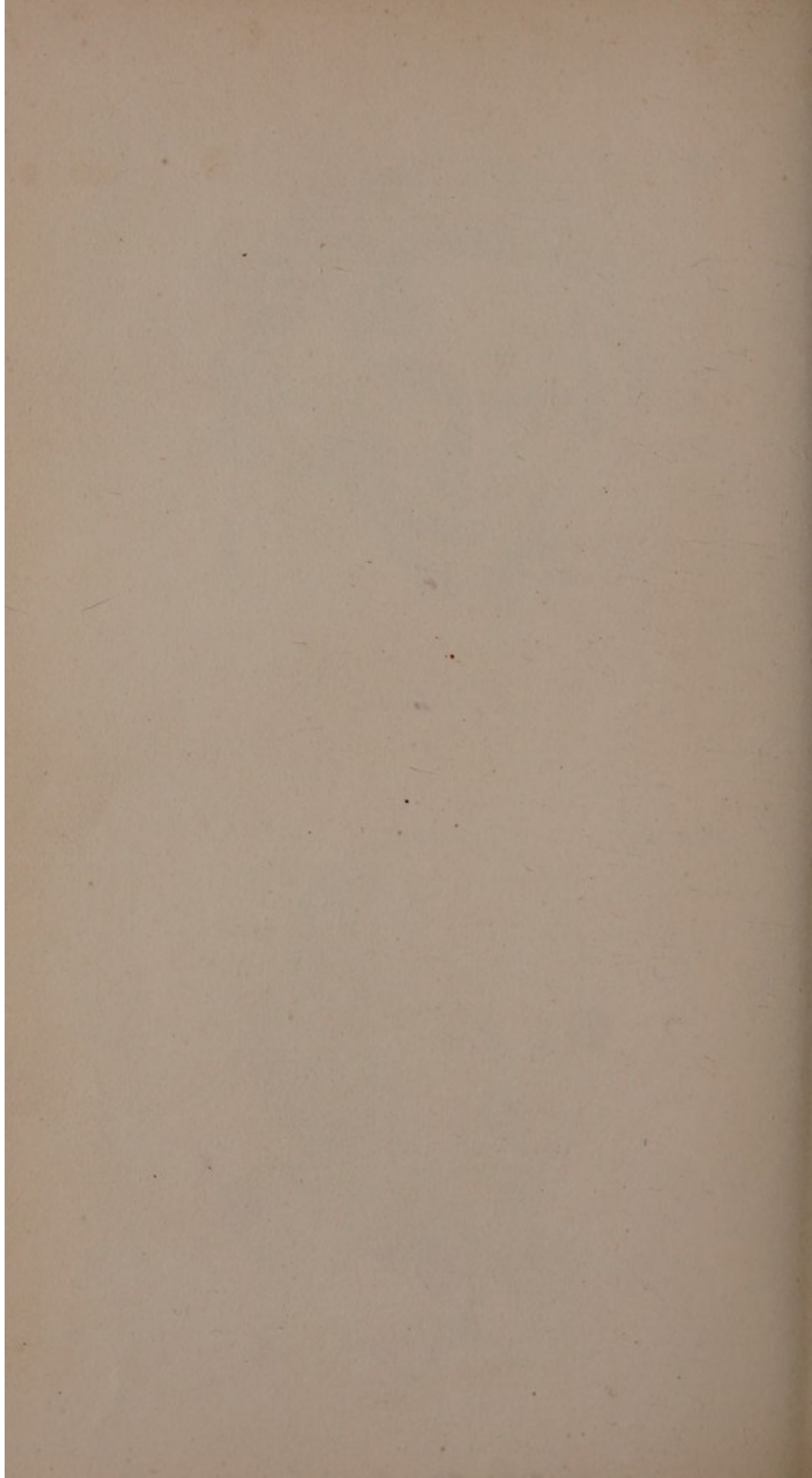
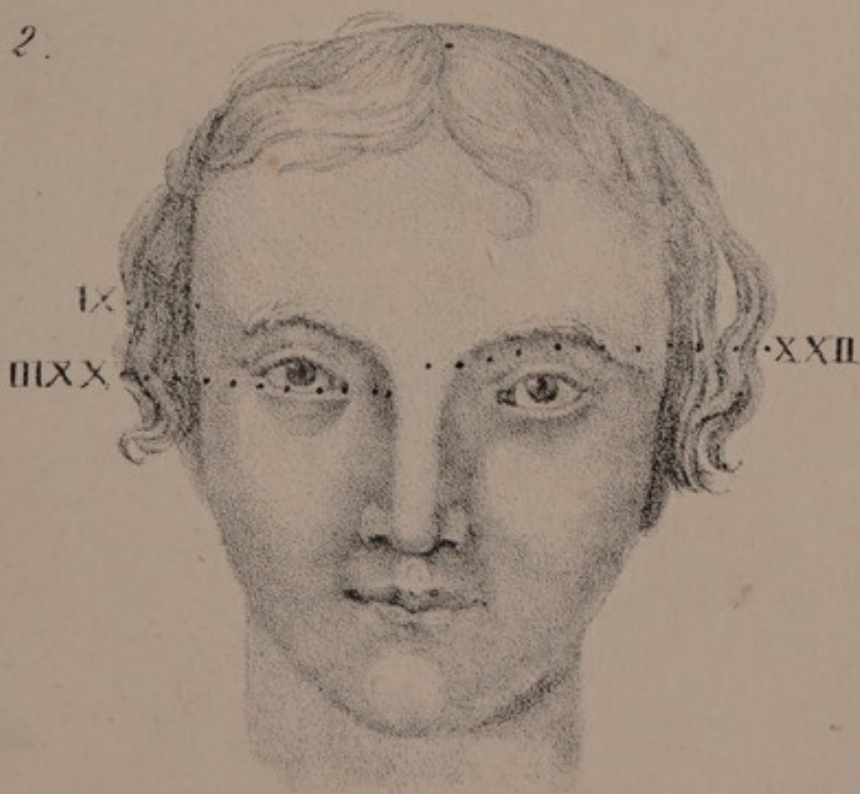


Fig. 1.



Extrusality

Fig. 2.



