The surgeon should first be provided with two long splints, one to reach from the perinæum to the sole of the foot, the other from the top of the ilium to the sole of the foot, and with a square piece of cloth in which to roll the splints, so as to make a trough in which to lay the limb. First apply a belt around the thigh above the knee, minding first to protect the skin by a common roller. Let a piece of tape, of about three feet in length, be tied to each loop on the side of the knee; now let the limb be laid between the splints, rolled in the cloth as described. The counter-extending bar, D, will now be drawn out to its full length, and made fast by the screw, E; the thigh-fork (fig. 4) will be applied to it with the roll, H, suspended between its arms, and the rack will be drawn out sufficient to allow the foot of it to cross the sole of the foot. Now apply the instrument on the external side of the inner splint, the roll, H, pressing against the perinæum as in fractures in the shaft of the bone. Draw the tapes tensesly, and tie them on each side of the foot to the foot of the rack; apply the strap across the top of the ilium, and around the arms of the fork, in the manner before described; place a thick pad between it and the skin, and draw the strap sufficiently tense over it to give full length to the neck. Tie tapes around the whole at convenient points, to securely fix the limb, splints, and instrument, as one piece; the instrument may be further secured to the pelvis by passing a band once round the pelvis, and on its second turn, pass it round the end of the arm of its respective side, and make it fast to it—now give the necessary extension to the limb. I will not detain you to point out how the four rules have been complied with in the treatment of this fracture; I trust you will be able to discover it without my assistance.

THE SUBSTANCE
OF
AN ADDRESS
TO THE
STUDENTS OF ANDERSON'S UNIVERSITY,
GLASGOW,
AT THE
OPENING OF DR. WEIR'S FIRST COURSE OF LECTURES
ON PHRENOLOGY IN THAT INSTITUTION,
JANUARY 7, 1846.
By **ANDREW COMBE, M.D.,**
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH,
ETC. ETC.*

GENTLEMEN,—On seeing a stranger present himself before you to deliver a lecture introductory to a Course on Phrenology, it will naturally occur to you to ask, Why does he occupy the place which belongs of right to Dr. Weir? The answer to this question will be found in the following brief history of the origin and progress of Phrenology, and of the events which led to the institution of a lectureship on the subject in this University.

From the earliest dawn of science, the attention of anatomists and physiologists, and, I may add, of philosophers also, has been earnestly directed to the study of the brain and the nervous system. Enveloped in obscurity as these important organs were, facts of daily and hourly occurrence nevertheless forced the conviction upon the minds of all reflecting men, that whenever their functions should be discovered, they would be found to fulfil the very highest purposes in the economy of man. Even the most cursory observation was sufficient to show, not only that the brain is the seat and centre of sensation, voluntary motion, thought, and feeling, but that it exercises a paramount, although often indirect, influence over the whole bodily organization. Under the pressure of deep grief, for example, every function is impaired, and the powers of life become more and more enfeebled, till death at last closes the scene, and the individual is said to have died of "a broken heart." Under the influence of the strong passion which accompanies maniacal excitement of the brain, the action of the heart is characterized by unusual violence, the circulation becomes rapid and tumultuous, and the whole system is so instinct with energy, as almost to defy restraint. Under the calmer and more equally diffused excitement of hope and joy, the different bodily functions are raised in tone, and so agreeably stimulated, that all the operations of life are carried on with a vivacity and ease which at

once enliven existence, and form the best safeguards against the inroads of disease. A blow on the head, or a powerful narcotic, on the other hand, may, by disturbing the action of the brain, produce absolute insensibility of both body and mind, and lay prostrate the highest genius. The bursts of mental power and extraordinary bodily strength developed during the delirium of fever, or under the use of wine or spirits, form equally striking and instructive examples of the predominant influence of the brain in the animal economy; and its intimate connexion with the mind is perhaps nowhere exhibited with greater clearness than in the regularity with which the different mental powers become developed and advance through the different stages of maturity and decay, in exact proportion as the brain itself passes from the imperfect development of infancy through its stages of maturity and decay.

