He has also constructed an instrument, partly on the plan of the one employed by Mr. Tamplin, which, with somewhat of unnecessary parade, he formally makes over to the profession. We dare say it is very useful, and it certainly is very ingenious. There is, however, a something in Mr. Verral's book, which we would gladly see removed—a sort of writing for the public; indeed, in one place he fairly enters into some elementary explanations for the benefit of the non-professional reader who may chance to refer to his pages. Perhaps this defect is almost inseparable from a work on so popular a subject as deformities; but certain it is, that we rarely do meet with any author of this class, who is entirely free from this imputation. Mr. Bishop constitutes an honourable exception; and the fault we find with him is, that his work presupposes too much learning on the part of his readers, and requires, for its beneficial use, a capacity for applying principles to practice, which is, we fear, considerably beyond the average of our profession.

ART. XVII.

Chapters on Mental Physiology. By HENRY HOLLAND, M.D., F.R.S., F.R.C.P., &c. &c.—*London*, 1852. 8vo, pp. 301.

THE title of this volume is one with which captious critics might find fault, and not without a show of reason. We have no wish, however, to rank under such a category; and readily adopt our author's explanation of it, more especially as we own ourselves incapable of showing how it could be changed for the better. By the term *Mental Physiology*, Dr. Holland wishes to express "that particular part of human physiology which comprises the reciprocal actions and relations of mental and bodily phenomena, as they make up the totality of life." And he has adopted the title, *Chapters on Physiology*, "partly to avoid the profession of a complete treatise, which this is not; partly to indicate that most of these topics, and even their titles, are taken from another work, the first edition of which was published thirteen years ago." Those of our readers who have enjoyed the profitable pleasure of perusing Dr. Holland's 'Medical Notes and Reflections,' will doubtless remember certain very interesting chapters on the "Effects of Mental Attention on Bodily Organs," "On Time as an Element in Mental Functions," "On the Relations of Dreaming, Insanity," &c., "On the Brain as a Double Organ," "On Phrenology," and "On the Present State of Inquiry into the Nervous System," which are dispersed through different parts of the volume, in the midst of subjects of a more strictly medical character. Thus separated from each other, they were deficient in the sequence and connexion naturally belonging to the topics of which they treat, and indispensable to a proper consideration of the entire subject; and feeling that there are circumstances, at the present time, which render it peculiarly desirable that the subject *should* be placed prominently before the view both of the profession and of the public, Dr. Holland has brought these chapters together, enlarging them where addition could be profitably made, and re-writing them where alteration had become requisite, in consequence of the progress of knowledge; whilst he has added three entirely new chapters, "On Mental Consciousness, in its

Relation to Time and Succession," "On the Memory, as affected by Age and Disease," and "On Instincts and Habits," which were originally intended for a second series of his former essays. He has thus embodied within the compass of a very moderate-sized volume, a philosophical digest of the products of observation and reflection that have been habitually carried on throughout his professional life, on topics of the highest interest alike to the medical practitioner and to the scientific physiologist and psychologist.—The following extract from the preface will convey an idea of the author's general plan and purposes, to those who are not familiar with his former work:

"Much of course will be found in this volume which is familiar to those who have studied the subject, especially of late years. But, if I do not deceive myself, there are still certain facts not heretofore duly recognised or defined, and certain relations of phenomena requiring fuller illustration than they have yet received. These I have sought to embody in the ensuing chapters, in the order which seems best calculated to give connexion and unity to the whole. To arrange under new combinations what is already known to us, is often in itself a source of fresh knowledge, or a valuable means of correcting previous error. Various instances to this effect will, I trust, occur to the reader in his progress through the volume. I may add, that in the discussion of the subjects, though obliged to adopt certain divisions for the sake of clearness, I have kept in constant view that great law of continuity, which equally governs all mental and material phenomena. No conclusions are more secure, or more profitable, than those drawn from a careful notice of continuous relations; and of those gradations of change, which bring extreme cases within common laws, and reconcile anomalies with facts familiar to experience. To this I would advert, as a principle I have largely applied in every part of the volume.