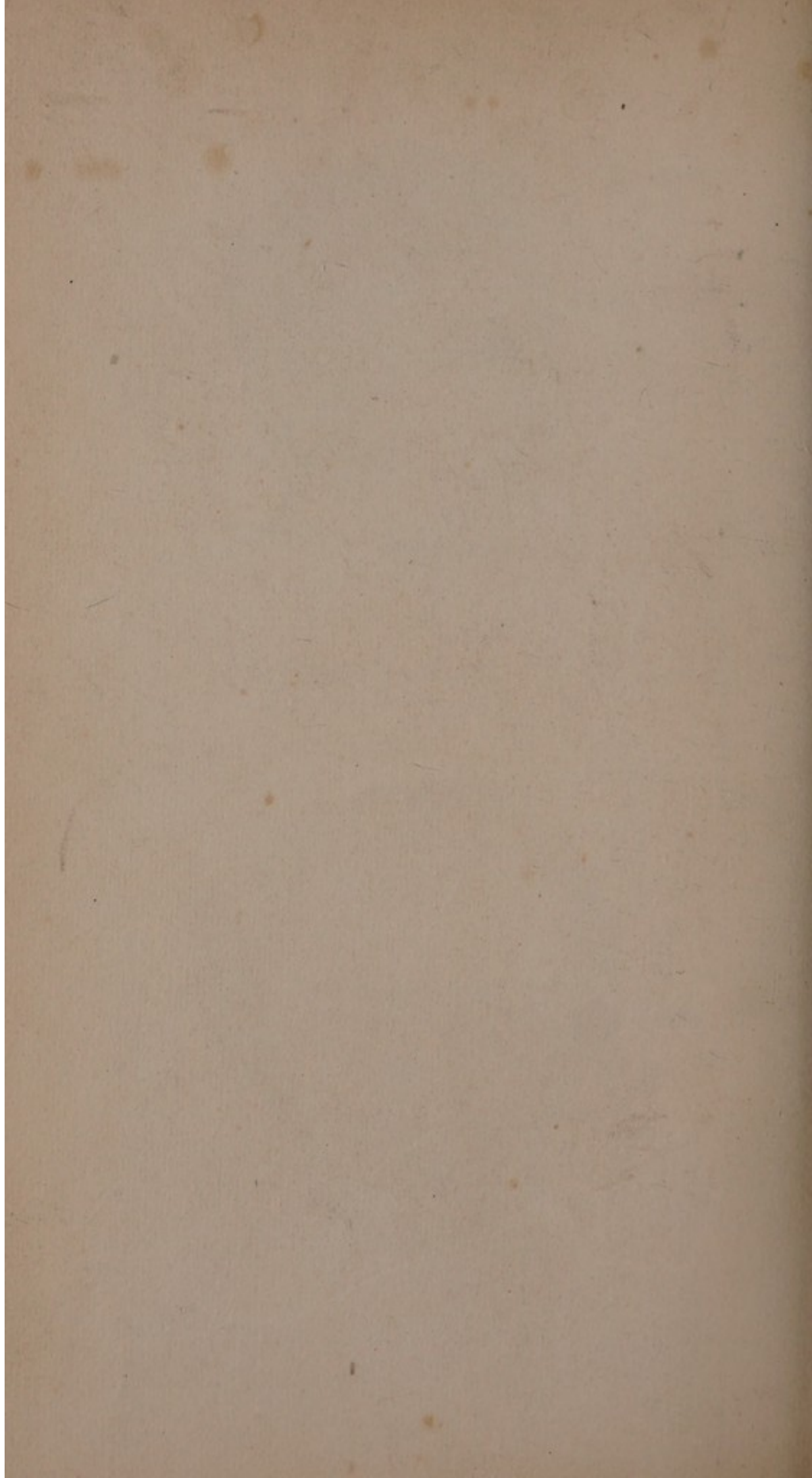


Fig. 1.

XXVI



P. P. Rubens

Fig. 2.

XXVII



Capt. Cook

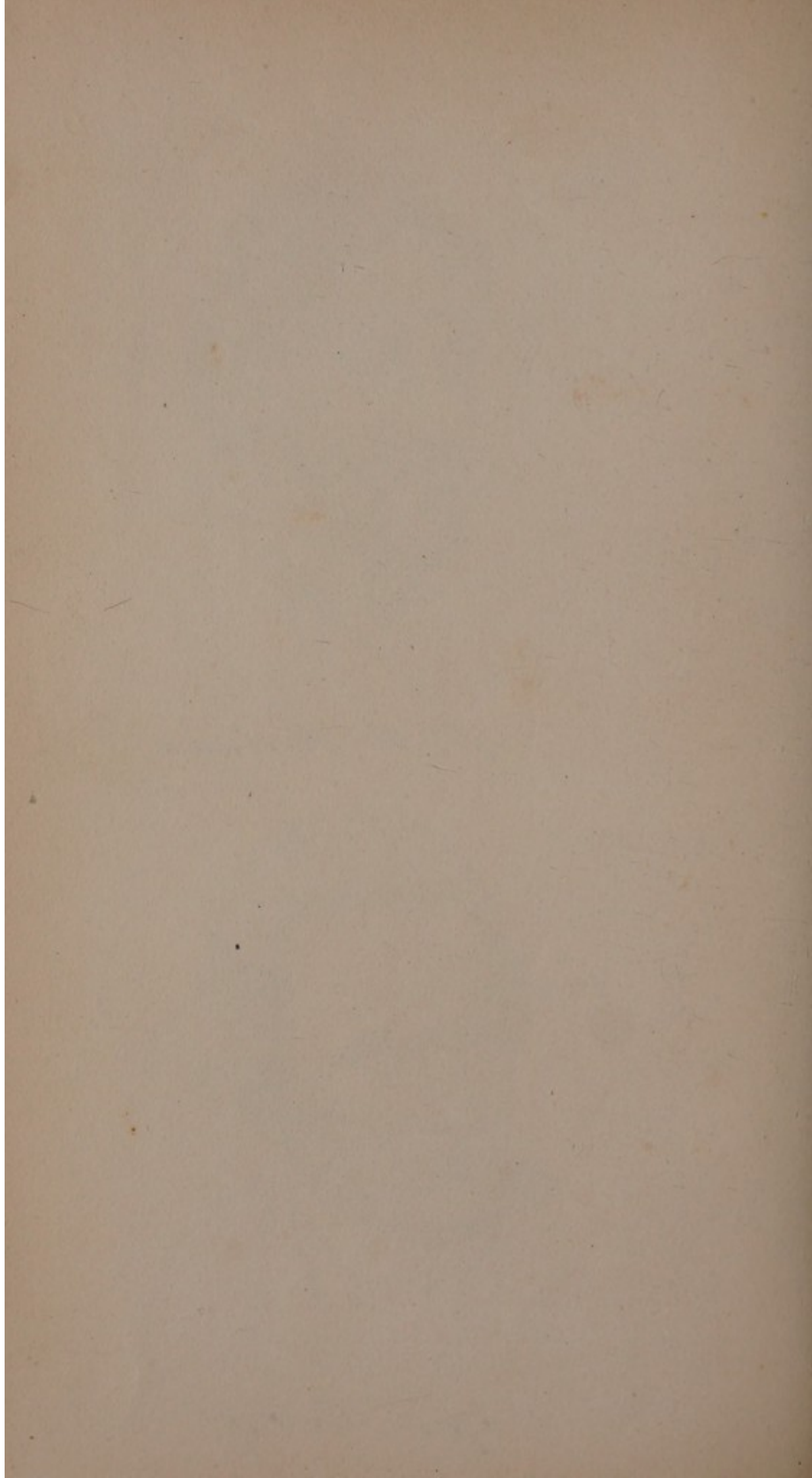
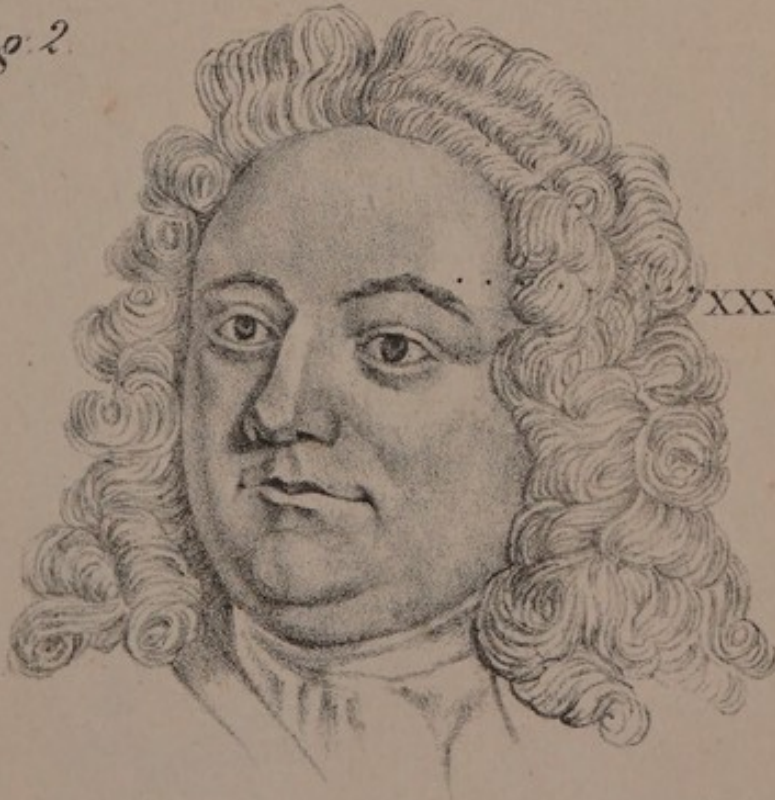