These, and similar facts, all leading to the same conclusion, have forced themselves upon the attention of mankind in all ages and countries, and they form the groundwork of the almost universal conviction, that the brain is, in some way or other, the seat or organ of the mind. An enlightened curiosity, however, does not stop short at this vague and general proposition—it seeks to discover farther under what conditions this association of mind with brain exists. It seeks to know whether, in producing and giving expression to the varied and complicated phenomena of thought and feeling, the brain acts as a whole or as an aggregate of many parts, each subserving a particular sense or faculty. For thousands of years philosophers have laboured to penetrate this mystery, but laboured in vain; and yet, in every succeeding age, the constant recurrence of the same phenomena has kept alive, in its fullest force, the conviction, that the discovery of the functions of the brain and nervous system would be fraught with important advantages to science and to mankind; both by explaining some of the profoundest mysteries of our being and position, and by affording principles of the highest utility for our future progress and improvement. Under this stimulus, inquiry never became apathetic, even when it seemed most unpromising. If it failed of success, this was not from want of zeal, talent, or perseverance, on the part of those engaged in it. The failure, as will be afterwards pointed out to you by my friend Dr. Weir, arose solely from pursuing methods of research which, because they were founded on a wrong principle, were incapable of leading to success. Not suspecting or perceiving where the error really lay, one physiologist after another either entered upon the beaten path of his predecessors, without attempting to remedy the defects of method which had misled them, or he *invented* a new *theory*, bearing the impress, not of nature, but of his own imagination, and of course failed, in his turn, to arrive at the truth. The anatomists also, from no lack of talent, zeal, or industry, but purely from a similar want of a guiding principle, expended their time in nearly profitless labour. Instead of attempting to trace the natural relations of the parts of the brain to each other, they continued for centuries to cut it into slices, and thus *destroyed*, by their own act, the very structure they wished to examine; a proceeding, the only parallel to which would be, to examine the anatomy of a limb by slicing it transversely, like a round of beef! Failing to arrive at any useful result by such destructive methods, they, too, had recourse to their imagination, and enlivened the dryness of their researches by the discovery of supposed resemblances of parts of the brain to natural or artificial objects, and believed that in giving names significant of these most grotesque resemblances, they were advancing the cause of science. Hence the learned application of the terms *nates* and *testes* to the quadrigeminal bodies; hence the *aqueduct* of Sylvius, the *bridge* of Varolius, the *writer's style* or *calamus scriptorius*, and other equally unmeaning designations. From the same imaginative source was derived the fancy which gravely seated the soul in the pineal gland. Hence also the various "spirits" with which it pleased philosophers at different times to fill the ventricles of the brain! In reflecting on all these things, however, let us not give way only to a smile of ridicule or contempt. Seriously considered, these very vagaries indicated the strong and constant desire to arrive at the discovery of truths which were felt to be important. They sprang from no innate love of absurdity, but simply from zeal and activity of mind, operating without a principle to guide them through the labyrinth which they sought to penetrate. If a man, set down in a new country, wanders in a direction the opposite of that in which he wishes to go, it is no proof that he is destitute of the power of motion. The greater, indeed, his power of walking in such circumstances, the further will he be likely to go astray; but provide him

* On account of the author's infirm state of health, this Address was delivered by his brother, Mr. GEORGE COMBE.

with a sure guide, and then see how vigorously and safely he will advance ! It is the same with the anatomist and physiologist; set them down without a guide, to study the unknown regions of the brain and nervous system, and the greater their talent, the further will they be liable at times to wander from the way of truth. But once provide them with a guiding principle, and every step will then bring them nearer and nearer to the goal.

The more, indeed, we consider the nature of science and the history of the past, the more manifest does it become, that it has been the want of a sound method of investigation, and not any inherent difficulty in the subject, or any marvellous complexity of function, which has hitherto constituted the chief obstacle to success. Nature's laws and operations rarely remain wholly inaccessible to well-directed and persevering inquiry, and they seem to be a maze of confusion and contradiction only when considered in a wrong point of view, or when examined apart from their natural relations to each other. When correctly understood, they generally present an aspect of remarkable simplicity. For a similar reason, many of the plainest of the laws or phenomena of nature appear the very image of incongruity to the untutored savage, who knows not how to trace the principle which binds them into harmonious connexion. It is precisely thus with the anatomist of the brain and nervous system. If he has no sound principle to direct him where to begin, and how to proceed, many of his results must necessarily appear to him perplexing, incongruous, and inexplicable. By a lucky chance he may hit upon useful truths, which will remain like landmarks amidst the waste of error over which he has fatiguingly wandered; but he will do little to throw light upon the general scheme of Nature, and will often leave even his surest facts a subject of doubt to those who succeed him, simply because he cannot present them in harmonious connexion with any other ascertained truths.