"The topics treated of are such in their nature as perpetually to bring us to the very confines of metaphysical speculation. Except in the case of one great question, which could not be put aside, I have carefully avoided passing over this boundary. Convinced of the general truth of the maxim, that 'it is safer and easier to proceed from ignorance to knowledge than from error,' I have endeavoured throughout to separate what is known from that which is unknown—what is capable of being reached by the human understanding from that which is presumably unattainable by it. The close adherence to this principle will probably expose me to the charge of having surrounded the subject with unresolved doubts and difficulties. But I think it far better to incur this imputation, than to assume a knowledge not yet possessed, or to cover the deficiencies of reason by any mere artifices of language." (pp. viii., ix.)

One of Dr. Holland's main objects has been to point out the mode in which the mesmeric phenomena and doctrines, and the topics collateral to them, which have drawn so largely upon public attention of late years, should be scientifically examined. We are glad to find his views in such complete accord with our own on this point. We are convinced that the profession has done discredit to its own character, and has lost no inconsiderable amount of public confidence, by the tone of ridicule which it has generally assumed with regard to the class of phenomena in question; and that it will not recover its lost ground, until it shall have carefully and candidly examined them, with due attention to their relations to known physiological and pathological actions, in the mode and spirit of which Dr. Holland gives in this volume so excellent an example. The only fault we have to find with his treatment of it is, that it is too general and deficient in explicitness, so that it is likely to be accounted vague and unsatisfactory by those who have not been prepared by their previous

studies and inquiries for apprehending the whole meaning which is conveyed in some of Dr. Holland's philosophic abstractions. And this, we fear, will operate against the extended appreciation of the present volume, as it has done against the full recognition of the merits of the former collection. Men are usually more struck by new facts, than by new aspects of facts previously familiar to them; and finding but few of the former in Dr. Holland's essays, they are apt to ask themselves what they have gained by their perusal. In many instances, Dr. Holland has drawn just that inference from the collocation and comparison of facts, which they would have themselves done *if* those facts had been brought before them under a like arrangement; and they have hence regarded the merit of that inference as being their own, rather than Dr. Holland's, altogether overlooking the fact that it was to him they owed the means of making it. And even where he has propounded doctrines possessing more obvious originality, these have been generally advanced with such an avoidance of the dogmatic form, and with so many cautious reservations, that they have taken no definite grasp of the mind of the reader; which may, nevertheless, have received from them such a direction and impulse, that it works out the same conclusions in a form of its own at some future time, and may fancy them to be original, unless any circumstance should occasion a recurrence to Dr. Holland's suggestive pages. This is what has happened to ourselves in numerous instances, and we know that it has occurred also to others. And our author must be content to look for his reward, rather in the consciousness of having successfully laboured to lead others to the formation of correct and philosophical views, than in the direct recognition of the original source of those views,—rather in the good which he has done, than in the applause which he will receive from it from the public. But this, to a man who loves truth as Dr. Holland has shown that he does, can be no real disappointment.

Each of the chapters of which we have enumerated the titles, might well serve as the text for a critical discussion; but upon such a discussion our limits forbid us to think of entering; and we must content ourselves with attempting to give an idea of the mode in which Dr. Holland treats the subjects now for the first time introduced, and with selecting a few passages for extract.

In the introductory chapter *On Medical Evidence*, which has been transplanted from the former collection, we find the following additional passage, which conveys warnings that are alike needed by the public and by the members of our own profession:

"Here, again, I must advert to a circumstance which renders strict attention to the laws of evidence a matter of peculiar obligation at the present time. This is the tendency, so marked in modern physiology, to carry its researches into the more abstruse questions connected with vitality, the nervous power, and the relations of mental and material phenomena,—inquiries justifiable in themselves, but needing to be fenced round by more than common caution as to testimony, and the conclusions thence derived. Yet here especially it is that such precautions have been disregarded; partly, it may be, from the real difficulty and obscurity of the subject—still more, perhaps, from the incompetency of many of those who have taken it into their hands. For these researches, no longer confined to a few as heretofore, have become the property and pursuit of many who wander merely on the confines of science, believing they are within its pale; and whose speculations on what they see are little checked by collateral knowledge, or by a due estimate of the laws and