Fig. 1



Jenniah Buxton

Fig. 2



XXXII

Staudt

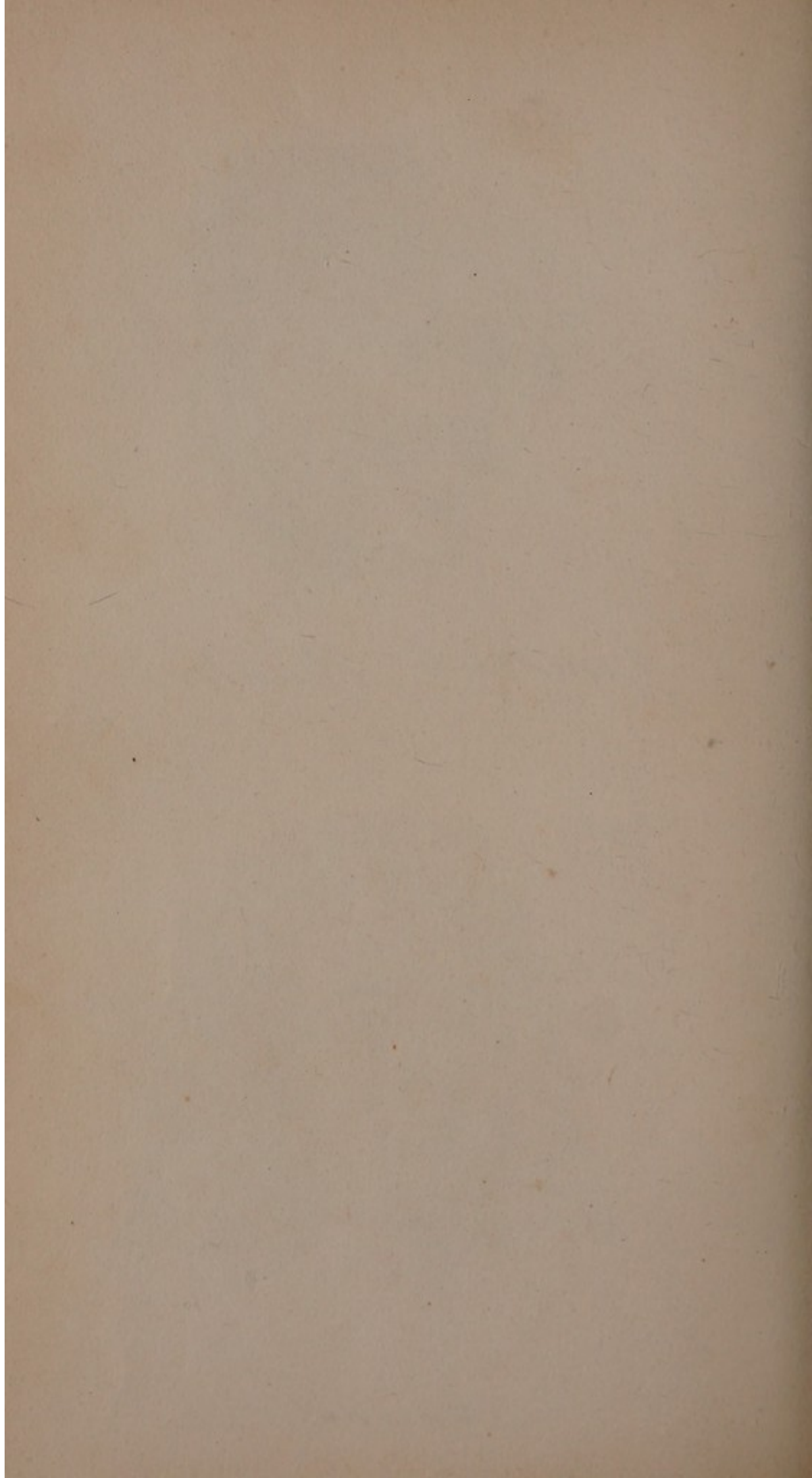
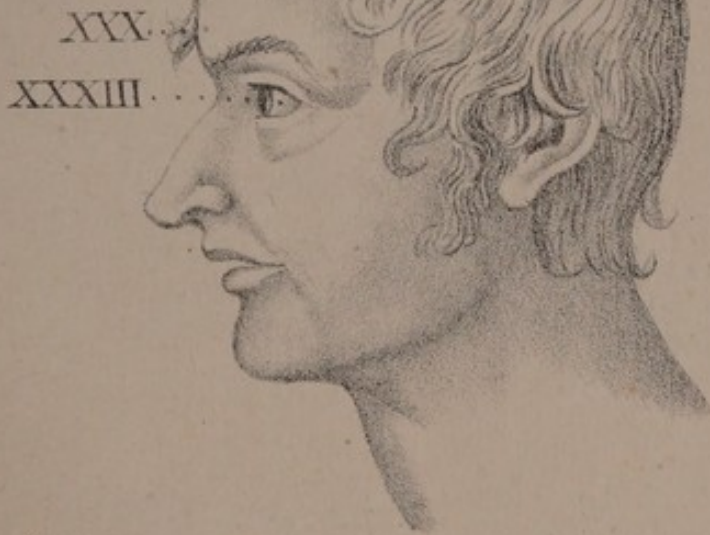
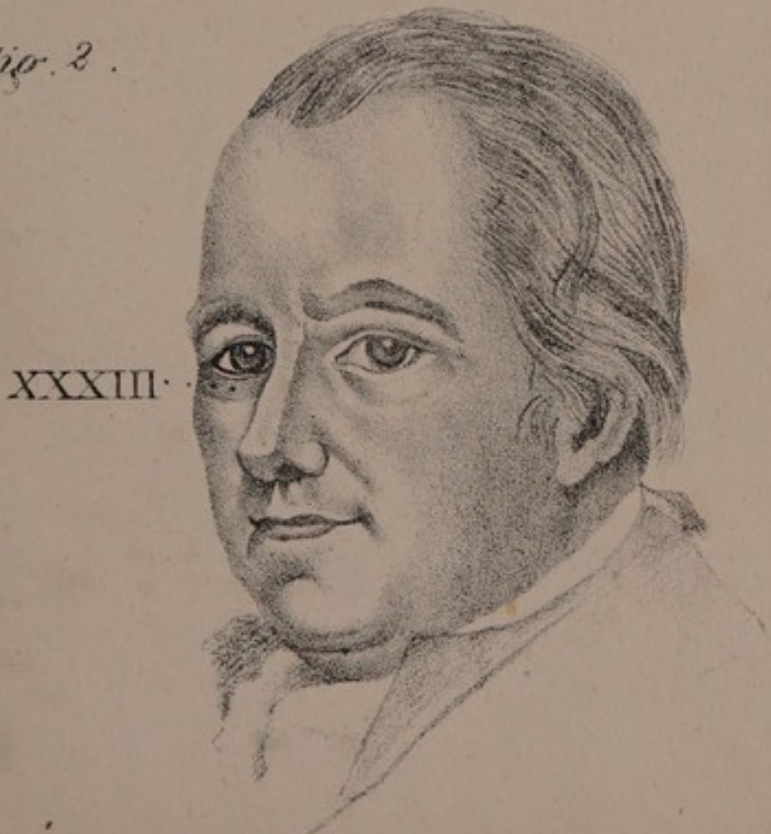


Fig. 1.