Here, then, is the source of the barrenness of results which has, in times past, so signally characterized most of the researches which have been made into the structure and functions of the brain and nervous system. False methods of inquiry, and not any insuperable difficulty in the subject, have been the causes of failure; and it is most important that at this your outset in a new study, you should fix your attention strongly on this fact, and satisfy yourselves of its foundation. If the method which Gall has followed be really superior to any hitherto in use, it becomes no longer wonderful that he should have succeeded in unfolding, to a greater extent than his predecessors, not only the real structure of the brain, but many of its most important uses; or that he should have put you in possession of means whereby you may, in your turn, correct his errors, and improve what he and his followers may have left imperfect. I shall, in a subsequent part of this lecture, explain his method; but in the meantime remark, that if I shall assign adequate causes for so many centuries of failure by other physiologists, and for the success which has attended the labours of Gall, it will follow, as a matter of course, that any condemnation of his discoveries by those who have never zealously pursued his method, but derived their knowledge wholly from methods proved to be utterly inadequate, must be held, in the eye of reason, as of scarcely higher value than would be the hostile opinion of any uneducated man regarding any disputed point in modern chemistry, optics, or electricity. Ignorant as such an opponent must be regarding the uses of the brain, it is impossible that he *can* have anything except theory or early prejudices to oppose to the facts of phrenology; and for these I have no respect as sources of evidence. I am as much disposed as any one to yield deference to authority, or to opinions based upon certain and positive knowledge, however much they may militate against my own prepossessions; but where mere opinion is brought against what I know, from direct, careful, and repeated observation, to be *clear and positive facts*, no matter how eminent the source of the opinion may be, I stand firm and unmoved, because Nature is at my back, and I have the fullest assurance that she commits no mistakes, and is never inconsistent; and I know that, on appeal being made, she will be found to speak the same language to-day as yesterday, or as a thousand years ago, and to bear out all I have advanced, if I have really been accurate in my observations.

To place this argument before you in its full force, it would be necessary, if your time permitted, to expose, in some detail, the inherent defects of the different methods of investigation resorted to before the days of Gall. This will be done more fully at a subsequent part of the course, by my friend Dr. Weir. In the meantime, it will be enough for my purpose to state, that anatomists have tried to discover by dis-

section the uses of the different parts of the brain; but unaided examination of structure has never yet been sufficient to reveal the function of an organ; and even if it did, the structure of the brain is, or was till very lately, as little known as its uses. We might dissect the optic nerve till the crack of doom, without being enabled, by that means alone, to demonstrate that its use is to convey visual impressions from the eye to the mind. It is by observing the concomitance of the faculty of vision with the existence and development of the nerve, and the effects of its diseases in destroying sight, that we arrive at the discovery of its function. *Having once made this discovery*, anatomy steps in to confirm its truth, by showing its consistency with the relations of the nerve to the eye on the one side, and the brain on the other. It is the same with the nerve of hearing, with the nerves of sensation and motion, and, indeed, with every part of our bodily structure. We might dissect them all for centuries, apart from observation of the living phenomena, without being thereby enabled to discover their uses. A familiar proof of this is to be found in our still remaining ignorant of the functions of the spleen and thyroid and mesenteric glands, and of parts of the brain itself, of which the structure is now pretty well ascertained. Even the structure of a muscle, plainly as it speaks *after* we perceive its function, does not, of itself, suffice to teach us that its office is to contract. It is by observation of the actual concomitance of contraction and structure that we first ascertain the fact. Dissection may prove the *compatibility of function and structure, after the function is found out by observation*, or disprove an alleged function, by showing its incompatibility with *well ascertained* structure; but, in the case of the brain, neither of these principles can be very safely applied, because the structure itself is even yet too imperfectly known to lead to positive results; and hence, among those who reject the discoveries of Gall, there is to this hour no agreement whatever regarding the functions of the different parts of the brain, whereas, if structure revealed function, there would be unanimity amongst them.

