

From the ACADEMY.—Nova Acta Academiæ Cæsarea Leopoldina Naturæ Curiosorum.

The following paper was then read :—

On Physio-Anthropology, its Aim and Method. By JAMES HUNT,
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I propose this evening to call the attention of the Society to a subject which no doubt will afford material for an interesting, and I trust an important, discussion. I do not intend to lay before you any new facts in relation to our science, but to invite your attention to the aim and method of one of the most important branches of it. Before, however, proceeding with this part of my subject, I must offer a few words in explanation of the term Physio-Anthropology. I shall afterwards state the reasons why I have felt it necessary to discard the words, psychology, phrenology, or cerebral physiology, which have been employed by some writers as nearly convertible terms for what is now proposed to be included in Physio-Anthropology, or the science of the functions of man as a whole, not merely a science of his parts or attributes.

Biology, or the science of life, is divided by the general consent of naturalists into two great subjects, viz., Morphology, or the doctrine of form, and Physiology, or the doctrine of function. Anthropology, too, is by general consent acknowledged to be a part of the science of Biology. This acknowledgment necessitates our considering whether anthropology be also capable of this division, for what is applicable to the greater ought to be so to the less.

Anthropology, or the science of man, has been declared by the highest scientific tribunal in the country to be a part of biological science. Anthropology being thus admitted to be a part of biological science, does it not follow that it must be treated accordingly. If Biology can be divided into the doctrine of forms and that of function, so, too, must anthropology be capable of division in the same manner; this, therefore, is my justification for the title of my paper, viz., Physio-Anthropology, or the doctrine of the functions of mankind, in opposition to physical anthropology, or the doctrine of the forms of mankind. The attention of the Society has during the last four years been mostly directed to the physical characteristics of mankind. The chaotic condition of the science of man a few years ago rendered it absolutely necessary that the errors relating to physical anthropology should be removed before we could with much profit turn our attention to the higher problem presented to us in the study of Physio-Anthropology. While, however, claiming as a justification of my title the classification adopted by the British Association, I am at the same time only ready to justify so much of the arrangement as relates to the science of anthropology being a part of the science of biology. Without a clear and well defined idea on this point, it would be utterly impossible for anthropology to make any real progress. Until we can free ourselves from the prepossession of what Professor Huxley so aptly terms "traditional prejudice" respecting the position of man in relation to the rest of organic life, we

must remember that we have not advanced beyond what Comte so fitly calls the metaphysical stage of our science. But while prepared to admit that anthropology is a part of Biology, I cannot endorse Professor Huxley's opinion that it is desirable in any scientific body to have one department for the study of form and another for that of function; this, however, is no business of ours—unless an attempt should be made to separate anthropology in a similar manner. Botanists and zoologists may be able to study form and function separately; but I contend, in anthropology, that both studies must go on at the same time; in fact, that the one must gradually lead up to the other, and that both must eventually be studied together. While, however, saying this, I ought to add that a man may be a very good physical anthropologist or anatomist without knowing anything at all about physiology. We can study forms without any reference to function; but we cannot found a science of living man without the aid of physiology.

Dr. Whewell has pointed out, in his *History of the Inductive Sciences*,* that in physiology we have a science which prepares us “for the transition from the physical to metaphysical speculation,” and that although it is concerned about material combinations, we are led “into the regions of sensation and perception, thought and will.” And here I would state, *in limine*, that we cannot, as a scientific body, attempt to pass the boundary by which all inductive sciences are confined. Our limits are the same as those of the biologists, and into the region of metaphysical speculation we must not enter.

I shall endeavour to show that too many of our modern men of science have introduced into their writings metaphysical speculation, and that if we follow their example we cannot expect to make any real progress. I shall further attempt to show that our future success in the establishment of a reliable physiology of mankind will chiefly depend on freeing our inquiries from metaphysical speculation, and entering on the field of direct observation of nature; in other words, we must be prepared, in our study of the highest division of our science, to pursue the method which has led us to such fruitful results in the lower branch, not only in one, but in every department of the science of man. Nowhere is caution on this point more necessary than in the one which we have, by long habits and the usage of centuries, been disposed to think belonged to a different class and order of inquirers. Dr. Whewell has well remarked, “in all genuine science, our knowledge becomes real and scientific, only in so far as it is verified by particular facts, and thus established in general propositions.”† It is thus only facts which admit of verification on which we can found our science.

That the time has arrived when we ought to begin in earnest to throw off the assumptions of the metaphysicians, may be perhaps shown by an extract from a recent number of a periodical which fairly expresses the opinions of educated Englishmen. It may serve also to show the tendency of public opinion outside our walls, and may inspire us with courage and determination in our future investigations; I refer to

* Vol. i, p. 317. Third edit.

† Vol. i, p. 318.

an article in the *Saturday Review* which appeared the week before last.*

“Metaphysics have indeed been long sinking into merited contempt. They are cultivated only by those who are engaged, not in action, wherein the true balance of life is maintained, but in dreaming in professorial chairs. An ambitious youth here and there goes through an attack of metaphysics, as a child goes through an attack of measles, and procures thereby an immunity from a similar disease for the rest of his life. And there are dabblers in metaphysics who remain youths for life. By the rest of mankind, whether men of the world or men of science, metaphysics are as little regarded as scholastic theology. * * * * *

“To give mental science its proper place among the positive sciences, it must be based, as they are, on the study of external nature. The external phenomena from which the laws of mind must be inductively drawn, may be classed as 1, The physiology of the nervous system. 2, The facts of the degeneration of mind, as exhibited in the different forms of idiocy and insanity. 3, The course of development, of mind as exhibited in the successive stages of the infant, the animal, and the barbarian. 4, The progress or regress of the human mind as exhibited in history. Our object should be to interest the mind in the realities which surround us, and to bring the mind into harmony with the laws of nature. The mind that is in intimate sympathy with the course of events, is strong with the strength of nature, and is developed by its force. Power is acquired by the habit of submitting the understanding to things. Natural gifts sharpened by mere logical training are not enough without a large experience of life and men.

“The very first thing necessary for the student of mental science is to form a just conception of what is meant by mind. The metaphysical conception of it, as a peculiar entity, the laws of which can be known in a way peculiar to themselves, must be discarded. Upon this abstraction, an imaginary substance, the supposed source of power and self-sufficient cause of causes, have been built all the endless and contradictory systems of philosophy.”

Although these extracts have appeared since my paper was written, I still think that they may be useful to us as indicating the opinion on this subject of the educated public, and also as showing that the views now advocated with regard to the method of our science are neither novel nor without able advocates in current general literature. When it is announced in the public prints that “the history of mankind is the history of the latest organic development of nature,” I for one rejoice at our past and look hopefully to our future.

In undertaking the duty of bringing this subject under your consideration, I am fully sensible of the gigantic difficulties of treating it in a manner its importance deserves, within the limits of a communication of this nature. My immediate object is to give an opportunity for discussing most fully and carefully what is the right method of research respecting the functions of mankind generally, and especially with regard to their mental phenomena.

* Vide *Saturday Review*, May 25, 1867.

Highly as I value facts, and willing as I am to suffer from the reproach of being loyal to them, I still consider that facts are of little service to the progress of genuine science, unless they are used properly; in other words, facts only become valuable when we have learned how to use them. I believe there is a general agreement among the Fellows of the Society, with regard to our researches into the past history of mankind, that we have adopted the right course when we have solely followed the inductive method. We may claim as an honour belonging to our Society, that we were the first public body in this country who ever attempted to apply a true Baconian method of induction to physical anthropology. It has been solely the application of this method which has given such weight to our deliberations and our deductions. Loyalty to facts with regard to physical anthropology has brought us face to face with popular assumptions, and the contest has resulted in victory to those who used the right method. Having then seen the advantage of conducting our investigations of physical anthropology according to the inductive method, the time has I think arrived when we ought to consider whether we shall do right to apply the same method to other branches of anthropology.

I should find it impossible, if I made the attempt, to overrate the importance of such a question. To change a method of scientific inquiry is to produce a revolution in science. It is impossible even to conjecture what may be the result to philosophy and social science of a change in our method of investigation.

We have, I suppose—nearly all of us in this room—been brought up in the belief that in mental philosophy or psychology it was necessary to start from some assumption—that is—if we employ an *à priori* or deductive method of research. If this be so, then psychology does not come within our domain. The question before us is, therefore, one of very great if not vital importance in the future history both of our science and our Society.

I wish to state that I am willing to be held solely responsible for any suggestions I may feel it my duty to make on this subject. I am indeed totally uninformed as to whether my views will meet with even partial assent from the Fellows of the Society generally. Profoundly interested in the progress of *bonâ fide* anthropological science in this country, I feel it my duty to make a few remarks on the present aspect of our science, because I conceive that if we do so we shall lay a good foundation for future work.

This question of method I regard as so important that I desire on the present occasion to forego the discussion of controversial points in order that our sole attention may be given to its consideration. What, then, is required, when we are invited to relinquish the deductive method for the inductive in all our investigations? What have we been fighting against during the last four years? Simply to abandon all theological, metaphysical, and *à priori* assumptions, when unsupported by observed facts. There are, for example, many men of science who plead the cause of some hypothesis with regard to man's origin, because they say "it is a good working hypothesis."

This feeling arises, no doubt, from the fact that many of the most important discoveries have been first suggested by working according to the deductive method. For this and for other reasons I therefore say most emphatically, that I do not desire or propose to open up a discussion on the question of the general merits of induction or deduction, but shall rather avoid any expression of opinion on the subject. I am willing even to allow that there are several questions in which men's minds are interested which can alone be discussed by the employment of *à priori* assumptions.

My remarks will tend to show the inapplicability of this method to anthropology in any of its departments, and are not, therefore, to be misconstrued into a general condemnation of such a method in other branches of inquiry. I propose to examine briefly the present state of physio-anthropology, in order that we may have some little idea of our present position and future requirements by examining what is our present state of positive knowledge if we deduct the assumptions of theologians, metaphysicians, philosophers, and men of science.

The first three classes employ and justify the use of the deductive methods, and to them I have nothing to say. All the world cannot but watch the war going on, not only amongst theologians of all shades and of all races, but also of metaphysicians and philosophers of every kind and degree. The prowess which each of these combatants displays against his adversary might almost tempt the man of science to enter the lists with them. But, good as may be the inclination, it must be resisted. No man of science can, as such, enter the arena of theological, metaphysical, and philosophical discussion.

By physio-anthropology I mean, not the philosophy of the human mind, but the science of the functions of mankind. Nor am I in any way disposed to put arbitrary limits to this definition other than belongs inherently to it as a pure science of induction. If we were to begin our researches by laying down some arbitrary limits to our investigations, we might exclude ourselves from discussing phenomena which might greatly assist in another branch of our science.

While, therefore, I do not condemn the use of the *à priori* method of investigation for the theologian, the metaphysician, or the psychologist, I must express my most emphatic opinion that it is entirely insufficient to build up either a mental or social science of man: it is the object and duty of the anthropologist to establish both.

A glance at the present aspect of philosophy reveals the fact that it is in a state, not only of transition, but that the condition of the whole so-called science of mind is one of very considerable confusion. The old landmarks of the schoolmen have been destroyed by internal dissension; and even at this minute the disputes of those who are looked upon as authorities sufficiently attest the viciousness of the method pursued by the respective schools.

Take, for instance, the following from one of our most recent philosophical writers, Mr. Herbert Spencer. He writes "the commonly assumed line of demarcation between reason and instinct has no existence."* Speaking of another "world old truth," as it has been

* Psychology, 1855, p. 564.

called, he says, "free-will, did it exist, would be entirely at variance with that beneficent necessity displayed in the progressive evolution of the correspondence between the organism and its environments."* I quote these remarks simply as specimens of the philosophical teaching of the present day, and to be able to protest against such dogmas and assumptions passing for science. Such teaching is the more dangerous, because it is put before the world as legitimate deduction from science. Mr. Spencer remarks that if "psychology is ever to become anything more than a mere aggregation of opinions, it can only be by the establishment of some doctrine universally agreed to;"† and that "no rational psychology can be constructed, save on the basis of some acknowledged relation between thought and the subject matter of thought—between mind and nature;"‡ and Mr. Spencer thinks that it is on these principles that a science of psychology must be erected. Mr. Spencer comes before the world with a system of philosophy, and the above statement sufficiently indicates his method. While he demands as a basis of psychology some "acknowledged relation" between "mind and nature," I ask, on the contrary, that no such acknowledged relation shall be admitted until the same is demonstrated. I do not mean to deny that there may be a "beneficent necessity" for Mr. Darwin's theory of "Natural Selection" to be true, or that Mr. Spencer is the inventor of a "rational psychology;" but I do contend that such a method cannot be the basis of a sound and logical science of man's mental phenomena.

Mr. Spencer speaks of "the unscientific reasonings of the phrenologists,"§ and yet there is, perhaps, no modern writer on psychology who has so blindly accepted the fundamental principles of phrenology as he has done. In one place|| he speaks of "the discovery of the relation subsisting between the development of the nervous system and the degree of intelligence. Originally no such relation was known to exist." Mr. Spencer accepts all the chief principles of the phrenologists, often, however, without due acknowledgment, and at the same time sneers at the conduct of physiologists for not accepting the same as "being in harmony with the course of controversies in general."¶ The only difference between the utterances of Dr. Gall and Mr. Spencer is that the one gives his opinion on the special localisation of faculties, as a man of science and observation, and the other as a dogmatic philosopher. Mr. Spencer says "localisation of function is the law of all organisation whatever; separateness of duty is universally accompanied with separateness of structure; and it would be marvellous were an exception to exist in the cerebral hemispheres."** Mr. Spencer, indeed, goes still further than Gall, or I believe any of his followers, in his application of the doctrines of phrenology to comparative anthropology. Thus Mr. Spencer writes :††—

"The corollary from the general argument that has been elaborated is, that the brain represents an infinitude of experiences received during the evolution of life in general, the most uniform and frequent

* Loc. cit. p. 620.

§ Loc. cit. p. 607.

** Loc. cit. p. 607.

† Loc. cit. p. 4.

|| Loc. cit. p. 575.

†† Loc. cit. p. 583.

‡ Loc. cit. p. 34.

¶ Loc. cit. p. 706.

of which have been successively bequeathed, principal and interest ; and have thus slowly amounted to that high intelligence which lies latent in the brain of the infant—which the infant in the course of its after life exercises and usually strengthens or further applicates, and which, with minute additions, it again bequeaths to future generations. And thus it happens that the European comes to have from twenty to thirty cubic inches more brain than the Papuan. Thus it happens that faculties, as that of music, which scarcely exist in the inferior human races, become congenital in the superior ones. Thus it happens that out of savages unable to count up to the number of their fingers, and speaking a language containing only nouns and verbs, come at length our Newtons and Shakspeares.”