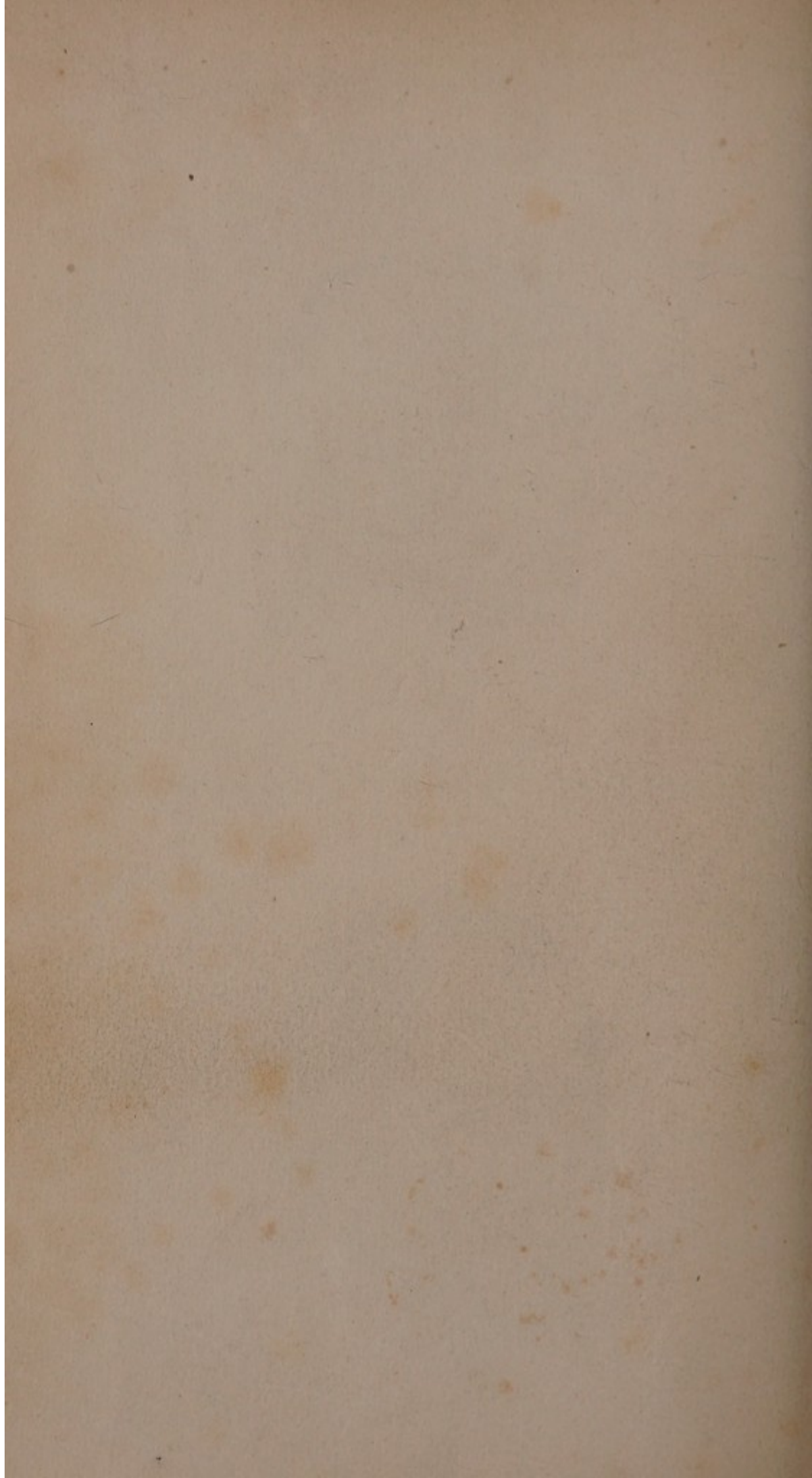


Evolutionary and Language, Man

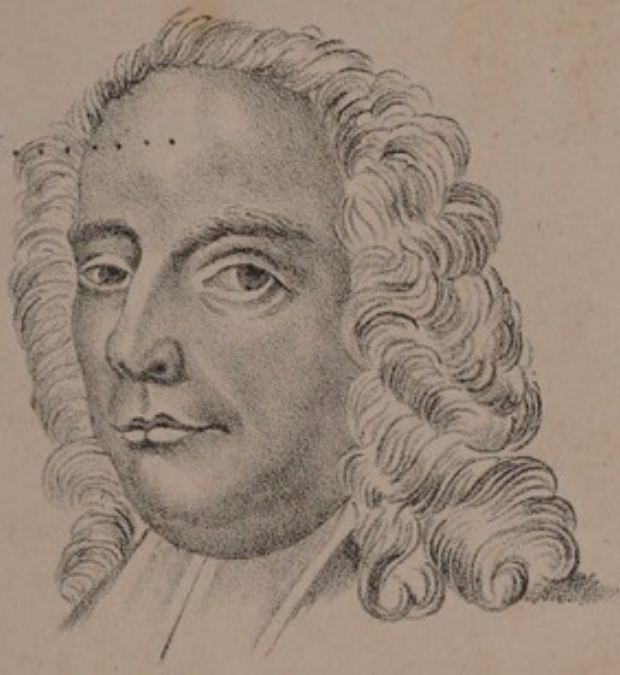
Fig. 2.



Home Tooke



XXXIV

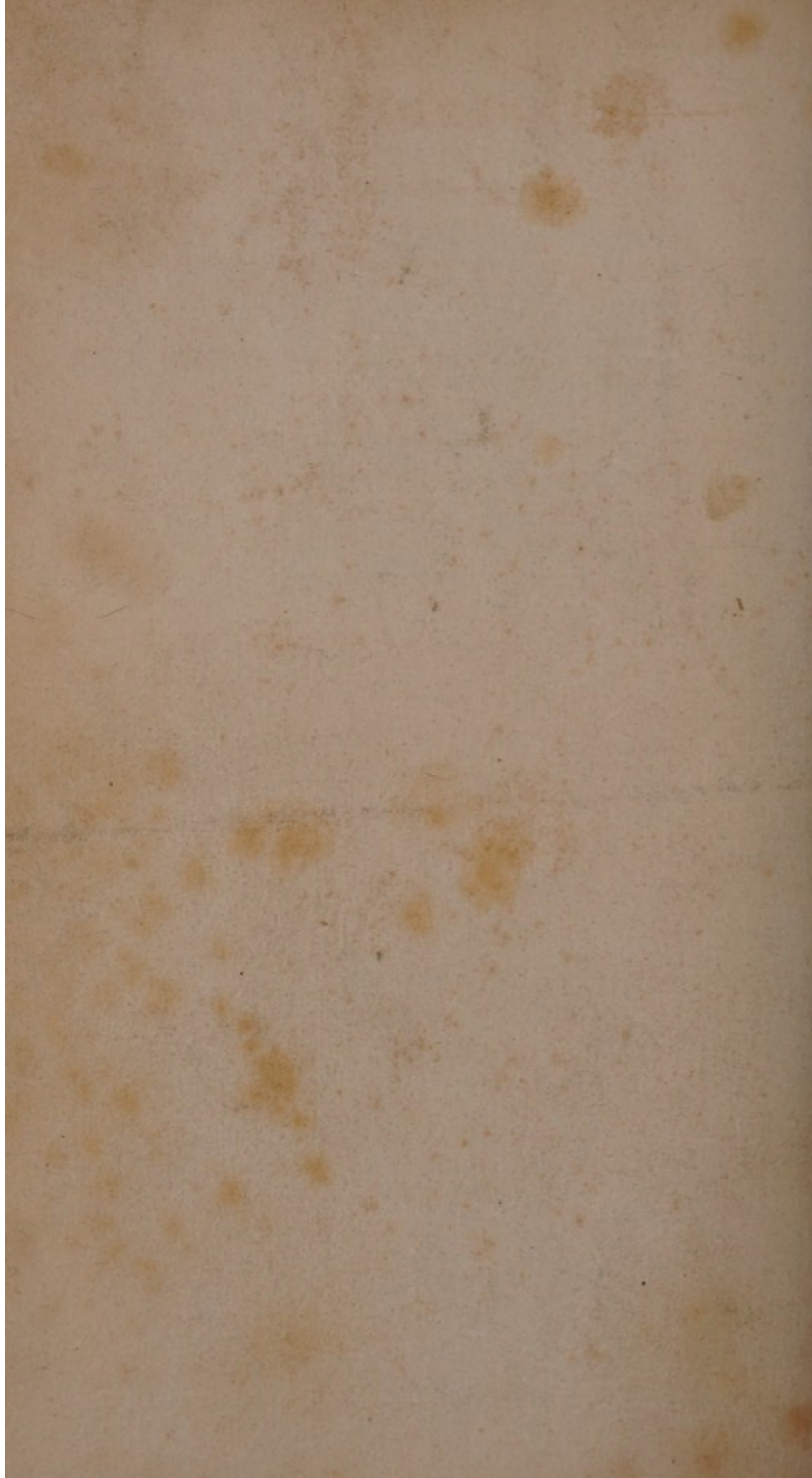


J. Abernethy

XXXV



Kant



APPENDIX

TO THE

ANATOMY OF THE BRAIN,

CONTAINING

A PAPER READ BEFORE THE ROYAL SOCIETY
ON THE 14TH OF MAY, 1829,

AND SOME REMARKS ON MR. CHARLES BELL'S
ANIMADVERSIONS ON PHRENOLOGY.