Metaphysicians, on the other hand, have attempted to solve the problem of the cerebral functions by the aid of *consciousness*; but their failure has been equally signal. So far from revealing to us the uses of different parts of the brain, consciousness does not even reveal its existence. We know that there is *something* within the skull, but we have not a trace of information from consciousness what it is, how composed, or what its form. If it had been possible to discover the functions of the brain by reflecting on the phenomena of our own consciousness, they would not now have continued to prove as great a stumbling-block to the modern as they did to the ancient metaphysicians; and I need only appeal to yourselves, and ask what amount of information you can derive regarding the operation of your own brains, or of any internal function, from consciousness alone. Did consciousness enable any one to anticipate Harvey's discovery of the circulation of the blood? or does it throw any light on the phenomena of digestion or of respiration? None whatever. We know that we breathe and digest, but we are left to find out, by observation, both the manner and the mechanism; and it is the same with the brain. We have a kind of consciousness that we think and feel by means of our heads; but none whatever that our skulls contain brain, much less of the uses of its component parts, or of its particular uses even as a whole.

The only other channel through which information has been sought, and sought in vain, is the study of the effects of injuries and diseases of the brain, and the effects produced by mutilating the brains of animals. Dr. Weir will, by-and-by, demonstrate to you the inadequacy of this method also to furnish the information required. Suffice it for me to say, that it is not amidst the suffering of disease, or the general disturbance of system caused by wounds or mutilations, that healthy regularity of function is to be found. Where any part of the nervous system is concerned, and suffering is excited, it generally becomes too much mixed up with local results to admit of being properly discriminated; and, accordingly, not one new fact of any radical importance to the physiology of the brain in its connexion with the mind has yet been demonstrated by this method of inquiry, notwithstanding the many and persevering efforts made in recent times to turn it to account; and except for the light thrown upon its results from other quarters, many of them would remain before us nearly as destitute of meaning as at first.

Such, then, was the state of the physiology of the brain down to the time of Dr. Gall, and such continues to be essentially its state even now, among those who reject his discoveries. If, therefore, any adherent of the old methods of inquiry should happen, in your presence, to enlarge upon the

demerits of phrenology, or the presumption of its disciples, you need be under no alarm for the consequences; you may at once turn the attack against himself, by requiring him to show what he can put in its place. If he has made any discovery of his own of the functions of the brain, he must be a very modest man indeed to hide its brilliancy under a bushel; for, as yet, nobody has claimed any such merit. If, therefore, phrenology contain *any portion* of truth, science can only gain by its candid and unprejudiced examination; and you are interested in exact proportion to the amount of truth which it embodies, not rejecting it heedlessly or unexamined.

But what, then, you will ask, *is* this boasted method by which Gall has derived such a rich harvest from a field which others have cultivated with so little success? The answer is, simply, that in investigating the functions of the brain, he has followed the same principle which, applied to other organs, has led to the discovery of their functions, but which, from various causes, had never before been systematically applied to the brain. When the physiologist wished to ascertain the function of any particular organ of the body, he did not rest satisfied with examining its structure, and speculating on the purposes for which that structure seemed in his eyes to be adapted. He began by direct observation, and watched what kind of function *appeared during life as the invariable accompaniment of the presence and action of that particular part*, and by repeated and careful observation, he at last succeeded in discovering the functions. The knowledge thus obtained was afterwards verified, confirmed, and completed, by the examination of structure, and the observation of the effects of its injury or diseases.

It was by this method that the liver, for example, was proved to be the secreting organ of the bile, many centuries before its true anatomical structure was ascertained. This fact being once arrived at, its truth was confirmed by observing, further, that bile is met with only in animals in which a liver also is found, and that its secretion varies in amount with the development of that organ, and is affected by its diseases. The same with the kidneys: observation, during life, of the concomitance of organ and function, is the *first source* of all our authentic knowledge of the part they perform in the animal economy; and it is only *after* having thus ascertained that they serve to secrete the urine, that we become enabled to extend and complete our information, and to trace the true relation of structure to function. Even of the muscles, our knowledge has been acquired in the very same way: we *observe*, in the living body, the concomitance of muscular motion with muscular fibre, and thence infer that its function is to execute motion. Here, then, is the very principle which Gall has succeeded in applying to the elucidation of the functions of the brain; and he was led to its adoption by an accidental observation at school, of the concomitance of a particular kind of talent with a peculiar appearance of the eye, which he found afterwards to be caused by the development of a particular part of the brain. At school, at college, and in many other places, and under wholly different circumstances, the same concomitance of talent with development of brain came under his notice so frequently, as to arrest his attention to the probable or possible success which might attend the application of a similar mode of discovering a connexion between other mental talents and the development of other portions of the brain. In this respect Gall resembled in no small degree the illustrious Newton, who, from the accidental fall of an apple at his feet, was led to the discovery of the law of gravitation. Like Newton, having once obtained the clue, Gall never lost his hold of it as a guide to discovery; and he found it, on trial, to prove like a lamp to his feet, in the investigation of nature.