Now after accepting so much of the principles of phrenology as those I have quoted, it was hardly to be expected that phrenology would be described as being of “comparative unimportance scientifically considered.”* But the climax of what appears very like absurdity is reached when it is declared that “at best phrenology can be but an appendix to psychology proper.”† However much inclined to oppose phrenology, I shall at the same time be ever ready to vindicate it from the charge of being merely an appendix of “psychology.”

Mr. Spencer, after asking “What is the meaning of the human brain ? Is it not that its immensely numerous and involved relations of parts stand for so many *established* relations among the psychical changes ?” replies, “everyone of the countless connections amongst the fibres of the cerebral masses, answers to some permanent connection of phenomena in the experience of the race.”‡ Now this is just the question which cerebral physiology has at this time to settle ; but we must found such a very important deduction on a careful series of well-established and reliable facts, and not on the *ipse dixit* of a Darwinian advocate.

I have quoted from Mr. Spencer chiefly to show that the term I have employed, physio-anthropology, differs in no essential respect from what that writer understands by human psychology generally. And here I must say a few words in explanation of the objections I entertain to the use of the words psychology and phrenology. The former is literally the doctrine of the soul, and the latter the doctrine of the mind. Now in the present state of our science we know nothing of either the soul or the mind. We only know of mental phenomena in connection with a nervous system. The asserted existence of mental phenomena independent of a nervous system of some sort has not yet been demonstrated to us, and until this has been done logical consistency and scientific exactness will compel us to discard the use of the words psychology or phrenology.

Attempts have been made by many recent writers to use the word psychology in a sense entirely different from that indicated in its derivation. Many authors in this country have employed it to indicate the philosophy or science of the human mind. Phrenology was also used to convey the same idea until it was taken up by a school

* Loc. cit. p. 609.

† Ibid.

‡ Loc. cit. p. 581.

of mental philosophers who professed to base their system on discoveries in the physiology of the brain.

If we open an ordinary book on psychology we find how different is the method I propose to that used by writers on this subject. Thus Sir George Ramsay, in his *Principles of Psychology*, says:—"The difference between Mind and Matter lies at the bottom of all psychology; and upon it is founded the distinction between the mental and the physical sciences,"* and that if we do not acknowledge this difference "we strike at the root of mental philosophy, and hence of all genuine philosophy whatsoever."†

These are, or were till lately, the views held by nearly all psychologists. Now, however, we have a section of psychologists who are prepared to surrender this "broad, deep, and sudden"‡ distinction between mind and matter, and are ready to acknowledge that intellectual and physical forces are convertible. Whether the so-called mental and physical forces of man are convertible is a question well deserving the most serious attention of the Society at some future day. I now merely wish to indicate the position of psychology with special reference to our own science.

I think there are few who on carefully examining the present state of the literature of psychology will not rise from the study convinced that it is well nigh impossible to rid the term of the metaphysical character in which nearly every writer has used it. By its origin, and by its use, it is alike condemned, and is more likely to produce than remove existing confusion. Anthropologists have, up to this time, wisely exercised a jealous care in the use of their terminology, and, although we should have found it highly convenient to be able to use a single word to express man's mental phenomena, yet I do not feel justified in proposing the adoption of the word psychology. This objection to the word psychology has been felt and expressed by many writers on the subject.

The late lamented Professor Grote well pointed out that "we must disengage psychology from the philosophy which it has mingled with itself." This union, he says, has produced "confusion of thought," and he adds, "this course will effectually ruin itself."§

Writers on psychology are especially careful to speak of it as a science: but, although they have adopted some of the theories of science, these are still, as is here well pointed out, a mixture of philosophy and science. The late Professor Grote appears to me to have had a rare insight into the present state of philosophy in this country, for he remarks, "the way is singularly open and inviting now for a good physio-psychology, as I should call it, by which, however, I mean something possibly very different from what several who have already treated that subject would mean," and later "the old vein of the philosophy of the Human Mind is worked out, and that whatever there was to be got from it, not much, I think, ever, is got already." These words coming from a professor of moral philosophy in the University

* P. 1.

† P. xii.

‡ Ramsay, loc. cit. p. 2.

§ *Exploratio Philosophica*, 1865, p. xi.

of Cambridge, may be taken as a very fair index of the present state of philosophy in this country. Professor Grote goes on to say* :—

“I have always had a very strong opinion that the later psychology or philosophy of the human mind has neglected a large province of consideration which really belonged to it, in its failing to take notice of, and to try to bring into relation with human intelligence, the various intelligences of our humbler fellow creatures in the universe, the lower animals: mind belongs to them as well as to us. Mental human anatomy, which is of two kinds, the anatomy of the body pursued as far as it can be in the direction of the mind, and the observation of the results of action of mind in connection with this—such psychology always has considered in its province, though lately it has been pursued with special fruit: we want now more of mental comparative anatomy, or the study of the varieties of animal intelligence above alluded to.”

It seems to me well nigh impossible to expect that psychology will ever free itself from the philosophy which has been mixed up with it. The word psychology will be useful to the future historian as showing that the science of anthropology has not been an exception to other sciences, and that it has not jumped directly from the theological to the positive stage. Psychology has thus, like phrenology, done good service, and we can look back on the former with gratitude as having given to the world the most rational philosophy of the human mind, and on the latter as having inaugurated a new method of research, but one which it had not the good fortune to carry out. At this minute the so-called sciences of psychology and phrenology stand before the world as hopeless failures. This is felt, not only by independent thinkers, but even by the general public, and in many cases by psychologists and phrenologists themselves.

Mr. Grote well foresaw the collapse of psychology, but he did not see that the ruin of that science necessitated the ruin of the word, or he would not have suggested for future use the term *physio-psychology*, which he defines to be “a mental and moral human anatomy, and a mental and moral comparative anatomy.” This definition, however, is just the one which belongs to *Physio-Anthropology*.

I cordially agree with Mr. Grote, however, when he says, “I do not believe that these, or either of them, can ever be pursued with good results unless the pursuers of them dismiss from their minds what I should call philosophy;”† and fully admit the advisability, not to say the necessity of this suggestion; but to strip physiological writings of their philosophical speculations is a process which cannot fail to give displeasure to those writers who, while professing to discard *à priori* assumptions, frequently make them a basis of their theories. It cannot but be a matter of great satisfaction to all anthropologists to observe how writers holding the most diverse views point out that the world must look for future direction to the branch of our science now under our consideration.

Mr. Grote only sees an escape from our present confusion, and what he calls our “getting into a hopeless perplexity” by the study of the

* *Loc. cit.* p. x.

† *Loc. cit.* p. x.

branch of our science under consideration in the first place and “the past history of the human race, both intellectual and moral or civil.”* So too M. Auguste Laugel well asks if the time has not come when philosophy can be based on the various branches of our science? He says “a higher and universal science, which includes at once the natural sciences and the historical sciences, might become the solid basis of a philosophy whose doctrines, established *à posteriori*, and not preconceived like those of the old metaphysics; this would be the resumé of all the events, of all the relations, of all the laws of which the world is at once the permanent and ephemeral expression, always old and always new.”†

On this point I cannot refrain from quoting an extract from the *Journal of Mental Science*, published at least six months before our Society came into existence. The writer therein says‡:—

“No one who takes a wide and careful survey of the present position of those sciences which immediately concern themselves with man’s moral and physical state, can fail to conclude that we stand on the very verge of discoveries of vast importance. The physiologist is daily approaching nearer and nearer to the mental philosopher, while the latter has long since found it necessary to abandon an untenable position, and to accept as the basis of his fabric the discoveries of the physiologists. Psychology and physiology are two branches of one science—anthropology; or, perhaps, it might be said that physiology, drawing, like the roots of the tree, its support from the lower ground of matter; and psychology, like the branches, spreading out into a high sphere, unite in a common trunk, and form therewith a biological unity. The pure metaphysical philosopher, who, disdainful of physical science, cultivates mental phenomena on the basis of those infallible affirmations of consciousness which almost every second person does not understand, and every third person denies; who spins systems of words out of his own mind, as the spider draws its web out of its own belly. The philosopher, who trammels the unwilling mind with the burdensome logic of the schools, and in other ways attempts violently to sever man’s intimate relationship with nature, may soon retire to that pleasant suburban retreat where, with the calm aspect of a lofty philosophical disdain, he may, in company with the megatherium and other creatures of the past, look down in undisturbed repose on an age which appreciates him not.”

Professor Bain, too, writing in 1861, says in his work on the *Study of Character*:§ “Mr. Samuel Bailey has aptly indicated the position of the present subject as a branch of the whole science of man, or anthropology.”

The opinion of Mr. Grote, that no good result can come from a mixture of philosophy and science, as found in nearly all the chief writers on psychology at the present day, becomes of the highest importance to us. I even submit that many of our recent writers on psychology, like Mr. H. Spencer, are far more dangerous foes to the progress of a genuine inductive science of man’s mental phenomena

* Loc. cit. p. xvii.

‡ Ibid. p. 213.

† *Journal of Mental Science*, vol. viii, p. 194.

§ P. 11.

than the "pure metaphysical philosopher." It may be as the *Saturday Review* some time ago remarked with regard to psychology: "Of reasoning we have already had enough to drive us mad;"* but I still contend that its influence has not been, nor is it likely to be, so prejudicial to the progress of science as the mixture of physics and metaphysics which Mr. Spencer in particular has provided for those of the British public who will consent to sit at his feet for instruction. These views may be erroneous, but what I particularly wish to point out to the society is the necessity for us to pursue an entirely different course to that adopted by the writers I have named.

We know that some few years ago anthropology had not in this country emerged from the metaphysical period of its history. An admirable illustration of what I mean will be found in the works of that much quoted author, the late learned and industrious Dr. Prichard. I have said that we know nothing of mind apart from a nervous system, and I suppose there are few who will be so bold as to controvert this proposition. Yet in the *Physical History of Mankind* we read: "The whole universe displays the most striking proofs of the existence and operation of intellect, or mind, in a state separate from organisation, and under conditions which preclude all reference to organisation. There is, therefore, at least one being or substance of that nature which we call mind separate from organised body, not only somewhere, but everywhere."

The late President of the Royal Society thought that it is very remarkable that this argument has been "so much overlooked as it has been both by the physiologists and metaphysicians." Certainly it is very remarkable that such an important "fact" should have been overlooked by both the physiologist and the metaphysician. Sir B. Brodie says: "The human mind, as it comes under our observation, is, to so great an extent, influenced by the conditions of the body, that it cannot be the proper object of study if the latter be disregarded; while the physiologist is equally wrong in regarding the mind simply as a function of the brain, overlooking the entire want of relationship between the phenomena which the mind exhibits and those presented by the material world."† As we are all seeking for the truth, it behoves us to well weigh the opinions of two such distinguished men as Dr. Prichard and Sir B. Brodie. That mind can and may exist independent of a nervous system or organisation, I am not prepared to deny.

In attempting to lay down the principles on which any science should be studied, it would be wrong and highly unscientific to declare that any phenomenon is impossible. Many may be inclined to say that the existence of life, or mind, without a nervous system, is both impossible and absurd. I grant that it may appear absurd with only our present knowledge of organisation and life as found in nature, but I hesitate to declare it impossible.

The term physio-anthropology I consider does not involve any theory, but is the only term in which we, as scientific men, have any

* *Sat. Rev.* Aug. 31, 1861.

† *Psychological Inquiries*.

right to speak of man's function. If these terms do not involve a theory, neither do they in any way warrant the denial of the possibility of mind existing independent of a nervous system. Our study hitherto has certainly been confined to the consideration of what I call different species of man, but they all have had a nervous system, and we have spoken of what at first sight appear to be the functions of that nervous system; but if we get some other species, or genus, or class, or order—a kingdom of men without nervous systems—we shall certainly be a little puzzled to know how to describe objects so strange to us. We must, however, ever keep our mind ready for the reception of new discoveries, be they ever so wonderful or discordant with our present knowledge. And here let me say that I differ most entirely from the propositions which Dr. Louis Büchner and many of his colleagues, both in Germany and this country, have laid down, viz., that the phenomenon which is known under the name of clairvoyance, for instance, is impossible. Dr. Büchner* says: "There can be no doubt that all pretended cases of clairvoyance rest upon fraud or illusion. Clairvoyance—that is, the perception of external objects without the use of the senses—is an impossibility. . . ." "There exist," he continues, "no super-sensual or supernatural things and capacities; and they never can exist, as the external conformity of the laws of nature would therefore be suspended. . . . Cases so repugnant to the laws of nature have never been acknowledged by rational unprejudiced individuals. . . . There are neither table spirits, nor any other spirits. . . . The majority of human beings think differently; they must therefore be instructed."

Dr. Büchner has, no doubt, a perfect right to attempt to give the world instruction; but I feel it right to declare that I entirely dissent from the propositions he has laid down. I contend, on the contrary, that we must, in the investigation of the highest branch of our science, be entirely prepared to examine any phenomenon connected with man in the same philosophic and scientific spirit as we examine the sutures of the skull, or the length of the heel. Dr. Büchner says, "the scientific impossibility of clairvoyance has been confirmed by an examination of the facts by sober and unprejudiced observers, and were proved to be deceptions and illusions." But are we to deny the possibility of that which failed to convince some other persons? On the contrary, we must discard all such prejudices, and be very careful how we deny the possibility of any phenomenon connected with man. The struggles of what are now admitted to be truths, should teach us a lesson of caution on this point.

To make any progress in our researches into man's nature, we shall require the greatest forbearance and consideration on the part of those who hold different shades of opinion. The only common ground which we, as a society, can offer, is the one method by which alone all such problems can be solved.

I offer no opinion at present on the phenomenon of mesmerism, nor on the still more remarkable asserted phenomenon of clairvoyance. As

* Force and Matter, p. 153. Trübner and Co.

it will be our duty to sit as judges to examine into the truth of these phenomena as well as the laws regulating them, I think we shall act wisely in reserving our opinion on them until the subject comes under our consideration in a systematic form.

I may add, as bearing on the method proposed, that I cordially agree with Sir B. Brodie, in his censure on those physiologists who regard "mind simply as the function of the brain," and also that they have no right to overlook want of relationship between mental and physical phenomena. On the contrary, we must enter on an investigation of this matter entirely free from any preconceived notion. At present we only know, as students of biology, that life is always associated with what we call organisation; that all organisms are acted on by external stimuli. If we begin the study of the lowest forms of life, we find sensation with a hardly visible system of nerves; and, as we ascend higher, we find a gradual increase of size, complexity, and probably concentration of function, which phenomena, we, as scientific men, are obliged to admit, are related to cause and effect.

While assuming, therefore, that we ought not to regard "mind simply as a function of the brain," we are at the same time compelled, by our position as a purely scientific body, to regard all intellectual phenomena as functions of the nervous system or of the entire body. How far these functions are localised, is the question to be proved, and not to be assumed.

With regard to the assumed difference between mental and physical phenomena or forces, that is a question, too, we must discuss purely on its own merits. While we have no right to ignore this difference, if it exists, we are, at the same time, not justified in assuming it.