WITH SEVEN LITHOGRAPHIC PLATES.

BY

G. SPURZHEIM.

London :

TREUTTEL, WÜRTZ, AND RICHTER,
30, SOHO SQUARE.

1830.

APPENDIX

TO THE

ANATOMY OF THE BRAIN

CONTAINING

A PAIR OF HEADS FROM THE ROYAL SOCIETY

ON THE 15TH OF MAY 1830

AND SOME REMARKS ON THE CHANGES WHICH

ATTEND UPON THE DEVELOPMENT OF THE BRAIN.

WITH SEVERAL DIAGRAMS AND PLATES

BY G. SPENCER SMITH.

LONDON:

THURSTON, WURTS, AND BROTHERS,

20 BOND STREET.

1830.

PREFACE.

RICHARD CHENEVIX, Esq., who died too soon for science and friendship, during his last stay in England, desired me to give him a Paper on any point of Phrenology, proper to be presented to the Royal Society of London. I complied with his wish, in order to try the wisdom of that learned body, and my lamented friend delivered the following Paper to one of the Secretaries, who read it to the Society on the 14th of May, 1829, but declared that it could not be printed in the Transactions of the Society, because it did not contain any new matter. I grant that its general principle—the plurality of organs—prevails in the joint publications of Dr. Gall and myself, as well as in my work on the Anatomy of the Brain; but the specifications of the particular cerebral portions, 1st, in the ordinary state of the Human Brain—2dly, in the Brain of an Idiot—3dly, in the Brain of the Ourang-outang, cannot be found in our works, since Dr. Gall died without knowing those points, and I did not know them when I published my work on the Anatomy of the Brain, in 1825. My former manner of marking the organs on the external surface of the head (see the Phrenological Busts), compared with the new delineation, is an evident proof of this truth: formerly I indicated the situation of all, but the limits only of a few

organs, whilst the actual delineation corresponds not only with the situation of the organs, but also with their limits and configuration. This additional discovery was desirable—nay, indispensable—to our other anatomical discoveries and publications in connexion with the Physiology and Pathology of the Brain.

On the other hand, the Transactions of the Royal Society contain many new illustrations of known principles, whilst none of their volumes give the views contained in my Paper on the Brain in the ordinary state, in the state of Idiotism, and on the Brain of the Ourang-outang. It is, however, conceivable that the Secretary, who never ceased to be hostile to Phrenology, found, as he said, that my ideas require a great imagination to be admitted, and objected to their being printed in the Philosophical Transactions. My friend Chenevix, in order not to have a formal refusal, withdrew the Paper. The adversaries of Phrenology may not appreciate, perhaps not even understand, the principles and ideas of my Paper; but those who take interest in the most important part of Anthropology will appreciate them, as the completion of the Phrenological Anatomy of the Brain. I publish the Paper without the least alteration. I profit of this opportunity to make a few remarks on Mr. Charles Bell's animadversions on Phrenology, and rely throughout on truth and on the justice of public judgment.

G. SPURZHEIM.

APPENDIX,

ETC. ETC.

On the Brain as an Aggregation of Parts.

THE slow progress of human understanding is perceptible in all branches of knowledge, but it is particularly striking in the doctrine of the nervous system. It is not yet long ago that, however strange it may appear, the brain was classed along with the viscera of the abdomen and thorax, and its structure treated of in the *Splanchnologia*, though at the same time it was considered as the origin of the nerves of the whole body. The old error, too, that the nervous system is composed of similar parts and can be compared with a net, prevailed till lately, though it may be refuted by anatomical, physiological and pathological facts, and though several ancient anatomists, particularly Erasistratus and Galenus, had already perceived the light of truth. It, however, was reserved to modern anatomists to establish sounder notions of the structure and functions of the nervous system in general, and of the brain in particular.

The brain and the nervous apparatus are now placed together in one system. Proofs, founded on comparative and human anatomy, are quoted to show that the nervous masses are different, and that the brain, spinal cord, and nerves of the vegetative functions, cannot be confounded with each other. Not only divisions, but even subdivisions of the individual portions, are admitted. Winslow, Johnstone, and Bichat not only separated the great sympathetic from the spinal cord and brain, but considered it also as an aggregation of nerves, or as a suite of communications between different nervous centres, situated at various distances from each other, and destined to separate functions. The physiological experiments of Mr. Charles Bell and of M. Magendie leave no doubt of the nerves of sensation and of voluntary motion being different. Mr. Charles Bell speaks of peculiar nerves of respiration, and of six sorts of nerves in the organ of sight. Three sorts of nerves go to the tongue, and the difference of the nerves of the five external senses is generally known. Thus, the difference and necessary subdivision of the nerves of the thorax and abdomen, of the spinal cord and of the external senses, is admitted; but the error, to consider the brain as a unity, is still pretty common, though it also may be refuted by anatomical, physiological and pathological facts, and though it has already been pointed out by several intelligent authors. In order to bring the doctrine of the brain in harmony with the rest of

the nervous system, the following remarks are proposed for consideration; and this object being the foundation of the most important part of Anthropology, deserves the attention not only of the medical profession, but of all thinking classes.

I cannot help beginning my remarks with stating the singular fact, that many physicians, and even some anatomists, who believe in the plurality of the nervous apparatuses adapted to the various nervous functions of the body, continue to contend for the unity of the cerebral mass. However, the plurality of the nervous apparatuses of the abdomen, thorax, spine, and external senses, might invite them to think it probable that the brain too is an aggregation of parts, destined to different functions, and brought into communication with each other, particularly as the brain is simple in the lower animals, and marked by additions and amplifications of parts in proportion as the animal functions become complicated, till in the human brain we find parts of which animals are destitute, in the same way as the nervous apparatuses of the vegetative functions and external senses become numerous and complicated in proportion to the functions themselves.

The close examination of this object, in order to be satisfactory, is to be conducted with anatomical, physiological and pathological views, and by bringing these three sorts of observations into harmony. Anatomical investigations alone are not sufficient to show the difference of the nervous

masses, and they alone cannot be relied on. Physiology and pathology must be called upon, as better means of deciding the question. Anatomy alone, for instance, cannot decide which nerves are destined to sensation, and which to voluntary motion; but these two sorts of nerves are ascertained by physiology and pathology. The difference of the olfactory nerve, within the head, of fishes, birds, carnivorous and herbivorous animals, and monkeys, is so great, that without the external apparatus and without the function of this nerve being known, it would not be taken for the same nerve. Thus, whether the nerves in their appearance are similar or dissimilar in different animals, they are considered as similar, if their functions be such, and as dissimilar, if this be the case with their functions.

The brain has hitherto been treated, with respect to anatomy, physiology, and pathology, in a different way from the rest of the nervous system; and it has the same fate as to its comparative anatomy, and as to the plurality of its constituent parts. The human brain is taken as the type of comparison, and, in different animals, individual cerebral parts are admitted or denied according to their similar or dissimilar appearances of form, situation, and connexion. This proceeding, however, should not be relied on in the anatomy of the brain, any more than in that of the nervous system, and it will be changed as soon as the cerebral functions shall be known. In order not to

extend this Paper too much, I shall confine myself to mere anatomical points, which may prepare such physiological and pathological discussions as cannot be indifferent to those who delight in philosophical inquiries.