It was by the persevering application of the method of inquiry which accident had thus suggested to him, and not, as many suppose, by an effort of imagination, that Dr. Gall was at last enabled to place the physiology of the brain upon a solid foundation, by demonstrating, *first*, that the brain is an aggregate of many different parts, each serving for the manifestation of a particular mental faculty; and, *secondly*, that, *all other conditions being equal*, the size of each of these cerebral organs is an index of the power of its function. These two propositions, as will be afterwards fully explained to you by Dr. Weir, constitute the distinctive or fundamental principles of phrenology. The first of them, however, is not new. The impossibility of reconciling the phenomena with the notion of a single organ of mind has, for many centuries, suggested the probability of their plurality; and it is stated, that, influenced by this incompatibility, the great Haller, among others, "*felt a necessity for assigning different functions to different parts of*

the brain;" just as, for a similar reason, many physiologists had long suspected that the nerves of sensation and motion must be different. But it remained for Dr. Gall to *demonstrate* the fact of a plurality of organs in the brain, just as it did for Sir Charles Bell to demonstrate the distinction between the different kinds of nerves; and before the conclusion of this course of lectures, you will be better able to appreciate the merit and consequences of this demonstration than you are now. At present, I need only allude to an objection sometimes inconsiderately made by medical men against the possibility of the existence of any such cerebral organs, on the ground that, on looking at the brain, no visible separation between its constituent parts can be detected, such as we see in the organs of the five senses. On examination, the whole force of this plausible objection is found to depend on overlooking the very different nature and functions of the internal and external faculties. The organs of the five senses require to be distinctly isolated from each other, because, from their being the media of communication with the external world, each requires a distinct apparatus to place it in harmony with the kind of impressions it is destined to receive and transmit to the brain. The eye, for example, being adapted in structure to the rays of light, is unaffected by impressions of sound; and the ear, being adapted to atmospherical vibrations, is unaffected by the rays of light; and hence each of the senses has, and must necessarily have, a specific apparatus for itself, so distinct in its mechanism from that of the rest, as almost to preclude the possibility of the organs being grouped together in close connexion with each other. With the organs of the internal faculties, however, no such necessity exists for their absolute separation. On the contrary, their complete isolation would serve only to impede that consentaneity and harmony of action among several of them which is required in almost every mental operation. Accordingly, the objectors forget that, even in the case of the nerves of sensation and motion, where simultaneousness of action is often indispensable to the due regulation of our movements, a still more intimate connexion of fibres of different kinds, and performing distinct functions, exists for a similar purpose; and that it was precisely this apparent blending of two sets of nervous fibres which so long misled physiologists to the belief that the nerve was a single organ, consisting of fibres serving equally for sensation and motion. This hasty and erroneous inference was arrived at in the face of many opposing physiological phenomena, solely because, on examining the really compound nerve, no visible distinction could be traced between its two sets of fibres; and it remained for Sir C. Bell, in the nineteenth century, to demonstrate their actual existence, and thus to reconcile their structure with the functions which they were ascertained to perform. The objectors forget, also, that a similar peculiarity characterizes the spinal marrow, and was equally the cause of the obscurity in which the distinct functions of its constituent parts were so long involved. In all ordinary circumstances, sensation and motion, irritation and reflex action, are most intimately associated; because the one is the exciting cause, and, in one sense, the director, of the other: but on some occasions, and more especially in morbid or abnormal conditions of the system, their distinct and independent operation becomes so evident as to be explicable only on the idea of a corresponding plurality of nerves.