limits of scientific inquiry. The mystery of the subject is in itself a charm and seduction to the mind. They see, and give attention for the first time to, those wonderful phenomena, which, though inherent in the constitution of man, and in the relations of his mental and corporeal nature, are not familiar to common observation. The feelings are thereby excited even more than the reason; and belief is hurried on, and results accredited, with little care for the sufficiency of proof, or knowledge of the many facts which otherwise explain, or contradict, the conclusion. However earnest the desire for truth, imposture rarely fails to mix itself with inquiries so conducted; and increases the practical evil which always more or less results from error. Every philosophical physician is bound to watch over these events as they pass before him; never refusing inquiry, because what is put forward is new or strange; but requiring evidence in proportion to the unusual character of the facts; sifting closely that which is offered, and rejecting all conclusions not founded on this basis." (pp. 9, 10.)

In a note to this passage, Dr. Holland adverts to the great diversities which prevail in the intellectual constitution of man, as regards the readiness with which different individuals allow themselves to be convinced,—one man concluding upon proof, which to another has neither weight nor pertinency,—one mind pursuing a subject throughout all its relations, whilst another follows but a single line to the result. We have often had occasion to observe, in reference to this subject, how remarkably the adage is frequently verified, that "extremes meet." It is an old observation, that complete scepticism in religion is often allied with extraordinary credulity in other matters; and we have a remarkable verification of this at the present time, in the authors of 'Man's Nature and Development,' of one of whom it has been not unaptly or untruly remarked, that "she will believe anything that is *not* in the Bible." This relation is frequently exemplified in the sudden conversion of the utterly incredulous opponent of Mesmerism, who begins by maintaining it to be a tissue of humbug, delusion, and imposture, into the thoroughgoing advocate, whose motto seems to be, *credo quia incredibile est*,—for whom no prodigy is too marvellous, no impossibility too staggering. No sooner does such an individual become convinced that there is "something in it," than he yields himself entirely and indiscriminately to the seductions of the novel and mysterious phenomena which are presented to his admiring attention,—the very same deficiency in the power of critical analysis, which made him *reject* everything in the first instance, causing him to *swallow* everything in the second. Our own observations have led us to the conclusion, that the men of candid, discriminating, philosophical minds, who are really qualified by intellectual ability, and by the habitual subjection of their feelings to their sense of right, to form an accurate judgment in matters of this kind, are very few indeed. And it happens unfortunately for the interests of true science, that the men of this class are usually of a temperament which indisposes them from putting themselves prominently forwards, to take the inquiry out of the hands of those who have hitherto conducted it; and who shrink from coming into collision with the violence and vulgarity, which is alike manifested by the advocates and by the opponents of the doctrines in question. Yet it must be by the verdict of the philosophical inquirers, that the question must ultimately be decided; and we think that the present aspect of Mesmerism is one which strongly calls for a full, fair, and searching investigation, with all the assistance

which can now be afforded to the inquiry, by the study of those remarkable states, with which the public has been of late familiarized (not, however, that we mean to aver that everything is *real* which has been exhibited by itinerant performers—far from it), under the designations of Electro-biology and Hypnotism. For it is by the thorough examination of those peculiar states, which are capable of being artificially induced, without even the semblance of any external agency or influence, that we may best hope to learn what is true and what is false in Mesmerism; to eliminate all that may be probably or even possibly attributed to the influence of *suggestion*, acting through the conscious mind of the subject of the experiment; and thus to separate the phenomena, if such there be, which are inexplicable by any known agency, and which must be held to prove the existence of powers hitherto unrecognised by scientific psychologists, physiologists, or physicists.

Dr. Holland's chapter on the *Effects of Attention on Bodily Organs*, is one which has received more notice than perhaps any other; and quite deservedly, since it affords the clue to the investigation and explanation of a vast number of those phenomena, of which it has hitherto been considered most difficult to afford a satisfactory solution, and which have accordingly been referred to the undefined categories of "faith," "imagination," &c. In his present reproduction of it, we find many valuable additions; and from these we shall first cite a passage, in which he more distinctly defines the state of mind to which he refers, than he had previously done.