The human brain is divided into cerebellum and brain proper, and the brain proper is subdivided into two halves called hemispheres, and each hemisphere into three lobes—anterior, middle, and posterior. This division and subdivision may be admitted in birds and mammiferous animals. Some anatomists, however, refuse the posterior lobes to the greater number of mammiferous animals. Their reason is, because the cerebellum is not covered by the brain, as in man and monkeys. But this manner of judging is evidently erroneous, even from mere anatomical considerations. If the posterior lobes were wanting whenever the cerebellum is not covered by the brain, the anterior lobes might be said to be wanting also each time the bulb of the olfactory nerve is not covered by the brain in the way that it is in monkeys and in man. Various appearances in the nervous system are explained by the horizontal position of animals and the vertical station of man. The spinal nerves, for instance, of the mammiferous animals go off from the spinal cord in a horizontal direction, whilst in man they run from above downward before they pass through the dura mater. The medulla oblongata has a horizontal position in animals, and a vertical one in man.

The great occipital hole, too, has a different position in animals and man. Now, if these and various other modifications of appearance be accounted for by the different position of man and animals, shall this cause not extend its influence over the appearances of the cerebral parts? The eyes are not wanting in birds, and in the greater number of the mammiferous animals, because they are placed laterally in their heads, whilst in man and monkeys they are situated in the face: in the same way the posterior lobes may exist, though they lie before the cerebellum.

The internal structure of the posterior lobes furnishes a surer proof of their existence than their external appearance. In man, they are evidently composed of bundles which come from the pretended optic thalami. Now, these very ganglions exist in the mammiferous animals as well as in man, and bundles run out of them towards the posterior convolutions of the brain. This analogy of structure allows us to conclude upon similarity of parts, and this conclusion is put beyond doubt by observing instincts in animals which resemble certain feelings in man, the manifestations of which take place by the posterior lobes of his brain.

It is a difficult matter to decide about the existence or want of individual parts in the brains of man and animals. What is of the greatest importance is, not to confound the essence or existence of a special apparatus with its more or less complicated state, since a portion which

amplifies its structure may be wanting in certain animals, which, however, possess the apparatus of the special function, but in a more simple state. The intestinal canal, in different animals, is simple, or more or less complicated. Pigs, dogs, cats, etc., as well as the ruminantia, have a stomach, though in the former it is simple, and in the latter complicated. Birds, as well as mammiferous animals, have a cerebellum and hemispheres of brain; but the cerebellum of birds has no pons, and their hemispheres no corpus callosum. It was a great error to take the general type of brains in a class of animals as the criterion of the existence of individual parts. The corpus callosum, for instance, the pons, etc., have been taken as parts for themselves, whilst they are mere complications of individual cerebral apparatuses.

It is remarkable that the brains, though they are more or less complicated, preserve a common type in each class and in each genus of animals. In various animals, for instance, each portion of their brains is formed in a similar way, ends at the surface in one or several convolutions, and has fibres which run towards the middle line and contribute to make up what is called corpus callosum; but it was wrong to take the corpus callosum as a part for itself, whilst it contains merely portions of as many apparatuses as the hemispheres are composed of. The corpus callosum, then, is a mere indication that the special parts of the he-

mispheres of various animals are built according to a common type. But the general type of brains may be analogous, though the special apparatuses destined to individual functions may vary in number and size. Various brains may present three lobes, convolutions, a corpus callosum, a fornix with its appendices, four cavities, and yet the special parts which make up the whole of their brains may be different in number, size and quality, whilst their general form of structure alone is similar.

Thus, the old error in question committed by our contemporaries, as well as predecessors, must be abandoned, and the comparative anatomy of the brain must be treated as that of all other systems of organisation.

After these general remarks, I shall examine in particular—1st, Whether in the Human Brain individual parts destined to special functions may be pointed out, though they are in the most intimate connexion with each other—2dly, Whether it can be shown that in Brains of Idiots certain parts are defective or even wanting—and 3dly, Whether the Brain of the Ourang-outang and the human brain, which have the greatest analogy with each other, are composed of the same parts.

I. *The Parts of the Human Brain in the ordinary state of health are essentially the same, and only modified in size and quality.*

Let it be kept in mind that a true division of the nervous system in general, and of the brain in particular, can be established only by the functions performed. The general form, direction, and connexion of the convolutions, however, prove the regularity of the essential parts of the human brain, and it is certain that individual portions may be pointed out.

This anatomical regularity is evident and particularly striking at the basis of the brain. The posterior convolution, for instance, of the basis of the anterior lobes is always transverse;—four cerebral portions meet at the external roots of the olfactory nerve; the convolutions in the middle line are longitudinal. A similar direction is perceptible in the convolutions of the middle lobe, etc.—As the appearance of the convolutions at the upper surface seems less regular, I give a drawing taken from a human brain, in order to exemplify my assertions, and to show the individual portions which may be seen in the ordinary state, whilst their modifications concern their size and their greater or smaller number of lateral indentations and depressions at the surface of the convolutions. These modifications exist not only in the brains of different persons, but on both sides of the same brain, as may be seen in the drawing before us (Pl. I.),

where the cerebral parts are reduced in size, but where proportions and configurations are preserved. Views of the brain from its basis and in profile are easily found in various anatomical publications.

The posterior extremity of the hemispheres is composed of several convolutions running in the direction towards the apex, *a*. Now, this portion between *a* and *b* is always distinct and separated from the following portion by a deep anfractuosity at *b*.

Between *b* and *c* is another portion, composed of several convolutions distinguishable in every ordinary brain. No anatomist, for instance, can be mistaken in looking for the convolution marked 10.

Between *c* and *d* lie always two convolutions, 16 and 17, which run laterally towards the cerebral portion 18, situated under the anterior inferior angle of the parietal bone. The convolution marked 16 was in this brain larger on the left than on the right side; but its lateral appearance, though modified on both sides, is essentially the same.

The portion 14, between *d* and *e*, is commonly, as in this case, separated from the lateral parts; but sometimes, on one or the other side, or on both sides, it is in connexion with the portion marked 18.

Between *e* and *f* is a longitudinal portion, 13, sometimes separated from the lateral convolution marked 21 on the right side, and sometimes connected with it, as on the left side.

Farther, the portions marked 18 18, 4, 5, 11, 12 12 12, and others deeper situated laterally and in the forehead, may be easily pointed out in the ordinary state; and in this way the idea of the regularity of the cerebral portions, as to their essential appearance, may be put at rest.

If it be objected that the difference of their internal organisation cannot be proved by anatomy, I repeat that which I already stated with respect to the parts of the spinal cord, or nerves of sensation and voluntary motion; viz. that their difference, too, cannot be proved by anatomy, but that it is admitted from physiological proofs. The same will be the case with the cerebral portions.

II. *In certain Idiots, individual Portions of the Brain are defective, or even wanting.*

It is evident that a disorder in the internal organisation of the brain and its parts may prevent the manifestations of the mind; but it is also certain that sometimes individual portions of the brain are defective in their development, remain more or less in their embryonic state, or are entirely wanting. Why should this not happen in the cerebral portions, as well as in the nervous apparatuses of the external senses? There are various cases of monsters on record, who were deprived of the olfactory or optic nerve; others are born with imperfect brains. In the *Zeitschrift für Physiologie*, published by Tiedemann and Tre-

viranus, several defective brains of monsters are described and represented. There is one whose surface is smooth, without convolutions, as in the lower animals and in the embryo of man. In my work on the Anatomy of the Brain, I gave the figure of the brain of an idiotic girl, who died at Cork in Ireland, in comparison with the brain of an ourang-outang, kept in alcohol in the Garden of Plants at Paris. I lay here by the drawings of such a brain in the possession of Mr. Stanley, by whose kindness I was allowed to take them. There is one view from above, another in profile, and a third from the basis. The natural size of the individual parts is copied, but the parts are not in their natural position: the medulla oblongata, the cerebellum and the posterior lobes, in particular, are stretched out horizontally backward, because the brain is taken out of the skull.

Pl. II. presents the upper surface. Being compared with the ordinary state (Pl. I.), the portion between *a* and *b*, and that between *b* and *c*, are evidently defective in their development. The third portion, between *c* and *d*, is still more so. The portions 14, 13, and 21 of the ordinary brain are not distinctly separated from each other, but are mixed together between *d* and *f*. The convolutions marked 10 and 11 are more regular, whilst those marked 4, 12, and 18 are very defective and irregular.