With regard to modern phrenology, I look upon its teachings as wholly unscientific. I have no wish to say hard things of earnest men like George Combe; but cannot but express the satisfaction which I feel at the ignoble finale his teaching received. For twenty years phrenology possessed a quarterly journal, in whose pages it was reiterated *ad nauseam* that phrenology was an inductive science, based on the physiology of the brain. Had it really been so, it would have held a very different position at this day to that which it occupies actually. The answer to every criticism was, that it is an "inductive science"; and yet the first proposition put forward by phrenologists, contains one of those gigantic assumptions which must for ever estrange it from every really scientific mind. I allude to the assumption, found in nearly every one of the authors on phrenology, from Dr. Spurzheim to Mr. Charles Bray, "that the brain is the organ of the mind." Five-and-twenty years ago, an accomplished physiologist told a "scientific body", calling themselves "The Phrenological Association", that this "was mere assumption." He well said, "We boast our science is purely inductive; and yet, in the enumeration of our axioms, we assume a position all our facts tend to disprove." He goes on to say:* "It is this conjectural doctrine—this

* Phrenological Journal, vol. xv. p. 293.

belief in the individual and indivisible essence of mind—this love of the marvellous—this thirsting after something mysterious—which is retarding the progress of cerebral physiology, and, in the same ratio, the happiness of man. It is this clinging to old opinions—this disinclination to shake off old garments, which is the cause of so much doubt concerning a question so self-evident. We oppose this system by the antagonism of reason and nature. It is impossible any longer to countenance the opinion. It must be rooted up. It is like a malignant disease, which can only be cured by extermination. Let it be boldly stated, because it is here that, as philosophers, we have to deal simply and exclusively with matter.”

To attempt a refutation of such a sound position was utterly impossible; and this learned body, knowing and feeling this, performed the “happy dispatch”, and there was an end in this country to the “inductive science” of phrenology.

It is not simply our duty, but it is a part of our business, as students of a genuine inductive science, to be on the look out for assumptions. For four years I have declared, whenever I had the chance, that it was against assumptions we had to fight before we could ever begin to found a science of man. Are we justified in making the phrenologist an exception to this rule? If there are any phrenologists now living, who think that we are inclined to allow them to call their science “inductive”, when they put forward such an axiom as its basis, I warn them that they are greatly deceived. Whether “natural selection” or artificial selection has exterminated that race of phrenologists of which the amiable and zealous George Combe was the head, I know not; but can only hope that experience has taught them wisdom, and that they will not again attempt to show their childish petulance when they hear assumptions called assumptions, and treated as such.

Mr. G. H. Lewes, and Mr. Herbert Spencer, both charge the whole body of phrenologists with bigotry. The former says that they are “impatient of contradiction; they shut their eyes to difficulties; unable to accommodate their principles to the principles of philosophy, they contemptuously dismiss objections as ‘merely theoretical’, and fall back upon their ‘well established facts.’”^{*} Mr. Spencer remarks: “The crudity of their philosophy is such as may well make many, who to some extent agree with them, refrain from any avowal of their agreement; more especially when they are met by so great unwillingness to listen to any criticisms on the detailed scheme rashly promulgated, and finally settled.”[†]

In quoting these remarks, I would by no means be understood to endorse the opinions of these authors. Whether phrenology was rashly promulgated, is a question which in no way affects us. My desire on this occasion, is to give the reasons why we, as a scientific body, cannot accept any of the various systems of phrenology as a basis for our future investigations.

My only object in bringing the subject of phrenology forward in this prominent manner, is to show that phrenology is not what it is

* History of Philosophy, p. 640.

† Psychology, p. 609.

claimed to be by so many of its disciples—purely a science of observation and induction. In doing this, however, I shall avoid as much as I possibly can saying one word which can give offence to any phrenologist. On the contrary, I would especially invite all the disciples of Gall to unite with us in endeavouring to found a science on the very method originally employed by that great man. We are a young society, and at present we are in no way identified with those parties who have made constant and bitter attacks on phrenologists. As far as I am concerned, I frankly confess that I look upon phrenology with the same kind of respect as I do on ethnology or psychology—as defunct sciences, out of which modern scientific anthropology has been developed. It was as necessary that ethnology, or crude speculations respecting physical anthropology, or equally crude speculations of psychology and phrenology, should precede inductive anthropology, as it was necessary that astrology should have come before astronomy, or alchemy before chemistry. Such, too, is the power of “inherited experience”, that it is possible there may be traces of these embryo sciences a century hence, just as there are still a few who put more faith in astrology than they do in scientific astronomy.

With regard, however, to Dr. Gall, I would desire to speak of him in the very highest terms of commendation. My own estimate of the value of Dr. Gall’s services to inductive science is as great as that of any modern phrenologist. All I have read of the early researches of Dr. Gall, lead me to the belief that, whatever may be the defects of phrenology as a system of psychology, yet he laid down the right method of investigation in his earliest researches. Up to a certain time in his investigations, he proceeded solely on observation and comparison—just as we shall have to do again at this day. I most cordially agree with Mr. G. H. Lewes, when he says: “The day for ridiculing Gall has gone by. Every impartial competent thinker, whether accepting or rejecting phrenology, is aware of the immense services Gall has rendered to physiology and psychology, both by his valuable discoveries, and by his bold, if questionable, hypotheses. He revolutionised physiology by his method of dissecting the brain, and by his bold assignment of definite functions to definite organs.”*

There can be, I think, little doubt that Gall, in his early days at least, set an example of research and observation which we shall do well to follow. His influence on philosophy has been felt more than it has been acknowledged. Had he kept to his early method of observation and comparison, psychology would at this day doubtless be in a far more advanced state than it is. For twenty years Dr. Gall conducted his researches in a manner worthy of all possible praise.

However low the position of phrenology may be in the estimation of the public at the present time, there is at least some consolation for its supporters that, although they have failed they have done good, and that we do not hear their labours spoken of as they were half a century ago. The following passage from the *Edinburgh Review*, of April, 1815, will sufficiently indicate the advance that has been made.

* History of Philosophy, p. 632.

“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 misstatements, and unmeaning quotations of 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.”

Sixty-seven years ago, after Dr. Gall had studied the question for upwards of twenty years, and some few years after he had begun to make public his researches and observations, he obtained what Mr. Lewes and most other writers call “his best disciple.” Mr. Lewes also says, “Probably Spurzheim’s assistance came at the right moment, to rectify many of the hazardous psychological statements, and to marshal the facts in better order.”* I confess I hold just the opposite opinion. I think that Spurzheim’s assistance was the ruin of Dr. Gall’s scientific researches. It is a little singular that if Spurzheim rectified Gall’s psychological statements, phrenology should be described by Mr. Lewes to be at present “in so chaotic and untenable a position with respect to its basis as to need thorough revision.”†

Dr. Spurzheim was a man of the most undoubted talent and earnestness. But, as far as I am able to estimate his influence on Gall’s labours, it was most pernicious to science. Gall studied the subject for twenty years before he developed the results of his observations in a series of lectures. Spurzheim then joins him, and it is at this time that a system of psychology was founded on these observations. Spurzheim seemed to have that faculty which is so pernicious in scientific investigations, viz., the habit of building up systems and making everything complete ; in other words, of introducing philosophy into science. I look, therefore, on Dr. Gall’s observations as of the highest value to science, and his generalisation on the subject is entitled to our best and most serious consideration ; but I contend that the system of mental science now known under the name of phrenology, is nothing more than a system of philosophy, and as such doomed to absorption by science. The very perfection as a philosophic system to which phrenology has been brought is to us its greatest evil. This it owes chiefly to Spurzheim, who is answerable for its collapse.

I must here, however, remark, that neither Dr. Gall, nor even Dr. Spurzheim, in their earliest writings used the word phrenology. I believe Dr. Gall never used the word at all. And when Dr. Spurzheim first brought Dr. Gall’s researches before the British public, he also never used the word. No unbiassed person can, I think, compare the work of Dr. Spurzheim, entitled, the *Physiognomical System of Drs. Gall and Spurzheim, founded on Anatomical and Physiological Examination of the Nervous System in General, and the Brain in Particular, and indicating the Manifestations of the Mind*, published in 1815, with his work entitled, *Phrenology, or the Doctrine of the Mind, and of the Relations between its Manifestations and the Body*, published

* History of Philosophy, p. 631.

† Loc. cit. p. 644.

a few years later, without seeing how much less dogmatic this system was at its outset than in its after development.

In the work published in 1815 we find that their system was then spoken of synonymously with the physiology of the brain, as in the following sentence,* “It is of great importance to consider the heads of different nations. Several anatomists and physiologists have, accordingly, endeavoured to point out the particular shape of their heads, and though all the observations of this kind which have been made are very defective, they are yet rather in favour of, than in opposition to, the physiology of the brain.”

At another place he says,† “We accordingly flatter ourselves that every one who, without prejudice, may take the trouble to examine and repeat our observations, will be convinced of the solidity of these principles of the physiology of the brain.” But this love of system-making soon induced Spurzheim to use the word phrenology. He says, “I have chosen it (phrenology) to designate the doctrine of the special faculties of the mind, and of the relation between their manifestations and the body—particularly of the brain.”‡ In other words, phrenology thus defined, means a system of philosophy based on the assumption of special faculties belonging to something else which is assumed to exist, but of which we know nothing. Mind is only known to us as an occasional phenomenon of life. In 1815 Spurzheim remarked, “The metaphysical notions of the schools have greatly impeded the improvement of anthropology. By the substitution of such metaphysical opinions for data furnished by the observation of nature, physiologists, and even anatomists, have regarded their opinions as sacred.”§ In his work on phrenology he himself became a metaphysician, and speaks of the necessity for a “particular organ for every faculty being pointed out.”|| This remark was no doubt intended as a justification of Dr. Spurzheim’s mode of procedure. He says in the same work, “The essential nature of the faculties is that which must be determined; and here I differ from Dr. Gall entirely.”¶

I therefore entirely separate Dr. Gall’s observations from Dr. Spurzheim’s reasonings on the same. Not wishing to enter into the question of the merits of Dr. Spurzheim’s system and reasoning, I am only now concerned to show that his mode of procedure differed essentially from that of Dr. Gall, who, as his opponent alleged, “followed an empirical method.”**

My estimate, then, of Dr. Spurzheim, is far lower than that of his former colleague, Dr. Gall, more on account of his method than from anything else. It is in his later works that I find the objectionable characteristics above mentioned; on the contrary, the first work published in this country is one of the greatest interest to the physiological anthropologist, because here the true basis of the science is indicated. He there well says, “We must acknowledge that, without the physiology of the nervous system, there would be neither

* P. 268.

§ P. 6.

** Loc. cit. p. 126.

† P. 271.

|| Phrenology, p. 125.

‡ Phrenology, p. 1.

¶ Loc. cit. p. 124.

psychology nor any species of philosophy ; and that it is impossible to find any object of greater importance than this, and more durably interesting to philosophers, physicians, moralists, teachers, judges, and legislators.”*

He saw, too, some of the causes why we had not been able before that time to found a rational and durable psychology, and his remarks are of intense interest to the modern anthropologist, for it is he who has realised the desideratum of the last two thousand years. Dr. Spurzheim pointed out what I believe are three causes for the past stationary state of anthropology. He says :—

“ There exist even at this day philosophers, who maintain that man is not at all subjected to the laws of nature ; that, independently of all causes and motives, he may originate a series of actions, and that his functions do not admit of any explanation. According to this hypothesis, man is separated from all other beings ; he is considered as a being entirely regulated by laws peculiar to himself. These schoolmen attribute all the operations of man to the soul : several of them even give to it an unbounded power over the body. This failure to compare man with other beings has been a great obstacle to the progress of psychology.—Moreover, the various branches of anthropology, instead of being united, are cultivated separately. The useful example of the Greek philosophers is neglected. Anatomy, physiology, medicine, philosophy, education, religion, and legislation, instead of uniting their mutual influence, constitute so many particular doctrines or sciences.”†

This doctrine of the schoolmen respecting the influence of the mind over the body has found its way even into the works of some of our best modern scientific men, where we should not at all expect to find it. Even in the works of so distinguished a geologist as Sir Charles Lyell we find traces of this influence ; for he concludes his work on the antiquity of man by telling the world that progressive development “ presents us with a picture of the ever-increasing dominion of mind over matter.”‡ Another distinguished geologist, after speaking of “ the instincts of the brute,” and “ the noble mind of man,” asks, “ At what point of his progressive improvement did man acquire the spiritual part of his being, and become endowed with the awful attribute of immortality?”§

I have no doubt that some distinguished anthropologists might write equal nonsense respecting the origin of geological strata, and might show, to their own satisfaction at least, that the different strata are totally unconnected. Nothing can better show the absurdity of the geologist writing on anthropology, than the absurdities which are evolved when an anthropologist promulgates theories respecting geology.

But what shall we say when we find a professor of physiology in the University of Oxford advocating Darwinism on the plea that the mind plays the first and not the second part in progressive development ? The failure to compare man with the rest of organised

* Physiognomical System, p. 10.

† Ibid. p. 7.

‡ Lyell, 1st ed., 506.

§ Frazer's Mag., July 1860, p. 88.

beings has also been one great cause of the stationary character of psychology.

The last cause assigned for the stationary state of psychology up to 1815 was, "that the various branches of anthropology, instead of being united, are cultivated separately." Half a century elapsed before any practical remedy was found for this last cause for the stationary position of psychology. The especial object of our Society was to unite those sciences which were necessary for a science of man. Without this union our deductions would only have had a partial value scientifically considered. Now, our science is of that catholic nature, that it is not only our right, but our duty, to call in the aid of every branch of inquiry likely to aid us.

The first obstacle pointed out, we have seen, was gratuitous assumption; from this we must be free for the future; the second was the neglect of comparative physiology. Our association with the biologists in the British Association, I hope, may be the means of inducing many anthropologists to keep themselves informed with regard to the latest results of inquiries respecting organisation and life. The third and last reason of the separation of the various branches of anthropology has no longer any existence, and hence all the causes pointed out by Dr. Spurzheim in 1815, are now finally removed.

While, however, I differ so much with the manner in which phrenology has been propagated, I willingly give place to the encomium passed on it by so impartial a writer as Mr. Lewes, who declared "that doctrine may now be said to be the only psychological one which counts any considerable mass of adherents."*

I desire to call on the disciples of Gall to join with us in endeavouring to build up a mental science founded on such a careful series of facts as shall not simply invite but shall demand acceptance from all fully developed educated Europeans.

Phrenologists must all confess that the present state of their science is unsatisfactory. Mr. J. W. Jackson has recently well remarked, phrenology has failed to keep pace with the progress of the age, and that "if we do not expand it, its doom is sealed. We must march with the age or consent to be trodden under foot by those more progressive than ourselves." And he adds, "although during more than twenty years a convert to the doctrine of specialisation in cerebral function, I am far from regarding phrenology as perfect, or its present teachings as final."† These words by one of the most eminent living disciples of Gall are a sufficient reply to the charges of bigotry made against phrenologists as a body by Mr. Herbert Spencer and other philosophers.