The very same principle applies to the different cerebral organs which serve to manifest the different primitive faculties of the mind. In most mental operations, associated action of several of the primitive faculties is almost indispensable to the accomplishment of their object; and to admit of this at once consentaneous and combined action of several faculties in themselves distinct, their cerebral organs must be in intimate connexion with each other; and, accordingly, such is found to be the order of nature.

But, it may be argued, if the internal faculties of the mind generally act in combinations of a greater or less number, does it not follow that the brain must, as a single organ, serve for the whole of them, instead of each having a part of the brain appropriated to itself? This conclusion, however plausible it may seem, would be as fallacious as the similar inference of the identity of the nerves of sensation and motion, from the general fact of their combined and consentaneous action. It is true that several of the faculties are generally active at the same time; but their elementary distinctness and independence of each other are shown, not only by their different degrees of strength bearing no constant relation to each other, but by the ever-varying combinations, in number and in kind, in which they manifest themselves. For, if they were all general results, of one general power, operating through one organ, there would

be in all instances a fixed proportion in the manifestations of feeling and thought, and a definite order in their sequence and arrangement in harmony with the unity of action of a single organ. This is not the occasion on which to enter more fully into the objection; but I trust that I have said enough to satisfy you, that it is in reality more specious than sound, and that it is refuted both by direct evidence and by the analogy of other parts of the nervous system, the functions of which are now well ascertained.

Of the truth of the two fundamental principles of phrenology, and of the possibility of applying them successfully to the discovery of the functions of the different cerebral organs which serve to manifest the different mental faculties, it would be easy for me to adduce ample evidence, were this the proper time to do so. That, however, will be afterwards satisfactorily done by your able lecturer. For the present, I must be allowed to assume their truth, and on this assumption to press upon you the necessity of examining both the facts and evidence for yourselves. You cannot with safety continue to neglect this inquiry; because the truth is advancing while you are inactive, and you are not in possession of any other knowledge which can warrant you in condemning the claims of phrenology untried. In common fairness, you are bound at least to make yourselves acquainted with both sides of the question, and to suspend your judgment till you have done so. I may go farther, and urge what to many will seem still stronger grounds for recommending you to give phrenology a fair hearing. Your own interest is deeply concerned in your decision. If phrenology be true, and if you remain unacquainted with its principles and facts, you will soon find yourselves left behind by those who have had the courage and sagacity to follow the guidance of truth. If true, there is no branch of knowledge which can be of more direct practical interest and utility to the physician or to the philosopher. If true, it furnishes a key, not only to the physiology of the brain and nervous system, but to the philosophy of the mind; and, as such, there is scarcely any form of disease, on the nature and consequences of which it is not calculated to throw some light, or in the treatment of which it does not afford valuable aid.

Many suppose that it is only in cases of insanity that a knowledge of the physiology of the brain is of any great consequence to the physician. In the discrimination and treatment of every form of nervous and mental disease, it is indeed invaluable, or rather, I may say, indispensable; but from much experience I may further add, that there is scarcely a case to which a medical man can be called, in which an acquaintance with phrenology will not smoothe down difficulties, and afford him efficient aid, both in regulating the treatment and in dealing with the friends of the patient, so as to secure their hearty and complete co-operation. The afflicted are beginning to make this discovery for themselves; and the day is gone by, when advocacy of phrenology was an objection to a medical man. The bias is now turning the other way; and I have myself received many applications for advice from invalids in different parts of the kingdom, who stated that they were induced to consult me by a belief that phrenology would throw light upon their ailments. In ordinary private practice, also, the utility of phrenology is already appreciated by many; and professional men who understand it are sought after in preference to men of equal skill who remain in ignorance of its value. Here, again, I speak from actual experience; because, since bad health compelled me wholly to relinquish the exercise of my profession, I have repeatedly been applied to by invalids to recommend an adviser who was well acquainted with phrenology. Indeed, it is to the actual experience of its benefits by a former patient, that you are indebted for being now assembled in this hall. The late W. R. Henderson, Esq., devoted much time and attention to its study, and became deeply impressed with the services it was destined to render to mankind. In his own person, and under many drawbacks, he had, both during health and in disease, experienced its practical utility, and thence became more fully aware of the numerous and beneficent applications of which it admits, to the relief of suffering, as well as to the moral improvement of man. Under this conviction, he resolved to do all in his power for its more extensive diffusion. With this view, some years before his death, he devoted part of his leisure to the delivery of lectures on the subject to the working classes of Galashiels, in the neighbourhood of which he then resided. An impediment in his utterance rendered this effort less successful than it would otherwise have been; but to secure the more effectual and permanent attainment of his object, he made a will, by which, after providing annuities for several friends,