The same brain in a lateral view (Pl. III.) shows a defect in all the lateral parts, but particularly in

the anterior portion of the middle lobe, *h*, and in the whole anterior lobe, between *f* and *g*. The portions 4, 5, 12, 16, 17, are extremely defective, in comparison with the ordinary state; 6, 7, 8, 10, and 11, are more regular.

In the views from the basis (Pl. IV.), the individual masses of the middle lobes are pretty natural; but in the anterior lobes, the most striking difference is observed. The longitudinal anfractuosity, in which commonly the olfactory nerve runs, is scarcely indicated by a very small depression, *i*; the oblique depression, *k*, corresponds to an anfractuosity which, in the ordinary state, divides the lower surface of the anterior lobes into three portions—posterior, internal, and external. The common subdivisions of these three portions are scarcely perceptible, and their embryonic state is evident. The cerebral mass, situated behind the superciliary ridge, is extremely backward in its development, and several convolutions which elevate the forehead of man are wanting.

III. *The Brain of the Ourang-outang does not contain all the Parts of the Human Brain.*

It is often said that the brains of mammiferous animals contain the same parts as those of men; while the truth is, that their brains are more or less complicated, and that even the brain of the ourang-outang—which, among all other brains, has the greatest analogy with the human brain in its

healthy state, and a greater analogy than the brains of many idiots—is yet deprived of several parts. Tyson, who gave a very imperfect figure of the brain of the ourang-outang, was mistaken in finding it quite similar to that of man. M. Tiedemann (*Zeitschrift für Physiologie*, 2 B.) mentions the similarity of the brain of the ourang-outang with that of man as to the cerebellum, medulla oblongata, pons, crura, corpora quadrigemina, optic thalami, corpora striata, corpora candicantia, fornix and its appendices, corpus callosum, anterior and posterior commissures; but he adds, that the brain of the ourang-outang essentially differs from that of man—1st, by its whole mass being smaller, and, 2dly, by its smaller number of convolutions and anfractuositities: yet he had no idea of the special portions being more defective than in man, and of certain parts being wanting altogether.

My friend Dr. Leach granted me the permission to make drawings from the brain of an ourang-outang which belongs to him, and is now deposited in the College of Surgeons at London. The three views, from above, in profile, and from the basis, compared with the regular brain of man and with that of the idiot, show at once the analogy, modifications and differences of certain parts, and the entire want of others. The brain being taken out of the skull, its parts changed their natural position, in the same way as the idiotic brain.

Pl. V. is the view from above. In comparing it with Pl. I. and with Pl. II., the portions between *a b*, *b c*, and *c d*, are very similar with Pl. I., and more complete than in the idiot, Pl. II. The portion marked 14, between *d* and *e*, Pl. I., is wanting in the ourang-outang; but the next portion, marked 13, Pl. I., between *e* and *f*, is quite similar in man and in the ourang-outang. The parts 4, 5, 10, 11, 12, 16, and 17, correspond to similar parts in man; but about 18 there are several convolutions in man, whilst in the ourang-outang there is only a small cerebral portion, of which it is impossible to say whether it is composed, or not, of different parts.

Pl. VI. exhibits the ourang-outang's brain in profile. There is, again, more analogy with the ordinary state of the human brain than with that of the idiot, Pl. III. The portions *a b*, 4, 5, 6, 7, 8 8 8, 12, 16, and 17, correspond with distinct portions in man. In the anterior lobes between *f g* there is more brain than in the idiot, yet about *f* there is great want of cerebral mass in comparison with the ordinary state of man: 21 seems similar with man, but about 18 again the want of brain is evident.

Pl. VII. represents the brain of the ourang-outang from the basis. The medulla oblongata, cerebellum, pons, crura, vicinal nerves, and the convolutions of the middle lobes, are quite analogous with those of man. The general division, by the anfractuosity *k*, into three portions, posterior, in-

ternal and external, of the basilar part of the anterior lobes, is visible, as in man; the internal portion is, proportionately to the others, the largest—the posterior and external are small. The cerebral masses behind the superciliary arch are less distinct, and the whole forehead is much smaller than in the ordinary state of man.

The greatest analogy, then, between the brain of man and that of the ourang-outang is in the cerebellum, the middle and posterior lobes, and at the upper surface from behind forward to the two lateral convolutions included. The greatest difference is evident about the portion of the head which corresponds to the fontanel in children, since the portion marked 14 in man (Pl. I.) is entirely wanting; farther, about the portion, marked 18, under the upper lateral part of the frontal bone, and in the anterior lobes, particularly along the superciliary ridge, and in the upper part of the forehead.

From the preceding anatomical remarks, it follows—1st, that the brain cannot be considered as a unity;—2dly, that individual rubrics of cerebral portions may be pointed out in man;—3dly, that these individual portions may be more or less defective, or entirely wanting;—4thly, that the brain of the ourang-outang, notwithstanding its great analogy with the human brain, is deprived of certain parts, whilst others are less developed than in the ordinary state of man;—5thly, that

the comparative anatomy of the brain must be conducted in the same way as in every other system of organisation ;—and finally, that a true division of the cerebral masses can be established only by the assistance of Physiology and Pathology. The importance of this object is evident from the delicacy of cerebral organisation, and it is proportionate to the eminent functions attached to it. I therefore hope my remarks will meet the same attention which is commonly bestowed on investigations concerning other parts of our body, or even inanimate beings.

G. SPURZHEIM, M. D.

SOME REMARKS

ON

MR. CHARLES BELL'S ANIMADVERSIONS ON PHRENOLOGY.

CHARLES BELL, Esq., in a Paper on the Nerves of the Orbit, read before the Royal Society of London, June 19, 1823, printed in the Philosophical Transactions of the Society, vol. cviii. p. 306, attacked Phrenology in expressions which the lover of truth will know how to qualify. I was aware of them long ago, and knew that this mighty Professor had reproduced them in 1824, in an octavo volume; but I had hoped that he had changed his mind, after all which has happened since 1825, in Great Britain and Ireland, with respect to Phrenology. But as he has again published his accusations without any additional note or explanation, in this very year 1830, in a quarto volume entitled "The Nervous System of the Human Body" (p. 222), I wish to bring his high-sounding animosity against scientific importations from foreign countries before the Court of public justice.

"The most extravagant departure," says the learned Professor, "from all the legitimate modes

of reasoning, although still under the colour of anatomical observation, is the system of Dr. Gall. It is sufficient to say, that without comprehending the grand divisions of the nervous system, without a notion of the distinct properties of the individual nerves, or having made any distinction of the columns of the spinal marrow—without even having ascertained the difference of cerebrum or cerebellum,—Gall proceeded to describe the brain as composed of many particular and independent organs, and to assign to each the residence of some special faculty.

“When the popularity of those doctrines is considered,” continues the Professor, “it may easily be conceived how difficult it has been, during their successive importations, to keep my pupils to the examples of our own great countrymen. Surely it is time that the schools of this kingdom should be distinguished from those of other countries. Let us continue to build that structure which has been commenced on the labours of the Monros and Hunters, and which the undeserved popularity of the Continental system has interrupted.”

Professor Bell seems to take his *ipse dixit* as sufficient authority; but *jurare in verba magistri* is no longer the fashion—he is answerable for his assertions, and bound in justice to furnish proofs. Meanwhile, I tax him in the same terms which he applied (4to volume, p. 221) to Bichat: “that he paid too little regard to the opinions that prevailed, often assuming that as a novelty which really was

not, and doing injustice to those who had preceded him."