The spirit which Mr. Jackson has shown in this matter is one which I think eminently worthy of being followed by all other phrenologists. That such may be the case I heartily hope, for I should be sorry indeed, if their conduct in this matter were to justify the censure passed on them by the writers before named. Nor is it our wish to tread

* History of Philosophy, p. 628.

† Anthropological Review, No. xvi, p. 78.

phrenologists under foot. I, for one, desire, on the contrary, to be able to use the great mass of facts, together with the experience of phrenologists. As inductive anthropologists, we are bound to study man's intellectual phenomena. We know and frankly acknowledge that without an exact knowledge of both cerebral physiology and the physiology of the nervous system generally, we cannot establish a reliable science of anthropology. Being then fully sensible of the vast importance of cerebral physiology in our researches, I feel it my duty to resent with some indignation the charge which our colleague, Mr. Jackson, in his capacity of phrenologist, has made against us anthropologists. Mr. Jackson, speaking of the duties of the phrenologist, says* :—

“It is his humble vocation to supply the facts of cerebral physiology, for which, let me warn him, he will at first receive but slender thanks. He must be contented to wait in faith and patience for the recognition of his services. He must submit to be treated with indifference, if not contempt, by men who are ignorant of the very elements of his science, and who could not practically wield the simplest of its resources.”

I take upon myself to deny the charges here made. I do not think that this Society as a body is at all likely to treat with indifference or contempt any of “the facts of cerebral physiology.” If there be any man in this Society who is fairly open to the attack made by Mr. Jackson, I can only say that I entirely differ from him. I hope and trust that such a person does not exist in our ranks; and, at all events submit that such accusations should not be brought against anthropologists as a body, until they have shown by their conduct that such a very serious charge is justified. To affirm that we treat such facts with “indifference” or “contempt” is, I hold, to be as absurd as it is false. If at any future time any “facts of cerebral physiology” should be ignored in the manner here indicated I should be willing to join with Mr. Jackson in a strong condemnation of such conduct. It is our bounden duty as scientific men to accept facts without the slightest consideration of the quarter whence they come, and to accept them gratefully. But it is not our duty to accept dogmas or theories as facts. Still less is it our duty to erect elaborate theories on a few isolated facts. The range of facts on which phrenologists have built up an elaborate system of philosophy was too small to solve the problem which they attempted. A real science of Man must not be founded on the functions of any one organ in the body, however important that organ may be. A truly scientific anthropology can only be based on the functions of the whole nervous system, perhaps even of the entire body, and must have for its foundation comparative physiology and comparative anthropology. The importance of cerebral physiology in both these branches can scarcely be over estimated.

Even to suppose that we, a scientific body, could be indifferent to any of the discovered facts of cerebral physiology is an indignity which

* *Loc. cit.*

I would resent in the strongest possible language. To suggest that we should come here night after night to look at crania, and to have for our sole object the investigation of the state of their sutures or their cephalic index, I willingly admit is quite monstrous. But when it is known that this study of the capacity, length or breadth, or state of sutures is a part of our science, then this attention to such details is as praiseworthy as it is necessary. To pretend that we could build up a science of man without investigating the function of the nervous system can only have suggested itself to those who are totally unacquainted with the scope and objects of such a study. All anthropologists know well enough that we cannot build up a science of anthropology without knowing the functions of the brain, and to suppose that we should wilfully ignore the facts of cerebral physiology is to suppose that we are either totally ignorant of the scope and objects of our science, or that we are wilfully dishonest.

To the masses of mankind a skull may always be a skull, and nothing more ; but by the anthropologist it is looked on with very different feelings. The skull is a part of man ; and as such we try to find out what we can learn from it. We collect these skulls, describe them, and compare them, not surely for amusement, but for instruction ; to assist us, in fact, to build up a science of man. Now a science of man, as I understand it, is a science built up on facts concerning humanity, which must be neither few nor incapable of verification.

To charge us with desiring to ignore the facts of cerebral physiology I hold to be as false, as it is true to say that we ignore the dogmas of the phrenologist. This confusion arises from the error into which many phrenological writers have fallen in making phrenology and cerebral physiology convertible terms. That phrenology is by its nature nothing more than a system or theory of cerebral physiology, may or may not be true ; but, in its present state, we cannot accept it as men of science. In this respect, our attitude to the theologian and the phrenologist must be exactly the same. Our science can alone be founded on facts, and what facts of cerebral physiology have we ignored, or even received with slender thanks ? I am not even aware that a single fact of cerebral physiology has been brought under our consideration for investigation ; and if such be the case it is little to be wondered that our thanks have been slender. Some Fellows of the Society may be disposed to complain that although we have existed for four years we have never yet investigated these facts. The answer is simple, because these facts of cerebral physiology have never yet been brought under our consideration. Let the possessors of any facts relating to cerebral physiology bring them before us, and we shall, I doubt not, receive them with respect and grateful thanks.

Anthropologists are only grateful for what they receive, and not for what people promise them, or tell them they believe. If, therefore, a phrenologist has observed any facts which throw light on the functions of the brain, I hope he will be induced to lay the same before us in such a manner as our attention shall solely be directed, in the first place, to the facts observed ; so that we might be quite

certain that they are neither few nor uncertain before we begin to theorise on the subject. But while I say we are ready to discuss both observation and theories, we are not bound to discuss the truth of any system of psychology. As a scientific body we know nothing of any system of psychology, nor is it our business to discuss their relative merits. While, therefore, we are speaking of the "method" of physio-anthropology, perhaps I cannot do better than point out very plainly the difficulties which have beset the discussion of cerebral physiology in other scientific bodies.

At a late meeting of the British Association a paper was read to prove that the brain was contained within the skull, and although some objections were indicated—that occasionally there were exceptions—the position of the author on this point was considered as established. The rest of the paper chiefly dwelt on what the author believed respecting the existence of mind, and that the brain was "the material organ of the mind." Now this language respecting the brain being the material organ of the mind is too frequently the language used even by men of science. With philosophers such an assumption of the existence of mind and its residence in some organ or organs of body is allowable, but men of science can know of mind only as a phenomenon, and however true the independent existence of mind may be, we cannot be truly scientific men and yet speak of the brain as the organ of something of which we can know nothing. I do not deny the possibility or even the probability of the existence of mind independent of matter; but to assume that the brain is the organ of the mind is to beg the whole question under discussion. We must, however, remember, that phrenological doctrines are now put before the world in a very different form to what they were by Gall, or even Spurzheim. They both declared that they only studied phenomena; and, doing so, they had no right to express any opinion respecting the nature of either mind or matter. Different language, however, is held by some of the most esteemed modern phrenologists; and, I mention them, because they have been brought before bodies that profess to be scientific.

A very good instance of the assumption to which I have alluded is to be found in a paper by an esteemed and old friend of my own—Mr. Robert Dunn, one of the Vice-Presidents of the Ethnological Society, and submitted by that society to Section E of the British Association at Birmingham. His first postulate is, "That the brain or the encephalon is the *material* organ of the mind; in other words, that the vesicular matter of the encephalic ganglia is the *material substratum* through which all psychological phenomena of whatever kind, and among all the races of mankind, are manifested in this life."*

Truly such assertions are to us revelations indeed. How happy and fortunate Mr. Dunn must be to know so much of the nature of mind, and that all "psychical phenomena of whatever kind" are connected with the brain. From these remarks, however, we are led to conclude, that the mind only acts through the brain in this life,

* Transactions of Eth. Soc., vol. iv, new series, p. 13.

and that the psychical phenomena observed in the animal kingdom of animals without brains, show that such animals are not in this life! In the same paper, Mr. Dunn informs the world "that the *Homo* is one, and that all the races of the great family of man are endowed with the same intuitions—sensational, perceptive, and intellectual—the same mental activities."*

Before the same society there was also, some three years ago, a paper read by another member of that society, entitled, "Physiognomy, Popular and Scientific." This curiosity in modern scientific literature, with the discussion thereon, has since been printed, and the following extracts will better explain its style than any description of mine. Dr. Donovan, the author of this paper, read before the Ethnological Society,† on May 24th, 1864, thus speaks of those who do not accept the dogmas or theories of the phrenologist: "These I deem to be of two classes, the lamentable and the contemptible." Under the lamentable class he grouped all scientific men who were not phrenologists; and the second class he described "as mere Lilliputian pinstickers, not worth naming."

And here, I contend that justice compels us to be very careful in speaking of phrenologists as a body of men who hold the same views. The landmarks which were originally laid down by Dr. Gall were never kept to, and the consequence was, that instead of investigations going on as to the functions of the nervous system in general, and the brain in particular, we had a really scientific subject degraded to one of mere philosophy. In the second number of the *Phrenological Journal* we read, "Phrenology, being a system of philosophy founded on the discovery of the functions of the different parts of the brain;"‡ and in another passage it is spoken of as "a system of mental philosophy.§" My only wonder, then, on looking back at the history of phrenology is, that it gained as much attention as it did. It was, in fact, only by ignorantly distorting the logical deductions of Gall's discoveries, that Mr. Combe and his followers could put forward as one of the claims of this new system of philosophy, "that it is perfectly consistent with the freedom of human actions—that it tends to a very highly-improved moral economy—and that it is beautifully in harmony with the precepts of our Holy Faith."|| Those words are taken from the introductory statement, but as I do not know the writer, I am equally uninformed as to what faith is here alluded to. The singular fact remains, however, that phrenology, like other systems of philosophy, had its day, and the time was when, in the meetings of that learned body, the Phrenological Association, if any one got up and questioned any of the doctrines of this "mental philosophy," the indignation of Mr. Combe was greatly roused. In one meeting, one of the most distinguished followers of Dr. Gall, one of the authors of *Man's Nature and Development*, ventured to suggest that phrenology was still—this was in 1841—in "a very imperfect state, and that we have yet many difficulties to contend with, the science being in the

* Vide Transactions of Ethnological Society, vol. iv.

† See published paper, p. 14.

‡ P. 166.

§ Ibid. p. 192.

|| Phrenological Journal, No. i, p. 31.

very infancy of its existence. There was not," said he, "a single organ, the functions of which have yet been correctly ascertained and described;" and he warned those who were in the habit of manipulating heads "to be more cautious in predicting character."* These remarks called down on their author the severe condemnation of Mr. George Combe. The "statement that phrenology is still in the infancy of its existence," ought not, said he, "to go forth without explanation." To tax the disciples of Gall, as a class, with bigotry, is, I maintain, eminently unjust, and the following extract from the valuable writings of Mr. H. G. Atkinson is a sufficient refutation of such a general charge. In the fourth letter of his correspondence with Miss Martineau,† I find the following remarks:—

"I found phrenologists to be, for the most part, ignorant of anatomy and of the labours of philosophers, and resting with the same confidence and presumption on their thirty or forty organs as some others do upon their thirty-nine articles of faith. I am not at all surprised, therefore, at the reception phrenology has met with from the scientific world, for it was easy to reject the whole where there was really so much error. Phrenologists were dogmatising and fortune-telling with strange incaution, and disgusting people by their presumption and blundering, while the subject was yet in its infancy, and all were professors, and few were students, at the very commencement of the inquiry. But there are difficulties and imperfections and errors in all sciences, and over-confidence and hardy theorising and system-making; but when, as Bacon wisely says, men dogmatise and lay down the principles of a science in its infancy with a show of completeness, it may add to the glory of the professor, but will not leave the science in a state of growth. Phrenology has been a glaring instance of the evil of making too great a show of exactness and method."

These words, written sixteen years ago, are still pregnant with interest and a warning to us at this day. The same love of system-making, the same desire of theorising to suit our race instincts or prejudices, exists at this day nearly as much as ever. It is when men leave off this desire to form philosophies and disseminate systems, that they will leave off the garb of professors and teachers, and become simply students and learners of nature as it is, and with no wish or desire to attempt to describe it other than it is. We cannot be too careful in laying down a solid foundation for our future. The history of phrenology is a warning to us in this respect. After twenty years of labour, we find one party of phrenologists telling the people of Boston, U.S., that "in Britain we cherish Spurzheim's memory with the deepest reverence and fondest affection;" that "he came like a messenger from heaven to make known to us this new philosophy," and that the gradual advance in civilisation in this country was due to the influence of our "enlightened, philanthropic, and philosophical press;" for Combe adds, "the journals of the largest circulation and most extensive influence in my native country are

* Phrenological Journal, No. lxvi, p. 60.

† P. 23.

conducted by followers of Dr. Spurzheim." The same blind enthusiast told his American hearers that in France and Britain phrenology "already directs lunatic asylums, it presides over education, it mitigates the severity of the criminal law, it assuages religious animosities, it guides the historian, it is the beacon-light to the physiologist."^{*}

While one section of phrenologists were making the foregoing wonderful statements as to the bearing of their science, another party declared that the mass of phrenologists "either cannot follow out the consequences of their own doctrine, or they have not the honesty or the courage to avow them;"[†] and a distinguished physiologist—the late Dr. Engledue—asked his brother phrenologists if they would continue to employ themselves "in pandering to the tastes, fancies, prejudices, antique theories, and visionary speculations of their generation."

Thus we see before us two parties of phrenologists holding entirely different views as to the bearing of that "new philosophy." How pregnant with warning to us is all this dispute and recrimination between phrenologists! But the discussion with which phrenologists ended their labours was the one in which we began our own. Facts and logical deductions from the same we all agree in declaring to be the sole basis of our science. Here all shades of opinion on other subjects are united. Nor, I hope, shall we now be tempted to discuss what may be the tendency of philosophy, religion or politics on some future science of physio-anthropology. That such a science will some day exist, we, as true and loyal anthropologists, are all bound to believe; but it will be both useless and derogatory to us, as a scientific body, to waste time on a discussion as to the influence of this embryonic and hypothetical science in human affairs and belief. We put forward as a claim for our researches, that we are merely and solely faithful students and interpreters of nature. We must do for science what is attempted to be done for art—get rid of mannerisms, and paint things as they are, neither better nor worse. "Follow nature" is as much a fundamental rule in science as in art. Mr. Atkinson well advises on this point. He says, "Let us not assume anything; thus may we lay hold of the science of human nature; and till we recognise this science we live in a barbarous and dark age, and have no health in us."[‡] I cordially agree with these sentiments. Let us rejoice that our science—the science of human nature—is just appearing to shed its light, and thus put an end to the age of darkness.

But while fully enjoying the pleasure afforded by our situation, we must still check our natural impatience to declare that we have a new philosophy to offer the world. On the contrary, let us acknowledge and proclaim at once that we have not, and never shall have, any philosophy to offer the world. Our object, on the contrary, is to build up a science—a purely inductive science—which shall, from its nature, never be fixed, and consequently never perfect.

^{*} Phrenological Journal, vol. xv, p. 210.

[†] *Ibid.* p. 273.

[‡] *Loc. cit.* p. 10.