he bequeathed all his property to trustees, to be devoted to the more extensive diffusion and cultivation of phrenology; and specially recorded, that he did so from no transient fit of enthusiasm, but from a calm, well-considered conviction of the truth and practical value of Gall's great discovery. * * * Phrenology, considered as the philosophy of the mind, must be deeply interesting to all classes of reflecting and educated men; but to the intelligent and well-educated medical man it offers still more powerful points of attraction, by presenting to him, for the first time, a firm foundation for a true and complete physiology of the brain. In this point of view it will, I am confident, speedily become an *indispensable* branch of knowledge to every physician who desires to keep pace with the progress of science, and to maintain his place either in general society, or among his well-educated brethren. Conscientiously entertaining this belief, I cannot but rejoice that you have been provided with an opportunity of becoming acquainted with the nature and evidences of phrenology, and with its applications to the treatment of disease; and I would strongly urge you not to let slip the facilities which Dr. Weir will afford to you of forming your own judgment, on the only safe ground—that of examination of evidence. Dr. Weir is well qualified to be your guide, and he is not untried. He has been long known to you as a successful teacher of medicine, and as an able physician. He has already lectured on phrenology; and from him you will learn all that is requisite to enable you to prosecute with advantage your own farther researches into the anatomy, and the physiology and pathology, of the nervous system. He will prove to you, what many are anxious to conceal, that Gall's merits are not confined to the physiology of the brain; and that, on the contrary, it was he who, by abandoning the old plan of slicing this organ like a cheese, and adopting the rational method of tracing its elementary structure as it exists in nature, first gave the impulse and the direction which, in recent times, have done so much to improve our knowledge of the anatomical relations of the different parts of the brain to each other, to the spinal marrow, and to the nerves; and that such men as Reil, Blumenbach, Blainville, and Cuvier, did not disdain to acknowledge their obligations to him as an anatomist, even while they doubted his physiological doctrines. Even in Germany, from which phrenology was expelled almost at the instant of its birth, it now rears its head, and gives indications of vigorous and enduring vitality. Germany not only possesses a journal devoted to phrenology, and published regularly at Mannheim, but there is every reason to hope that, in the University of Heidelberg, the very focus of the celebrated Tiedemann's active opposition, a lectureship similar to your own will shortly be established, and given to Dr. Scheve, who has already made himself advantageously known by his labours in the cause.

But while I estimate thus highly the value of phrenology, it is right to warn you that it is of phrenology as it exists in the minds of its well-informed cultivators after years of study and observation that I speak, and not of the fancy which many substitute for it in their own minds, and designate by its name. Of the latter kind of phrenology, nobody can have a lower opinion than I have. It neither is nor ever can be of any use, either to its possessor or to others. The phrenology which I have here recommended to you is a science which cannot be mastered or judged of in a day, in a week, or in a month. Like other sciences it must be studied before it can be known. Many entertain the notion that they have only to read a book or a pamphlet to qualify themselves to estimate its bearings, and pronounce authoritatively on its merits. This is a grand mistake; as well might we expect to become the equals of Liebig or Faraday, by reading a volume on chemistry. Till we become acquainted with phrenology in its details, with its evidences, and with its manifold applications to medicine, education, and morals, we are in truth as incapable of forming a correct opinion of its nature and uses as we should be of those of chemistry while in a similar state of ignorance.

[As we are urgently pressed for space, and as the concluding portion of this able "Address" might be considered by many of our readers to be of a local, rather than of a general interest, we must here close our extracts.—Ed. L.]

"His (Dr. Hope's) studies were of a grave character. Perceiving what unfathomable depths of unattained knowledge lay before him, he arrived at that rare wisdom, inculcated by the Grecian sage, a conviction of his own ignorance. He entertained a very humble sense of his attainments, and forgetting the way that he had already gone, he eagerly pressed forward with the feeling that he had scarcely begun the race."

—*Memoir of the late Dr. Hope.*