Professor Bell is unjust towards Bichat, towards Gall, and towards the Continent in general. In my opinion, he beholds the mote that is in his brother's eye, and does not consider the beam that is in his own. If we consider Bichat's education, and his death at the age of thirty-one years, we shall easily excuse his small proficiency in literature; but must admire, at the same time, the juvenile fire of his mind, and the vastness of his conceptions. Had Mr. Charles Bell been carried off from the scene of life at that age, it is probable that his name would never have appeared in the annals of science. Farther, since he himself is obliged to admit that "the best apology for Bichat's conduct was the condition of his country at the time he lived," I ask Professor Bell, whether he can make the same apology for his proceeding. How can he maintain, in 1830, (4to volume, p. 9,) that "nothing more clearly evinced the wrong methods of study prevailing on the Continent, than the acquiescence and approbation with which this system (Bichat's ideas on the ganglions) was received there." Professor Bell must be aware that many anatomists of the Continent are acquainted with the ganglions of nerves which belong to what Bichat styled the animal life. I confine myself to quotations from our publications, since he particularly attacks Gall's doctrine; and our opinions were published long before Pro-

fessor Bell read his animadversions before the Royal Society.

Though Gall and myself considered Bichat as an extraordinary genius, yet, in our work on the Anatomy of the Nervous System in general, and of the Brain in particular (Paris, 1810), we contradicted every one of his opinions with which we thought it fit to find fault. We declared ourselves in particular against the ideas which he entertained on the ganglions.

Since Professor Bell complains of the popularity of our doctrines and of their successive importations, it may be sufficient for the general reader to know what I stated in my English work on the Anatomy of the Brain, p. 22, viz. : that the opinion in regard of the ganglions which Johnstone, Bichat, and Reil entertained, is by no means exact; that the ganglions do not interrupt the reciprocal influence of the brain and the nerves of the spinal cord, and that they appear essential to the structure of the nerves of sensation.

Farther, since our doctrines are so popular in Great Britain—since Professor Bell laments their successive importations, how can he accuse Dr. Gall of not comprehending the grand divisions of the nervous system? Are not divisions and subdivisions of the nervous masses, and the plurality of their functions, the essence of our inquiries from beginning to end? It seems to me that the principle of division and subdivision of the nervous system is as clearly expressed in our works

as Professor Bell is able to do it, and, I may add, with more details than he has done it. In the Preface of our large work on the Anatomy and Physiology of the Nervous System in general, and of the Brain in particular, tome i. p. xxii. (Paris, 1810), we say—"Ce n'est que lorsque l'Anatomie et la Physiologie seront fondues l'une dans l'autre, que la connaissance du système nerveux aura atteint son plus haut degré de perfection." In the Introduction, p. 11, we state—"Il est évident que le système nerveux n'est pas unique et uniforme, mais qu'il doit être divisé suivant les fonctions principales, et que chaque division principale doit être subdivisée suivant les fonctions particulières."

Among the Anatomical Corollaries (sect. ii. p. 75), the tenth states—"Les systèmes nerveux diffèrent entre eux dans leur origine, leur structure, leur couleur, et leur fermeté."

The fifth Section of the above work is entitled "De la Différence des Nerfs," and in p. 128 is the following passage: "Tous les nerfs diffèrent entre eux par la variété de leur configuration. Ainsi les nerfs des sens ne se ressemblent nullement dans leur couleur, leur consistance, leur forme, et leur texture. Souvent les divers filamens du même nerf sont très-visiblement dissemblables. Non seulement les différens systèmes nerveux, mais aussi le filet du même nerf, sortent de différens amas de substance grise placée dans divers endroits... Toutes ces particularités restent les mêmes dans les mêmes nerfs; elles doivent donc avoir

pour cause une différence primitive dans la structure intérieure, et être d'une nécessité essentielle pour la diversité des fonctions."

In our Memoir presented to the French Institute in 1808, and in our large work above mentioned, we make four principal divisions of the nervous system, and treat of them in four separate sections.

In my work, "The Physiognomical System of Drs. Gall and Spurzheim," there is a chapter on the anatomy of the nervous system. In the Second Edition, 1815, p. 13, I say: "We are of opinion that the nervous system must be divided and subdivided, and that each part of these divisions and subdivisions has its peculiar origin." I speak of the common division of the nervous system into four portions.—P. 23: "I admit a difference between the nerves of motion and those of feeling." I treat of anatomical, physiological, and pathological proofs in favour of my opinion. I positively state that "the same nervous fibres do not go to the muscles and to the skin;" and conclude (p. 25) that "the spinal marrow consists of nerves of motion and of feeling, and that the greater number of the pretended cerebral nerves belong to the nerves of motion or of feeling."

In my English work on the Anatomy of the Brain, with a General View of the Nervous System (London, 1826), the second Section, p. 23, is entitled "Division of the Masses composing the Nervous System." I positively state that a true

division of the nervous system can only rest on the nature of the functions performed. In the same Section I separate the nervous masses of vegetative life from those of phrenic life, and admit as many kinds of nerves as different offices of the particular viscera. In the third Section I contend for the difference between the nerves of voluntary motion and sensation, and found my opinion on anatomical, physiological and pathological facts; and (p. 29) I refer the reader for similar ideas to my work "The Physiognomical System," published in 1815, and to my French publication on Phrenology, in 1818. I even state that "in all my Courses of Lectures I have broached similar ideas, and have encouraged those of my auditors whom opportunity favoured to enter on the inquiry, and to endeavour to trace the nervous fibres from their peripheral expansions to their origin in the spinal cord."

These few quotations from our works are an evident refutation of Professor Bell's inexact assertions. It is quite ridiculous to hear him say that Gall had not even ascertained the difference of cerebrum and cerebellum. Dr. Gall, in considering the cerebellum as an organ of a special propensity, could not confound it with the brain proper, or cerebrum; and accordingly, in all our anatomical publications, the cerebellum is treated in a particular chapter.

Thus Mr. Charles Bell's assertions concerning

Gall are incorrect ; but supposing them to be correct, his judgment appears still very weak and inconclusive. Let us suppose, contrary to reality, that Gall and myself had confined ourselves to the brain and its subdivisions : might our observations not be exact, though we were quite ignorant of the rest of the nervous masses ? Professor Bell knows nothing of the brain, neither of its structure nor of its functions ; but can I therefore maintain that his ideas on the nerves of voluntary motion and respiration are erroneous ? He finds it difficult (p. 38) to trace the fifth pair of nerves to the corpus restiforme of the medulla oblongata, which I find easy, and which has been published in our works on the Brain since 1808 ; but am I therefore entitled to say that he does not know the functions of the same nerve ? May not the structure and functions of any part of the body be examined and known, whilst those of other parts are unknown ? Nay, may not the structure or functions of the same part be known individually and separately ? Accordingly, Gall might have discovered the functions of cerebral portions, without attending to the nerves of the spine or the rest of the body ; in the same way as Professor Bell has discovered the functions of some nerves—for instance, of the fifth pair—without knowing their origin, and without attending to the brain.

Professor Bell's self-conceit is evident ; but truth is no prerogative of any country, and the republic of letters and science is acknowledged by all liberal

minds. Since he is opposed to the importation of new doctrines into Great Britain, will he also object to his discoveries being exported to foreign countries? His animosity against Phrenology did not prevent me from mentioning his discoveries in my work on the Anatomy of the Brain.

It is my only object to show Professor Bell's erroneous accusations and envious presumption, otherwise it would be easy to criticise several of his anatomical and physiological propositions. What reason, for instance, has he to reckon the medulla oblongata with the spinal cord? Is it true that "each lateral portion of the spinal marrow contains three tracts or columns, one for voluntary motion, one for sensation, and one for the act of respiration"—(4to volume, p. 23)—and that "a fasciculus may be traced down the spinal marrow, between the sulci, which give rise to the anterior and posterior roots of the spinal nerves"? (Ibid. p. 129.) I flatter myself that the doctrine of Phrenology is founded on more solid demonstrations than Professor Bell's assertions concerning the respiratory column in the spinal marrow. I conclude with Cicero's well-known sentence—"Opinionum commenta delet dies, naturæ judicia confirmat."

G. SPURZHEIM.

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 "Opinionum commentis delictis, nature judicium
 consistit." — to entreat our countrymen and their
 countrymen to be guided by the facts and not by
 the opinions of the day.

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