The science of anthropology—or the science of human nature—must vary with the variations of human nature itself. The anthropology of one age may not, therefore be applicable to an age of entirely different physical conditions.

And herein lie my reasons for inviting your attention to the subject of the functions of mankind. The study of a man's form of skull or skeleton or other remains can go on without taking any cognisance of his functions. Physio-Anthropology is thus the science of living man, and is capable of numberless sub-divisions, each of which being well worthy to form the subject of special treatment.

I have treated the subject of Physio-Anthropology as though it were more synonymous with psychology, phrenology, cerebral physiology, pneumo-psychology, neuro-psychology, or pneumatology. But Physio-Anthropology really means something more than any of these. I think it is fortunate that it does so, and for this reason:—What right have we to start with the assumption that the functions of the brain or even the nervous system can give us a clue to the whole of man's mental phenomena? We can and ought to study man both objectively and subjectively. Hitherto the science of man's mental phenomena has been chiefly based on what are called the facts of his consciousness. We can still make our own reflection on the relations between our bodies and our intellectual phenomena and feelings, and of their mutual relation and influence. To build up a science of man we do not merely want to know the functions solely of any one part of the body, even if it is the most important, or the jewel of the whole body.

It is here that every individual Fellow of the Society has it in his power to render service to the science under consideration by the observation of, and reflection on the influence which, any derangement of the different organs may have on his nervous system, as well as the effects of cosmical disturbances on the same.

We can readily understand why philosophers like J. S. Mill still cling to philosophy for a solution of the world's problems. The fact is, that the method of philosophy in settling all questions, is so very much more easy than that of direct observation of nature, systematically accumulated, and laborious collection of facts, continued with patience in drawing conclusions, that there will be some men who will always prefer to build up a philosophy on brilliant fallacies and eloquent reasoning to going through all the drudgery of a real scientific method.

To build up a satisfactory science of Physio-Anthropology there is required on our part the most self-denying patience. The subject is so vast and important that our observations must be extended to thousands of instances before we lay down any really positive conclusions. We must remember that all premature theories do positive injury to the progress of science. We have not simply to endeavour to found a science of Physio-Anthropology, the details of which will be suitable to all species of man. We have good reason both to hope and expect that the study of Comparative Physical, and Physio-Anthropology will greatly assist us in our labours. Here indeed we have a magnificent field of inquiry which has barely yet been at all

investigated. What, for instance, is the significance of the fact that the brain of the Bushwoman, who exhibited few signs of mental difference from the rest of her species, would, if the same had been found in the European species, have been declared by M. Gratiolet to be the brain of an idiot?

Idiocy, insanity, and pathology in all races and species must also lend their assistance to us in discovering the laws regulating man's mental phenomena. As we want to know the whole truth, and not merely a part of the truth, we must draw our facts from every source from which we can attain them.

Mr. Atkinson has remarked that "It remains for philosophers to place physiology and mental and moral philosophy in the same position as positive science reached by induction. The delusions of ignorance and superstition are doubtless inveterate, and will not yield without a struggle and a spasm; but progress is a law of nature; and to remain where we are, were it possible, would be convulsion and ruin."*

I readily admit that the present state of Physio-Anthropology is in the most unsatisfactory condition; but do not see that philosophers are likely to extricate us from the net in which they have entangled themselves and the rest of the world.

We must, no doubt, be prepared to encounter gigantic difficulties in nearly every step of our inquiries. Mr. Atkinson further tells us that "Men have no faith in truth; but will uphold error, believing it to be necessary as a kind of police force," and that "government, the press, scientific men and all are prostrate slaves before old wives' fables, far too silly for a nursery tale."† Now, as a student of science, I must enter my protest against this sweeping condemnation of men of science.

All these things, we are told, are to disappear from the world "when the philosophy of man has become recognised as a true science based wholly upon natural causes." This has at last nearly come to pass, and we shall do well to give a most patient and considerate hearing to the man who was one of the first in this country to recognise the importance and, indeed necessity, for a scientific study of man. The following opinion‡ of Mr. Atkinson as to general physiological research is deserving of our most serious attention:—

"It appears to me that men, for the most part, have no clear notion of the nature of science, or of the laws of action and thought; but nature in general, and the nature of man in particular, seems to them to be a species of conjuring. But the true physiologist studies the laws of matter, and the whole process of development, disentangling himself from all spiritual and metaphysical dogmas, and will take into consideration all the circumstances which influence the man from childhood to the grave."

With regard to our future inquiries, there may be some inclined to ask who is to be our guide in the labyrinth of phenomena presented to us in the physiology of mankind.

* Loc. cit. p. 207.

† Loc. cit. p. 210.

‡ Loc. cit. p. 201.

Now in science I must confess that I entertain but small respect for the opinion of those who are considered authorities. A science becomes stationary when one man's opinions are quoted in opposition to newly discovered facts.

The phrenologists, we have seen, venerated Gall and Spurzheim too much ever to make the slightest advance with researches into the functions of the nervous system.

It is not a little strange that those who are thus inclined to make Gall a hero, are, at the same time, disinclined to acknowledge what his opinions really were. In one of Gall's earliest writings on the functions of the brain, his letter to Baron Retzer, which was printed in 1798, is found the following passage:—"Strictly speaking, you only play the part of puppets in a show: when certain cerebral organs are put in action, you are led, according to their seat, to take certain positions, as though you were drawn by a wire, so that one can discover the seat of the acting organs by the motions." We cannot read such a passage, written before Gall got into controversy with the powers that be, without wondering at the difference between Gall's idea after hearing of his discourse on the "Functions of the Brain," and the "new philosophy" known to the world as "phrenology." Leaving the merit of Gall's discoveries concerning the functions of the brain *sub judice*, is it not high time that the name of Gall, as a man of science, should be recovered from the mass of *débris* with which it is now associated?

If Gall's asserted discoveries as to the functions of the brain are correct, there is no doubt that his name will go down to posterity as perhaps the greatest discoverer, as well as benefactor to mankind, that the world ever saw. If, I repeat, his asserted discoveries are true, and if even they should be only partially true, no honour can be too great for such a man's memory. Whether his discoveries will be verified, or indeed any part of them, is a question on which I offer no opinion. If his views are correct there will no doubt be, as he says, "the most important consequences resulting therefrom to medicine, morality, education, and legislation."† With these consequences we are happily not concerned. Our sole business is to examine step by step the discoveries which have been made into the physiology of man, and especially of his nervous system and brain. The mere authority of great names will avail us nothing, and we must be simply and solely guided by the facts.

No good either can result in discussing the tendency of scientific inquiries or discoveries in philosophy or ethics. The time has long since gone by for the real man of science to trouble himself with the question whether his researches lead to materialism or idealism, or indeed any other ism. These futile discussions now, I believe, only take place north of the Tweed, or amongst those whose "inherited experience," or (as I prefer to call it) "race characteristics," do not enable them to see the true position and dignity of scientific inquiry.

Agreement as to the facts is more easily obtained than unanimity as to the application of them. Thus, while Gall thought his discoveries

* Works of Gall, American ed., p. 17.

† Works, p. 7.

showed "why lasting peace among men will be always but a dream,"* his professed English pupil taught that the recognition of these principles would soon bring about a universal brotherhood. We shall, therefore, do well to confine our attention to the facts themselves before we either begin to theorise about them, or speculate as to their bearings on other branches of knowledge.

Feeling, therefore, that guides in science are calculated to mislead, it is perhaps fortunate that there is no ancient, or indeed, modern writer, who fulfils the conditions I have herein laid down, and which I contend must be the basis of our future method of research.

The admirable work of Professor Laycock, on one portion of our science, which he has called the *Mind and Brain*,† is in most respects entitled to the very highest commendation; he is not a teacher to be followed blindly in his deductions; "That whereas mind designs, life is designed;" "Mind is a final cause;"‡ "that mind is dominant over matter;" and some other metaphysical propositions. Professor Laycock stands forth, however, in bold relief, from most of his compeers in this country, and is doing good work by his earnest and zealous advocacy of a more rational system of research in physiology. He has done what so few writers on this subject have done, that is, clearly laid down the position that "mind and its laws can only be known through the phenomena of life and its laws," and well adds, "its study as an applied science can only be followed according to the method pursued in the study and application of the other applied sciences."§

Professor Laycock says "mental science," and I say Physio-Anthropology "is the chemistry of human nature;" but we both mean very much the same thing.

I have quoted with some approval from Mr. Atkinson, who has the credit of being one of the first to see clearly and proclaim to the world that the science of man, or of human nature, was the one which could alone solve some metaphysical problems. But while quoting these passages with approval, I by no means desire to put that gentleman forward as a guide to be implicitly followed, for in his very first published letter to Miss Martineau I find a statement from which I totally dissent. It is as follows: "All the conditions of man and mental peculiarities are now traced to physical causes and conditions, exhibiting clear determining laws."|| This was written more than fifteen years ago, and if true it would have been a misfortune for us, for we should have had no work to do. I contend, on the contrary, that we have not yet traced the physical conditions of man to their causes, much less his mental phenomena. In fact, we are only just beginning both researches. I am glad to know that Mr. Atkinson agrees with me in this, for he says in the same work: "We are as yet but on the very threshold of knowledge;" and that "the true philosopher will be all patience for the present, and confidence for the future, and never in haste to form institutions in advance of knowledge and the condition of society."¶¶

* Works, p. 17.

§ Loc. cit. p. 3.

† P. xii.

|| Loc. cit. p. 6.

‡ P. xv.

¶¶ Loc. cit. p. 281.

Without, therefore, pretending to know how these apparent discrepant statements can be reconciled, I must pass on to say a few words, in conclusion, on the imperfect state of our positive knowledge on that portion of physio-anthropology on which I have chiefly dwelt to night, and which is at once the highest and most interesting branch of it—the functions of the brain.

And here I desire to anticipate two objections which it is possible may be urged against the propositions I have laid down. In the first place, I may be told that it was unnecessary to dwell with such emphasis on the necessity of employing the Baconian method of research in physio-anthropology; and, in the second, that we already know so much of the functions of the brain that we shall be going backwards instead of forwards by beginning our researches on the subject *de novo*.

In reply to the first objection, I contend that if we take up really scientific works on the physiology of man, like the standard work of Todd and Bowman, we there find similar assumptions to those of the psychologist or the phrenologist. Thus, in the last edition* of their works edited by Dr. Lionel Beale, I read as follows:—“Although we are quite unable to say what sort of force vital power is, to isolate it, to examine it, or to give any satisfactory account of the exact manner in which it exerts its peculiar influence upon inanimate matter, we seem compelled to admit the existence of such a power, because the facts observed cannot be explained without such an admission.”

Now, is this inductive science? and are we justified in calling in the aid of some unknown agent to save us the trouble of patiently seeking for the cause of unexplained phenomena? In the same place I also read:†—“It is unsatisfactory to many minds to be thus compelled to admit the action of a force or power of the nature of which nothing is yet known; but it is better to do so than to pretend to be able to give a satisfactory explanation of phenomena which science in its present state is incompetent to account for.”

Are we, however, compelled to admit the existence of a force in nature of which nothing is known? or are we even justified, as men of science, in doing so? If we are justified in calling in unknown powers or forces to solve our problems, then there is an end of all disputes, for we may each explain phenomena in our own way, and there can be no such thing as positive science. Nor can I agree that it is better to call in the aid of such an agent, than to attempt to explain what is inexplicable. I contend that both methods are entirely vicious and radically wrong. The sort of opinions quoted are not simply to be found in any one book, but are the rule rather than the exception in English books on the subject.

In Mr. Robert Dunn's work on *Physiological Psychology* I find he differs from the late Dr. Prichard respecting the existence of mind without a nervous system, for he says:—“The essential nature of mind is a problem which belongs to the same category as the nature of life. We know nothing of life apart from organisation; and we

* Loc. cit. p. 35.

† P 7.

have no evidences of mind independent of a brain or a nervous system. An organism is required for the display of vital phenomena and an encephalon for the manifestation of mind." And yet this writer talks about this brain being the "material substratum" of mind—of phenomena which are always associated with a nervous system, and which are not known except in this connection.

In one of the best modern books on *Human Physiology*, by Dr. Draper, I find the same metaphysical assumptions. In this work we read:—"The functional activity of the brain depends on the copious supply of arterial blood."* Then we are told that "Few topics are more worthy of the attention of the physiologists than that of the variable physical powers of man, and yet few have been more overlooked. By variable physical powers, I mean these periodicities of increase and diminution in our intellectual efficiency which may be noticed not only in disease, but also in healthy states. On the principles we have presented, these find their explanation in the temporary physical states of the organ, such as its condition of repair, its existing facility for oxidation, and the constitution of the blood as respects a proper arterialisation."†

The author then shows "the correspondence between the development of the cerebrum and intellectual capability," and how this is affected by wounds, disease, or malformation; and after all this, winds up by talking about some "prime mover," as he calls it, in one place, and "intellectual principle" in another. These instances could be indefinitely multiplied from other writers, and therefore I contend, in the first place, that English writers on the physiology of man do not follow the Baconian method. They may be right not to do so, but this is a point which I desire on this occasion to see fully and fairly discussed.

The second point I would reply to by anticipation is that we at present know so much respecting the physiology of the brain that there is no necessity to begin again investigating the truth of such general propositions as that, other things being equal, the size of the brain bears a direct relation to the mental power, or that the functions of the brain are localised. There may be many here who will, perhaps, contend that those two positions have been settled beyond the possibility of dispute. I, for one, will not undertake to dispute either of them. But have they been demonstrated in a manner which demands acceptance from scientific men?

In reply to that question, I cannot do better than quote the opinion put forth by a man of science whose researches on the brain have been compared with the labours of Copernicus on the stellar universe. I allude to the late distinguished *savant* M. Gratiolet. He laid down and defended the following propositions:—

- I. That the size of the brain has scarcely any direct signification in individuals or races.
- II. That the doctrine of specialisation of the functions of the brain is false, not only in its application, but in principle.

Need I add more to show the necessity of again beginning our

* P. 325.

† P. 327.

labours and proving each point *seriatim*? Many may be inclined to think that these opinions must be the result of imperfect knowledge, but they can hardly make that charge in the case of M. Gratiolet. On some future occasion we shall have an opportunity of discussing the facts on both sides of this question, and in the meantime I will only quote one other opinion on the point, and that from an English cranio-logist, who says, "Recent investigations tend to the opinion that the posterior lobes are more intimately connected with the mind than the anterior."* In quoting this assertion, expressed by Professor Busk, some three years ago, I would desire to add that I do not mean to insinuate that his opinion on this subject is of special value, or that he was at all warranted by any investigation I have ever heard of in making such a statement, but merely to indicate the present almost hopeless condition of cerebral physiology with men of science generally.

The question now before us is, what is the best method by which we can escape the endless confusion in which our predecessors have been involved? This, to us, I repeat, is a serious, if not a vital point.

Whatever may be the present state of anthropology in England, let us never forget that throughout Europe it is seen and acknowledged that our science is the one to which all parties look for help and assistance to free them from their present confused ideas respecting man's position, not only in animate nature, but also as regards the mutual and natural relations of classes, races, and species with each other. In Dr. Büchner's preface to the Italian translation of the ninth edition of his work on *Force and Matter*, just published, I find these words "all men agree that the future foundation of science and philosophy and (what is more important) of political and social economy, is no longer to be on a theological or metaphysical but an anthropological basis."

It cannot, perhaps, be said with truth that all in this country acknowledge this proposition. There may be some even who are unwilling or unable to see that our science has any right to put forward such a claim. There are, however, few properly educated Englishmen who will any longer deny the paramount importance of our science as a whole, and especially of that portion to which I have directed your attention this evening. Let us, therefore, as an earnest of future work, endeavour to agree on some generally acceptable method of research which we can all understand and follow, and we shall have done more to show the exact nature of our science than by discussing any special question in the whole range of human nature.

If we can once agree on a correct method, I am greatly mistaken if, with the vast accumulation of material already available, and with the numerous staff of industrious anthropologists all over the world, we do not make more progress towards founding a science of man in one year than has hitherto been effected in a century.

Dr. CHARNOCK proposed a vote of thanks to Dr. Hunt for his excellent paper. He thought he had dealt in a very mild and charitable

* Discussion on Dr. Donovan's paper, before the Ethnological Society, loc. cit. p. 16.

manner towards the phrenologists, whose attempts to impose on mankind had been so successful. He would postpone to the next meeting any remarks he might have to make upon the subject.

The Rev. DUNBAR HEATH took it for granted that the debate on so important a subject would be adjourned; therefore he would put himself forward as a sort of seer or prophet, who explained to the people what he felt himself to be the impressions produced by the paper. The question principally discussed in Dr. Hunt's paper was, has man a mind, or has he not? Is there, in point of fact, such a thing as a mind? Quotations were made from various writers, all of whom assumed that there is such a thing as mind distinct from matter. But why was that assumed? The only reason seemed to be that because there were mental phenomena, therefore there must be a mind. There were, no doubt, mental phenomena which could not be weighed in a balance as all material things can be, but that seemed to him to be no proof that there is a mind. Many similar questions arose in the course of scientific investigations, but the tendency of opinion at present is to reject the existence of such a thing as a living principle, in a seed or in an egg, for instance. Let it be assumed that there was a living principle or a mind in man, why should they stop at one? If there were one there might be twenty such principles. There was as much difference between emotion and intellect as between intellect and heat, or as between emotion and motion. There was no connection between the feeling of happiness and the comprehension of the fifth proposition of Euclid. If, therefore, it be assumed that there is one mind, it must also be assumed that there are several; there must be an emotion mind and a thought mind at least; and as a human being produces heat, there must therefore be a heat producing mind. All that we know is the phenomena produced. It was therefore as inconsequent to argue that there must be a mind because there is an emotion produced, as that there must be a pair of bellows and coal to produce heat. One important consideration bearing on the subject was type. There was no vegetable nor animal that had not its respective type. There should, therefore, be a type-producing mind. The perpetuation of type was indeed a phenomenon as strange as anything in creation, and if there was a mind at all there must be a type mind. They might thus quite as well argue that there were twenty minds as one. The religious mind assumed that there is a higher power which produces the type. It would follow, however, that if there be an outside power to produce the type, it must be called into account for the production of good and bad types,—then all the differences observable among mankind would have to be accounted for. It would be difficult to explain why the outside power should so act as to produce talent in one man and stupidity in another. Mr. Heath, in conclusion, said he considered the paper did Dr. Hunt great credit. Though somewhat long it was lucid and valuable, and he hoped it would form an era in the history of the Society. He was ready and willing to follow what was said in the paper about phrenology, and he thought no reasonable phrenologist would object to the remarks on that sub-

ject, which, while condemning the methods that had been adopted by some of its followers, approved of the principles of the science as proposed by Dr. Gall.

Professor MACDONALD said he was much pleased with the paper, and approved of the principle on which Dr. Hunt started the necessity of adopting physiological anthropology as the best basis on which to build the science. He should, however, prefer the term anthropo-physiology as a better designation. With regard to parts of the paper he made some objection. He scarcely thought the discussion about phrenology should have been so long, and it might have been better if it had been omitted. It would be of great advantage if they could introduce the practice of a more definite attention to the inductive mode of reasoning by the observation of man in his various parts, by which means a sounder view of anthropology might be taken. He expressed much pleasure at the arrangement of the subject in the paper. But he could not express the same approval of Mr. Heath's view, who had gone wild into the mist of metaphysical researches. It had been called a "mistyphysical" science, which he thought a very proper term for it, and the sooner they dropped metaphysics the better.

Mr. HARRIS expressed his opinion strongly in favour of the paper. With respect to the suggestion of Professor Macdonald for the omission of phrenology and metaphysics, he considered that anthropology might fuse the two into a valuable science. A certain value might be attached to phrenology, and he considered that too much had been said against it in the paper. Locke and Bacon also had studied mind in conjunction with matter, and he thought that mode of investigation should be continued. There was, no doubt, great confusion in the science of mind, and the only way of getting out of the confusion was by the science of anthropology; at the same time, he thought, they were much indebted to phrenologists for their researches, showing the connection between mind and matter. In the application of those results no doubt many errors had been committed, of which the reported development of organs in a skull supposed to be that of Raphael was a remarkable instance. In that skull the phrenologists perceived all the qualities requisite to make a great painter, but it was afterwards discovered to be the skull of a very different person. It must be admitted, however, that phrenology had done much to add to our knowledge, and anthropology he conceived to be a science well adapted to unite phrenology with metaphysics, and the paper pointed out the way in which the union might be achieved.

Mr. MACKENZIE thought the Society were much indebted to the author of the paper for the manner in which he had treated the subject. There was great difficulty in combatting the question between mind and matter, and in pursuing the investigation they soon came to a wall beyond which they could not go; but that wall he thought anthropology would enable them to break through. It was impossible to discover the phenomena of life except by such efforts as were now being made, in order to form the science of man. The difficulty

that had been encountered had been, whether the phenomena of mind were to be discovered by attending to old wives' tales, or by attempting to arrive at them by investigating nerve centres. The proper course was to ignore everything that was not founded on facts, and among those facts he would place *clairvoyance*. From his own experience he knew of instances of the correctness of clairvoyance which were so well supported that no one could deny them ; but in what that peculiar power consisted he must leave in abeyance. As to phrenology, he thought Dr. Hunt had not spoken too strongly against it. He considered it a most stupid thing, and he had a mortal aversion to it.

Dr. DONOVAN rose to move that the debate be adjourned ; but his right to do so, as a visitor, having been questioned, Major OWEN, as a Fellow of the Society, made the same motion, which was seconded by Mr. CARTER BLAKE. A short discussion then took place as to the right of visitors to move an adjournment, it being contended that a visitor who is invited to take part in the proceedings of the meeting has a right to move that a debate be adjourned.

Mr. HIGGINS moved, and Dr. BEIGEL seconded, that the discussion now be continued. On this Dr. HUNT suggested that as it was an important subject and the hour was not late (ten o'clock), that the discussion might be continued.

A division having been taken, the amendment was carried by a large majority.

Dr. DONOVAN then spoke in defence of Phrenology, which he said had been often attacked by those who knew little about the matter, and it would be well able to bear what had been said about it that evening. Phrenology had not died under the attacks, nor did it appear from the paper that Dr. Hunt wanted to kill it. He wished, however, that he had done something more than quote passages from the works of different authors. He should have described the doctrines of phrenology and its principles. Phrenology, he considered quite as recondite a science as chemistry. It was based upon facts ; there was a theory of Phrenology, and propositions expressive of that theory. It had, at least, quite as much claim to be called a science as Anthropology, which had no doctrines, nor propositions, nor theory. He called phrenology the science of man, and he was prepared to state his reasons why ; and he should have been glad if Dr. Hunt had stated what anthropology is. He compared the manner in which Dr. Hunt had spoken of phrenology to the speech of Mark Antony over the body of Cæsar, in which, while he excited the people against those who had killed Cæsar, at the same time he called them "honourable men." He wanted in like manner to bury phrenology. (Cries of "No ! no !") Dr. Donovan put it to Dr. Hunt to name what principle of phrenology he would dare to deny ; and to bring forward any one of its doctrines and refute it. He contended that phrenology now stands at the head of mental science in Europe, and he concluded by protesting against the expression of opinions adverse to it by persons who were utterly ignorant of the subject at issue.

Major OWEN denied that it was the desire of the Society to put down

phrenology. They wanted to bring it under discussion, and not to condemn it. He said he had given the subject great consideration, and he did not speak without as much knowledge of it, perhaps, as Dr. Donovan himself. What the Society wanted was facts, and he hoped that each member would bring forward facts that he could vouch for, and which he had discovered himself, not accepted on the statement of others. It was the practice of chemists to test for themselves what had been stated by others, and if their experiments failed to produce the expected results they tried again; and at last the right circumstances under which the experiments should be made were arrived at, and they succeeded. He wished the same practice to be adopted with phrenology and mesmerism.

Dr. BEIGEL said Dr. Hunt had shown the right method of investigation by which they might arrive at truth, but he did not stick to the point. Phrenology had never been a science, and it was not capable of being so. He made a difference between phrenology as at present practised and the phrenology taught by Dr. Gall; and said that if the doctrines of Gall had been adhered to there would now be no phrenology. Its professors at the present day never took the trouble to examine the brain. All the stars of science were against phrenology, and he considered that Dr. Hunt exposed himself to attack by speaking of phrenology more extensively than it deserved. It was a subject that was done for all over the world.

On the motion of Mr. H. BROOKES, seconded by Mr. McGRIGOR ALLAN, the debate was then adjourned to the 18th inst.

JUNE 18TH, 1867.

DR. SEEMANN, V.P., IN THE CHAIR.

THE minutes of the preceding meeting were read and confirmed.

The following new Fellows were announced:—Charles Radcliffe Bond, Esq., M.R.C.S., L.S.A., 26, Fortress Terrace, Kentish Town, N.W.; Richard Tonson Evanson, Esq., Holme Hunt, Torquay; Charles Rowland Goodman, Esq., M.D., M.R.C.S., 205, York Street, Cheetham, Manchester; S. Kisch, Esq., M.D., 14, Great George Square, Liverpool; Henry Greenway, Esq., M.D., 12, Ham Street, Plymouth; George Ladd, Esq., M.D., St. Margaret's Place, King's Lynn; Thomas Josiah Laing, Esq., Reform Club Chambers, 105, Pall Mall; F. F. Lilly, Esq., M.D., M.R.C.S., Cambridge House, South Lambeth Road, S.; John Nottingham, Esq., F.R.C.S., M.R.C.P., 20, Roscommon Street, Liverpool; Robert Pattison, Esq., M.D., 32, Charlotte Street, Leith; James C. Procter, Esq., M.R.C.S., Lydd; Alexander Robertson, Esq., M.D., Town's Hospital, Glasgow; H. Hodgson Rugg, Esq., M.R.C.S., 11, Grove Terrace, Grove Road, St. John's Wood; John Ryan, Esq., LL.D., M.D., M.R.C.S., Gere Street, Sheffield; William Francis Ramsay, Esq., M.D., 15, Somerset Street, Portman Square; John Tolhurst, Esq., 60, Tooley Street; Matthew Willis, Esq., M.D., Edinburgh, Aysgarth, Bedale, Yorkshire; Dr. Otto Wucherer, Bahia, Brazil.

The following Local Secretaries were announced as having been elected :—Dr. Zohrab, Broussa, Asia Minor ; Professor Arminius Vambéry, Pesth ; Frank Calvert, Dardanelles ; Dr. Von Hahn, Imperial Consul, Syra ; Dr. Pospuli, Constantinople ; Charles W. Heyland, M.R.C.S., Constantinople.

The following presents were received, and thanks were voted for the same :—

From the Author.—FRIEDRICH MÜLLER. *Reise der Oesterreichischen fregate Novara.*

From Dr. HUNT, Direct. A.S.L.—W. Blair, Esq., *Anthropology. Esquiros, The Dutch at Home.* J. Bonwick, *The Wild White Man.*

From the Author.—F. C. BAKEWELL. *Dynamical Theory of the Earth.*

From T. BENDYSHE, Esq., M.A., V.P.A.S.L.—Lucan, *Works of ; Bentley's Edition.*

The CHAIRMAN said he was glad that on the first evening he had attended the meetings of the Society since his return from South America the names of eighteen new Fellows had been announced.

Dr. HUNT, after congratulating the Society on the return to them of Dr. Seemann, stated that he had been requested to give an abstract of his paper, as there was to be an adjourned debate on it, but he did not feel inclined to carry out that wish, as it would unnecessarily detain the members from entering on the discussion and it was now almost unnecessary, as printed copies of the paper were in the hands of most of them. The subject to be discussed was not a party question ; it was one in which they were all specially interested, for its object principally was to establish the right method of research in the science of anthropology. Whether the paper attacked various systems on the views of different persons, the object of it was that they should meet on a common ground, to lay the basis for future investigations. They could not found a real science of anthropology until they agreed that they were pursuing the right method of inquiry, and one in which they could place confidence, and he hoped, with the assistance of the Fellows of the Society, that they should be able to come to some general agreement on that point. As this was a subject of an important nature it might be found necessary again to adjourn the debate, in which case the meeting would be adjourned to Friday next.

Mr. H. BROOKES suggested that nothing could be worse than the title of the paper, nor than that proposed by Professor Macdonald as a substitute. The subject was the physiology of the nervous system, and it was necessary that they should investigate that subject as primary to the study of anthropology. The proper title of the paper should have been neuro-physiology. Physiology of the nerves was a great branch of anthropology, therefore, the title he proposed would have been the most appropriate for the paper. That paper was similar in its general character to all the papers which Dr. Hunt had contributed to the Society. It was able and exhaustive. It was true that it was rather wide and diffuse ; that it blew both hot and cold at the same breath, and hit about right and left without reserve ; it, in

fact, set them altogether by the ears, having a good word to say to one and a bad word to another. He (Mr. Brookes) did not, however, complain of that. Words of commendation served to stimulate; and words of condemnation were also of use, as they cautioned them to proceed more scientifically in their researches. Dr. Hunt "pitched into" them all, and at times most unjustly so; but such a mode of treatment might do good, for it might stimulate their investigations, and induce them to proceed in a more scientific manner. The whole drift of the paper appeared to be to bring phrenology under their consideration. He denounced phrenology as everyone else did, and of course for the best of motives. He (Mr. Brookes) had been a phrenologist for twenty-five years, and he took Dr. Hunt's lecture to phrenologists in a good spirit, and admitted that they had pursued their inquiries in a bad manner. But anthropologists were open to the same charge. Mr. Brookes then proceeded to allude to the opinions of Mr. Herbert Spencer, as given in Dr. Hunt's paper, and to read quotations from the paper, showing that, even in the opinion of Dr. Hunt, Mr. Spencer went further than the phrenologists, accepting all their chief principles, often without acknowledgment, and that "the only difference between the utterances of Dr. Gall and Mr. Spencer is, that the one gives his opinion on the special localisation of faculties as a man of science and observation, and the other as a dogmatic philosopher." It appeared to be admitted by Dr. Hunt that philosophers had taken from phrenology its facts and principles, but denied any merit to the discovery of the relation subsisting between the development of the nervous system and the degree of intelligence. Mr. Brookes claimed for phrenology the mode of investigation which was now attempted to be applied to anthropology, and he humorously accused Dr. Hunt of stealing their offspring. It was, he said, a case of scandalous abduction on the part of Dr. Hunt, who wished to run away with their child, having an eye to the inheritance, and he wanted to hide the iniquity by changing the name. Hitherto the child had been known as Miss Phrenology, but now it was to be known as Miss Physio-anthropology. He contended that the disciples of Gall had adopted his scientific principles and his mode of investigation, which had been praised in the paper, and that they ought not to be deprived of the fruits of their industry by an anthropologist, who wanted to appropriate what they had achieved and to give them nothing but abuse in return. In some points Dr. Hunt was quite as unscientific as the phrenologist whom he denounced. Dr. Hunt said that he agreed with Sir B. Brodie in his censure of those physiologists who regard mind simply as a function of the brain, that they have no right to overlook want of relationship between mental and physical phenomena, and that an investigation of this matter should be entered on entirely free from any preconceived notion, yet he immediately afterwards denied that phrenology had any claim to be called an inductive science, and that the assertion that the brain is the organ of the mind was a "gigantic assumption" that must for ever estrange phrenology from every really scientific mind. Then after abusing phrenologists and the facts and systems they had established, Dr. Hunt was con-

strained to admit that Gall had laid down the right method of inquiry at the beginning of his investigations. There was no doubt that Gall did discover that a certain peculiarity of mind was connected with a certain configuration of the skull. Those observations and facts discovered by Dr. Gall were confirmed by millions of subsequent observations. He did not contend that every phrenologist was true in his account of mental development, nor that the organs mapped out on the skull were correct ; but he maintained that Dr. Gall did discover that certain mental phenomena coincided with the form of the cranium. If some phrenologists had gone wrong, that was no reason why the discoveries of Gall and his followers should not be accepted. It was the duty of anthropologists to correct what had been taught that was amiss, and that duty they had neglected. Referring then to a similar charge against anthropologists, which had been made by Mr. Jackson, as noticed in the paper, and to the expressed indignation with which Dr. Hunt resented the charge, Mr. Brookes observed that it must be considered as affected indignation, for there was nothing in what Mr. Jackson said that could justify real indignation on the part of anthropologists. One passage of Mr. Jackson's publication, when speaking of the duty of phrenologists, as quoted by Dr. Hunt, was : "It is his (the phrenologist's) humble vocation to supply the facts of cerebral physiology, for which, let me warn him, he will at first receive but slender thanks. He must be contented to wait in faith and patience for the recognition of his services. He must submit to be treated with indifference, if not contempt, by men who are ignorant of the very elements of his science, and who could not practically wield the simplest of its resources." Dr. Hunt considered that charge a scandalous imputation on the anthropologists, and took upon himself to deny the charges made against them. He (Mr. Brookes) took upon himself to repeat them, and to prove them to be true ; and he would do so by the manner in which the paper had been received in that room. The first gentleman who addressed the meeting was the Rev. Dunbar Heah, who made some general metaphysical remarks, but whether he was opposed to phrenology or not he (Mr. Brookes) did not know. Mr. Mackenzie spoke with ineffable contempt of phrenology, which, he said, was a most stupid thing, and that he had a mortal aversion to it, though he confessed at the same time that he knew nothing about it. Mr. Brookes said that when he was a young man he entertained a similar contempt of phrenology, and hearing a medical friend of his speak of "phrenological developments," he had expressed surprise, and observed, "surely you don't believe in that humbug." His friend, however, asked what he knew about it, and he was obliged to confess, as Mr. Mackenzie had done, that he knew nothing ; but, not being so old, his expression of contempt for a thing of what he knew nothing was more excusable. His friend gave him some books on the subject, after reading which his opinions became changed. Another speaker, Dr. Beigel, remonstrated with Dr. Hunt for having introduced the subject of phrenology into his paper, which, he said, had never been a science, and was incapable of being so. According to his (Mr. Brookes') notion, the Anthropological Society had, not only on that occasion, but

at other times, treated the subject of phrenology with indifference and contempt. There could be no doubt—indeed, it was admitted in the paper—that there was some truth in it, though there might be error; and it was the duty of that Society to find out the truth and to expel the error. It was no excuse to say that they did not believe anything about it. Mr. Blake and Mr. Higgins were ready to say that phrenology could not be true, because some skulls were thick, and others were thin, and that the frontal sinus would interfere with any external developments of the form of the brain; but such objections were really of no consequence if the facts elicited by phrenology be true. There might be a thickening of the skull in some cases to interfere with the correct external development, but the simple question was whether they could in general discover by an examination of the skull what was the internal configuration of the brain. He had seen many facts in his time which placed the question beyond all doubt. Twenty-five years ago he was a devotee to phrenology, and he could bring forward innumerable facts in the course of his experience in corroboration of observations made by others, and some of those facts were sufficient to compel the Society to carry out the investigation further. Two or three of these facts he would now state. Mr. Brookes then proceeded to mention that on one occasion a boy was brought to him, whose face he was not allowed to see; and, on placing his hand on his head, he immediately declared that the boy had a great talent for music. Mr. Sergeant Adams, who had brought the boy to him, expressed great surprise, and said it was a most astounding proof of the truth of phrenology, for the boy “had been a musician from his cradle upwards,” and could then play upon seven instruments. And Dr. Gall had discovered that certain portions of the brain had connection with tune, and that there was a specific function of the brain for appreciating music. The other case adduced was to prove that if any peculiar state of the mind be known the form of the skull can be predicted. It was the case of a girl in the hospital at Guernsey, who could retain nothing on her stomach, and the medical men could not tell what was her complaint, though they all agreed that the seat of the disease was the stomach. Mr. Brookes suggested that it was a case of cerebral disease, and that there would be some indication of it in the region of the organ of alimentiveness, for which suggestion he was much laughed at. On examining the head of the girl, however, a large protuberance was perceived on that part of the skull, produced by the inflamed state of the brain underneath, and it was painful to the touch. These instances, he thought, were sufficient to prove that there is some truth in phrenology, and that anthropologists were neglecting their duty in not investigating the subject, instead of treating it with contempt.

Mr. McGRIGOR ALLAN said: * I should not venture into the arena of discussion on the profound subject so elaborately handled by Dr. Hunt, did I not consider it my duty to give my humble support to the position taken up in respect to psychology and phrenology. I

* Printed from Mr. McGrigor Allan's notes. Ed. J.A.S.L.

desire to follow the example of an honourable gentleman (Major Owen) who endeavoured to throw oil on the troubled waters of the debate commenced at our last meeting. To me it seems that all anthropologists, whether "out and out," medium, or anti-phrenologists, should feel equally obliged to Dr. Hunt for such candid and plain statements as this: "We know nothing either of soul or mind. We only know mental phenomena in connection with a nervous system." In saying that "the so-called sciences of psychology and phrenology stand before the world as hopeless failures," Dr. Hunt has done his best to bring to an issue this most important question: is phrenology a science? His paper does not deny the fundamental principles on which it has been sought to rear a true system of mental science. There is approval of Dr. Gall who proceeded cautiously without dogmatism, and censure of Dr. Spurzheim who too rashly completed a formula of specialisation of cerebral functions. If phrenology be a science it need not fear attack. It should court investigation, and be able to stand the test of the most minute examination. Man being the most complex of all animals, the supposition that his brain is not one simple organ, but that various parts are respectively connected with various mental phenomena, is a very natural hypothesis. Man appears to be the only animal capable of looking inwards, taking stock of his own organisation, and becoming conscious of ideas, sentiments, feelings so utterly distinct and antagonistic to each other, that he is said to possess a duplex nature. He has animal propensities prompting him to seek their immediate gratification regardless of consequences. He has also intellectual inclinations urging him to higher pleasures utterly opposed to the gratifications of the passions; and affections which induce him on some occasions to sacrifice not merely his own pleasures and instincts, but his very existence, for the benefit of another. Is this duplex nature confined solely to man? Is man the only animal which may be said to possess a moral and intellectual organisation in addition to passions and appetites? I think not. The rudiments of the moral and intellectual organs are possessed by other animals; for example, one of the strongest, most beautiful of sentiments, one productive of the purest, most unalloyed happiness, the least selfish, the great bond of society—the *love of offspring*—is certainly not confined to the human species. We praise the conduct of a human parent who risks life to save his offspring. What shall we say of the most timorous of animals which do the very same thing? Justice compels us to own that in love of offspring, human parents might copy the example set them by the meaner creatures. Phrenologists admit some sentiments as common to man and animals. But veneration is restricted to man. Without disputing that man is probably the only animal capable of rising from the contemplation of nature up to the conception of a ruler of nature, I draw your attention to Vogt's statement that fear of the supernatural is the germ of religion; and this fear is developed in a high degree in the horse and dog. He writes, "No animal knows mathematics or geometry; but there are animals which can count, though only up to a few cyphers; and this is the germ of

the whole edifice which man has erected, and by means of which he has measured the celestial spaces. The animal has no faith, but it fears something unknown; and is it not the fear of something unknown—the fear of God—from which man has developed his religion?” The fundamental principles or hypotheses of phrenology seem to be very generally accepted. Almost every one seems to associate intelligence with the development of the frontal lobe of the brain, and idiocy with deficient size of brain. To this point we seem to be all more or less phrenologists, in spite of the propositions of Professor Gratiolet, “That size of brain has scarcely any direct signification on individuals or races. That the doctrine of specialisation of function is false in application and principle.” What are we to think of the extraordinary assertion of Professor Busk? “Recent investigations tend to the opinion that the posterior lobes are more intimately connected with the mind than the anterior.” With the ancient Greek sculptors the art of representing the human form in marble, rose and fell. Modern sculptures are but caricatures of life compared with the antique. The Greeks represented heroes, demigods, statesmen and philosophers, with large well developed brows; women invariably with a lesser development of the anterior lobes; and *athletæ*, gladiators, wrestlers, slaves, with “foreheads villanously low.” As examples of this, I would instance those well-known antique types of manly majesty, female beauty, and muscular force—the heads of the Apollo, the Clytæ, and the Farnese Hercules. Daily observation confirms the principles displayed by Greek art. Remarkable men generally possess remarkable heads and faces, and *vice versâ*, the muscular ruffians of the prize ring, and others whose lives rise little above animal manifestations, show small development of the anterior lobes. Our gaols and penitentiaries furnish many examples of what is called the criminal type of head and face. We find in mammals an ascending scale of brain structure; man’s being, as might be expected, the most complex. Instead of a few grey knots as in fishes, or a uniform nervous centre to evolve simple phenomena, we have a cerebrum and cerebellum, both divided into hemispheres, subdivided into anterior, middle, posterior, and parietal lobes; the surface highly convoluted, with well defined fissures. We may admit that this peculiar conformation favours the hypotheses of division of labour, of specialisation of functions. But there is a wide gulf between such admission, and the conclusion that specialisation of function is *proved*, and that phrenologists are proceeding inductively in mapping out various organs on the exterior of the skull, and by comparison of such organs, telling the fortune of the individual by the shape of his head as a gipsy does by the lines on the palm. I am disposed to rebel against the thirty-nine articles of the phrenologist as well as those of the theologian. Do we not perceive men with well-balanced skulls who do not possess well-balanced minds? People not conversant with science speak of phrenological *bumps*. Phrenologists object to the word as erroneous, but this inelegant word may suggest a logical inference. Instead of the human cranium being smooth in surface with gently swelling elevations, ought it not, consistently

with the phrenological hypothesis of specialisation of function, and an elaborate division of labour, to rise in hillocks or bumps; and ought not the surface of the brain to correspond exactly with these bumps, instead of presenting a mass of irregular convolutions, which have been compared to the figure produced by forcing a bag larger in surface than the skull-interior, into the cranium? According to Vogt, "A localisation is claimed which in no way corresponds either with the intellectual faculties, or with the details of the cerebral structure." "The old anatomists paid but little attention to the arrangement of the convolutions, especially as it was soon found that they were not symmetrical on both sides." He proceeds, "There is no doubt whatever that, according to the fundamental plan of his brain, man belongs to the ape." The remarkable analogies between the brains of ape and man suggest an important question for the consideration of phrenologists. Believing as I do, that neither in mental phenomena, nor in brain structure, can we draw a broad line of demarcation between man and the higher mammals, especially the mammal which approaches the nearest to him in form, I have taken great interest in the celebrated controversy between Professors Huxley and Owen on the human and simian brains. If phrenologists do not dispute the fact that in the ape as in man, the posterior lobe covers the cerebellum; that both man and ape possess a posterior cornu, and a hippocampus minor; that the external surface of the ape's brain possesses the principal fissures and convolutions which are visible on man's brain; it seems to me, that they cannot refuse to apply to the ape the system of mental science which is applied to man. If any gentleman doubt this uniformity with the arrangement of the convolutions between man and ape, he may inspect these illustrations in Vogt, p. 184, representing the brains of a mathematician, the Hottentot Venus, and the orang. So far as we can judge by these figures, there is no generic distinction. All three brains are formed on the same plan, and the attempt to claim for man a separate zoological kingdom on an asserted diversity, is utterly unscientific. The general plan is the same; and so far as brain structure is concerned, the consistent naturalist might, with strict propriety, place man and ape in the same *order*. As a lover of impartial justice, let me protest against this very absurd argument which I have frequently heard used against phrenology; that it cannot be true because it is directly opposed to the freedom of the will, and that a benevolent Deity would never have constituted man with an organisation which caused him to sin! All such *à priori* arguments are puerile and worthless. I am not one of those who pretend to cut the Gordian knot of all difficulties by assumptions which virtually imply the privilege of entering into the counsels of Supreme Wisdom. Of Nature's designs, of the moral purpose of the creation, we know absolutely nothing. The speech of a well-known phrenologist at our last meeting, appeared to me to contain some remarkable discrepancies. Dr. Donovan began by saying that phrenology was almost universally disparaged and despised, and yet he was indignant with Dr. Hunt and Mr. Mackenzie for not accepting the dogmata of a

science endorsed by so many eminent authorities! He spoke of Dr. Hunt as a *dilettante* observer, and, after expressing a hope to become a Fellow of our Society, he tauntingly asked Dr. Hunt what was the meaning of anthropology, the object and scope of his science? Dr. Hunt observes that the definition which Grote applied to physio-psychology—"a mental and moral human anatomy, and a mental and moral comparative anatomy," belongs to physio-anthropology. It is not necessary for me to take up the time of the Society by defining the meaning of a word which speaks so plainly for itself as anthropology. But in conclusion, I may observe, that anthropology is not one science, but many—a *congeries* of sciences. Its universality and comprehensiveness are shown by the number of our Fellows, each pursuing some branch of study more or less intimately connected with the grand science of man. It is natural, of course, that each should think his own hobby most important, and strive to give it a prominent place in anthropology. But under the genial sway of our learned and indefatigable Director, I augur good, not evil, from this amiable rivalry; in this scientific Catholicity consists, in my opinion, the real strength of our Society. There is work enough for all, and the Anthropological Society wisely welcomes men holding the most divergent views. When we observe the battle going on between philosophers, metaphysicians, psychologists, phrenologists, theologians, sociologists, and the desperate efforts made to keep certain systems and societies afloat, we may say to these leaders of forlorn hopes, "Here bring your wounded hearts. Here tell your anguish." *Here*, at least, you will find "a refuge for destitute truth." When I reflect that to this Society may, and probably will, fall the Herculean labour of disinterring anthropological truth from the heterogeneous heap of theological, metaphysical, and philosophical rubbish under which it has been buried for so many centuries; and becoming the chief agent in freeing man from systems and establishments interested in keeping him far more ignorant of his own nature and capabilities than of the most insignificant weed, insect or worm, I certainly consider it a privilege to call myself an anthropologist; for, as such, each Fellow may apply to himself the celebrated line of Terence,

"Homo sum; nihil humani à me alienum puto."

Mr. C. CARTER BLAKE thought that scientific men might congratulate themselves that science had at last been brought face to face with phrenology; though he was a little surprised that such a subject should have been noticed in such a paper at all. He thought that Dr. Beigel had truly described the position of phrenology when he said that it had no existence as a science at the present day; and to make further remarks on it was, to use a common expression, "like throwing water on a drowned rat." There could be no use in the discussion of phrenology by the anthropologists of 1867, unless they thought that in following the observations of Mr. Brookes they would be placing themselves in the position of the picadors in the Spanish bull-fights, who, by throwing red rags and darts, and other provocatives at the animal, prolonged the sport, and for that purpose kept up the game till the

matador gave the death blow. Phrenology as now practised might be an art, but it could not be called a science. He was perfectly willing to follow in the wake of such men as Cuvier, St. Hilaire, Owen, Huxley, and Busk, whom England honours, and who have done the greatest service to anthropology, and in studying physio-anthropology he hoped the Society would not be led too much into metaphysical inquiries, but would only accept the statements of those who had studied the brain as it was actually presented to them on dissection. He differed from Dr. Hunt regarding the respective merits of Gall and Spurzheim. The latter he considered a true anatomist, however erroneous in some of his inferences, and no anatomist would cease to honour him as one who had intimately studied the anatomy of the brain, however absurd were his conclusions from the facts he had discovered. Mr. Blake could not say this of Gall. In one part of the paper Dr. Hunt noticed the uncertainty of the present state of knowledge of the brain, and alluded to the opinion of M. Gratiolet that the size of the brain has no direct influence on the intellect. That opinion was combatted by Dr. Broca, and on other and more trifling points he admitted that anatomists were divided. Some maintained that the degree of intellect depends on the size of the brain, some that it depends on the number and intensity of the convolutions, but none at the present day said that a certain collocation of the brain denoted intellect. It was stated in the paper that Professor Busk had expressed the opinion that the posterior lobes of the brain are more intimately connected with the mind than the anterior, but he (Mr. Blake) thought there was no reliable evidence that Professor Busk had ever expressed the opinion attributed to him in an absurdly inaccurate pamphlet, purporting to give an account of a discussion on Dr. Donovan's paper in another place. Professor Owen, in his recent great work on anatomy, described the brain of fishes, and stated the results of experiments made as a test of the localisation of the functions of the brain. Phrenology here totally failed; now what was true of lower animals was true of man, because anthropology was not independent of general "biology." That was admitted by Spurzheim, who took the brain of the tortoise for one of his illustrations. With regard to the title of the paper, he should prefer "the function of nerve matter in man" as a better title than physio-anthropology, for all these questions, if treated in the way Dr. Hunt had treated them, only came to the discussion of matter and its functions in the end. "Functional anthropology" would, perhaps, have been more definite. "Biology," he said, might be divided into morphology and teleology, the latter being the science of the functions which animal matter undergoes, but all ideas of design or creative adaptation should be excluded from scientific discussion. He thanked Dr. Hunt for his valuable paper, which had led them more or less away from the facts; the discussion had done so still further, but it was always advisable that they should wander a little. In conclusion, Mr. Blake observed, that valedictory addresses are frequently wearisome to the hearers; and there is no tune so lugubrious, so dull, and so painful as *La Despidida*. He

had, on this occasion, perhaps the last when he should have the honour to address them from that table, merely to thank them for their patience.

Mr. C. WALFORD observed that phrenology in its present state was not able to explain the phenomena of the mind, and that it was desirable to adopt some other mode of inquiry. The study of anthropology seemed to open the way to satisfy the cravings of the mind for fuller information, and he considered that Dr. Hunt had laid the foundation for a right method of investigation.

Dr. CHARNOCK said, perhaps no one took so great an interest in anthropology as the author of the paper. Thus it was we were favoured with such titles as "Historic Anthropology," "Archaic Anthropology," "Physio-Anthropology." He would, nevertheless, advise Dr. Hunt to alter the title of his paper. Professor Macdonald's suggestion, "Anthropophysiology," would be much better. But the most appropriate term was "Human Physiology," in contradistinction to "Vegetable Physiology." Dr. Donovan asked what was meant by anthropology? Under the circumstances that was a strange question. He would refer Dr. Donovan to a Greek lexicon, under *ανθρωπος* and *λεγω*; again, from *βουνος* or *κονδυλος*, might be formed a much better term than "Phrenology." Dr. Donovan said the phrenologists had the facts with them; so had the mesmerists, the spirit rappers, the table turners, and those who formerly believed in lunar influence in diseases. The latter, indeed, had some respectable authorities, as Galen and Hippocrates among the ancients; Sauvage, Hoffman and Mead among the moderns. Among other phrenological facts here was an interesting one. A Welshman, who had not spoken his native language for thirty years, received a considerable injury on his skull; on recovery, he forgot the English language, and ever afterwards could speak no other language than Welsh. Dr. Donovan defied his opponents to refute any statement in phrenology. The so-called science, "Phrenology," was based upon falsehood, assumption, and unreasoning. The writings of Drs. Gall and Spurzheim contained two truths; one was, that large heads contain large brains, and small heads small brains. This fact was known to physiologists long before the time of Messrs. Gall and Spurzheim; it was not, however, always true, some skulls being thicker than others. The other truth was, that there are eminences on the surface of the skull. But eminences are not found on all skulls, and the number varied. Then came the falsehood, viz., that there are eminences on the brain and concavities in the inner part of the skull *corresponding* with projections on the surface. No anatomist of repute would endorse such a statement. There were often depressions within when the outside of the skull showed no projection whatever, but was quite flat, and sometimes even hollow; and there were often large prominences on the surface when there were no corresponding depressions within. Again, phrenologists were not agreed as to the number of their eminences or organs. According to Gall there were twenty-seven organs, Spurzheim says thirty-five, Combe thirty-three. They could not all be right. Which of them was right, and why should there not be a

greater number of organs and eminences? Why not, for instance, several organs for veneration; viz., one for superstition, another for science, and a third for quackery? What a pity the later phrenologists had not consulted the writings of Sir Charles Bell. That distinguished anatomist discovered that thirty-one nerves went off in rapid succession from the brain and spinal marrow. What a fine theory the phrenologists might have made of this. Thirty-one nerves, thirty-one bumps, thirty-one organs. It was probable that the brain had little if anything to do with the mind; and that the latter had its origin in the remainder of the nervous system. Look at the experiments of Morgagni, La Peyronie, Duverney, Lacutus, Genga, Petit, Schmucker, Brodie, Abernethy, Home, and others. In some cases portions of the cerebrum were wholly wanting; in others, parts had been destroyed by suppuration or otherwise. These cases included nearly every region of the brain. In one instance, part of a knife; in another, the end of a stiletto, had been found in the brain, and yet in all these cases without producing loss of sensibility in any part of the body until within a short period of death. There was a case mentioned by Quin of a child who died at the age of eighteen months, in which nearly the whole of the brain was found reduced to water; and of another cited by Morgagni, that of a man, who died without experiencing any loss of sensation, where a large portion of the cerebellum was found reduced to a vascular mass. From the printed copy of the paper which he now held in his hand, it would seem that Dr. Hunt had omitted to read the best paragraph, viz., an extract from the *Edinburgh Review*, to the following effect, "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 misstatements, and unmeaning quotations of 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." This was the correct estimate of phrenology. When the present should cease to be a shallow age, it would doubtless place upon the same shelf the busts of Gall, Spurzheim, Paracelsus, and Count Cagliostro.

Mr. DENDY said the observations which had been made on the paper were not worthy of the paper itself, which contained a mass of suggestive opinions on the subject, and did not go wide a-field as most of the speakers had done. He was astonished at the strong observations which some gentlemen had made about phrenology; and, in his opinion, they should adopt the principle of concession and compromise in their inquiries, or they would never get at the truth. He admitted that some of the observations of Mr. Brookes had astonished him, but he was not inclined to speak of phrenology in the manner other speakers had done. Reverting to the term phrenology, he considered it to be the most unfortunate name that could have been adopted, for its strict meaning was the doctrine of $\phi\rho\eta\nu$ the diaphragm; and it might be assumed, therefore, that it attributes the operation of thought and intellect, and of emotion, to the viscera instead of to the brain. In

the mapping out of the organs on the skull phrenologists had also been unfortunate, for the organs of constructiveness and of destructiveness were placed close together, and, in some instances, the divisions of the respective organs on the skull went across the convolutions of the brain. The developments of the cranium, he thought, had little to do with the actions of the mind, for the different thicknesses of the bones in some parts, and the frontal sinuses, must prevent the actual form of the brain from being perceived. He thought the quantity and quality of the brain was much more important than its shape. He agreed, however, with phrenologists in thinking that the brain is the seat of the mind, and he admired the mode adopted by Spurzheim in dissecting the brain. He considered that a good way to study phrenology would be by noticing the effects of diseases of the brain. He said that he had had a patient whose skull was fractured, and he had taken away a portion of the brain, so that a very small part of the left hemisphere remained; yet, after a week the man regained his senses and his memory, and seemed to be not much affected in his mind, though the organs on one side had been taken away.

Mr. BENDIR said his remarks would be confined to that portion of the paper which related to clairvoyance. Dr. Hunt having dissented from the proposition of Dr. Büchner that clairvoyance is impossible, he (Mr. Bendir) thought it was not conclusive merely to adduce in general terms our imperfect knowledge of human nature. Dr. Büchner had not barely asserted an opinion, but his arguments were founded on a number of well ascertained facts, as well as on some principles in which all men of science agreed. If Dr. Hunt could disprove the arguments, or doubted the facts referred to in Dr. Büchner's work, *Force and Matter*, translated by Mr. Collingwood, there would be need of discussion on a subject which otherwise was beneath the serious consideration of a scientific body like the Anthropological Society.

Mr. ALFRED R. WALLACE expressed his dissent from that part of Dr. Hunt's paper which related to phrenology. He said that anthropologists had hitherto considered the mental faculties and physical peculiarities of mankind as isolated phenomena, and had not made any attempt to connect them; but phrenologists had done so, and had shown that certain peculiarities of the organisation of the brain had relation to the functions of the mind. If there be a connection between them it was to be traced, and they should endeavour to find it out. Many of the objectors to phrenology admitted that Dr. Gall commenced his inquiries in the right method to arrive at truth, and that he had made important discoveries; yet it was now asserted that there was not a particle of truth in the science. If that were so, it became the more important to take up the study of the brain, and to arrive at the truth. With the large collection of skulls now formed, and with materials to aid in the inquiry never before existing, it became the duty of that Society to see whether any relation does exist between separate portions of the brain and distinct mental faculties. He objected most strongly to Dr. Hunt's calling the statement of the phrenologists, that the brain is the organ

of the mind, "a gigantic assumption." He might as truly say that to assume that the eye is the organ of vision was a gigantic assumption. The question was, has the brain anything to do with mental functions, and can we connect the peculiarities of mind with distinct parts of the brain? It was a great subject, and should be taken up by that Society on a large scale, so as to extend observation from individual cases to whole races of mankind, which the Society, with the aid of its many corresponding members in all parts of the world, were in a condition to do. What was wanted was the accurate determination both of the mental characteristics and the form of the skull of different races, and a systematic comparison of these data, so as to connect the one set of facts with the other. Individual cases made little impression on the public mind compared with the effect that would be produced by a comparison of the crania of different races with their known mental peculiarities.

Mr. ALFRED HIGGINS moved that the discussion be adjourned, which was seconded by Mr. LUKE BURKE, and carried.

Mr. CHARLESWORTH suggested that a limit should be put to the time to be occupied by each speaker, as there were many gentlemen who were anxious to express their opinions.

The CHAIRMAN expressed regret that in the course of the discussion several members had thrown dirt on different sciences. They were all trying to find out the right path, and though many might be wrong, yet by taking advantage of their experience, and by avoiding the paths that had been shown to be wrong, the right path might be gained at last.

The meeting was then adjourned to the following Friday.

JUNE 21ST, 1867.

DR. SEEMANN, V.P., IN THE CHAIR.

THE minutes of the last meeting were read and confirmed.

The following new Fellows were elected — Robert Carrington, Esq., F.R.G.S., Admiralty, Whitehall; F. H. Chittenden, Esq., M.R.C.S., South Lodge, Lee Park, S.E.; Frederick Cock, Esq., M.R.C.S., 1, Westbourne Park Terrace, Porchester Square; James Coke, Esq., M.D., Kivellan, Edinburgh; Wm. O. Copperthwaite, Esq., M.R.C.S., Malton; F. H. Fitzwilliam, Esq., 18, Royal Crescent, Ramsgate; Ryves Wm. Graves, Esq., F.R.C.S., 18, Barton Street, Gloucester; C. E. Haile, Esq., M.R.C.S., 17, Cross Street, Islington; L. Doake Hill, Esq., M.D., 35th Regiment; Henry James Paine, Esq., M.D., 11, Crockherbtown, Cardiff; James Rawson, Esq., A.B., M.D., Lichfield; J. L. Thomas, Esq., M.D., St. Clear, Carmarthen; J. F. Wm. Turner, Esq., M.D., 9, Melville Street, Ryde; Thomas Heagle, Esq., Rochdale; F. W. Coates, Esq., M.D., 10, Westover Villas, Bournemouth; Fred. Theed, Esq., M.R.C.S., Glanydon House, Rhyl, Wales; J. R. Carlill, Esq., M.D., 57, Berners Street, West; F. G. Courthope, Esq., Cheam, Surrey.