"Before entering on the subject, however, I must premise a few words as to this act of mind, which we designate *attention*; a term apparently needing no definition, yet which is open to some difference of interpretation, depending on the different functions, of mind and body, with which it is associated, or by which it is brought into action. The phrase of *direction of consciousness* might often be advantageously substituted for it; but here again the same explanation is required as to the especial manner in which the consciousness is thus called into exercise. Limiting the question, as we do at present, to the effects on the bodily organs, we have to note the several distinctions between attention directed to any part by express effort of the will—attention solicited by sensations derived from the part, and independent of all volition—and attention suggested or excited by some mental state, having reference to the part, but in which the will is equally unconcerned. These cases, though ever graduating into one another, as is common with all mental phenomena, yet are essentially distinct; and even where scarcely divisible to observation, do still severally modify, more or less, the results in which they concur. The function of the will, exercised in the first case, and only partially, or not at all, in the others, best defines the separation, and has greatest influence on all the phenomena." (pp. 14, 15.)

We are not sure that we rightly understand our author's meaning in the last clause of the preceding quotation. That which seems to us to have the greatest influence on the result is, not the *voluntary* direction of the attention, but the state of *expectation* of a certain result, which, when the mind is completely absorbed in the contemplation of it, seems to act as an independent originating power. It is, as it appears to us, when the voluntary power is in the most complete abeyance, that this state of *expectant attention* (to use a phrase which has long been familiar to us, and which Dr. Holland elsewhere employs) produces the most powerful effects, both upon the animal and the organic functions. And these effects

may be produced, even where the will is exerting itself to antagonize them. Of this we cannot have a better illustration than that which is afforded by the "swing-swangs" which have been a fashionable amusement during the last twelve months, among those who had not the wit to see through the fallacy of their results. If a man suspends a button by a string from the end of his finger, and attentively watches its vibrations, with the conviction that they will assume a definite direction, they will presently do so, notwithstanding that he exerts his utmost voluntary power to prevent any movement of his hand. If, then, another person lay hold of his disengaged hand, or he take into it a homœopathic globule, or a piece of metal be placed beneath the button, or any other change be made which *leads him to expect* an alteration in the direction of the vibrations, *such alteration will take place*, quite independently of his will, which may be exerting the same resisting power as before. It is a manifestation of the very imperfect analysis which is commonly made of such phenomena, that from the moment when they are found to be referrible to a physiological principle, instead of demonstrating, as they were at first supposed to do, the existence of a new force, they seem to lose all their interest for those who had previously watched them with eagerness, and to be set down as illusory, or as the product of the imagination, notwithstanding that they are as *real* in the one case as in the other. From the time when these phenomena were brought under our notice, we have steadily maintained that they are referrible to the principle of *expectant attention*; the fixed idea that a certain result would ensue, being sufficient, in those individuals whose minds can be brought to entertain it, to produce those insensible movements of the hand which bring it about; so long—that is—as the eyes are fixed upon the vibrating body, and the requisite *guiding sensations* are obtained through them. And it has afforded us no little amusement to watch the various stages of belief in many of our friends,—commencing with complete incredulity, and ending with the full reception of the odylie force which these experiments were supposed to demonstrate,—and then to be able to upset the whole fabric, by the simple proof that these results are entirely due to the *mental* state of the performer, that they depend upon his constant watching of the vibrations, which lose their regularity as soon as he takes his eyes from them, and that *any* change which he can be led to expect may be thus induced, whether the appropriate physical influences be employed, or not.* But the facts are not, when thus accounted for, one whit the less curious and interesting; and they afford one of the best possible proofs, that a state of mind which is neither volitional nor emotional, but which simply

* See the account of Dr. Henry Madden's experiments on Mr. Rutter's magnetometer, at Brighton, in the *Lancet*, for Nov. 15, 1851.—We are not without hopes that Dr. Madden's good sense may lead him to inquire, whether the operation of homœopathic globules upon the living body is not due to the same principle as that which he found to govern the movements of his suspended button—namely, the state of expectant attention in the minds of those who employ them. We think that a few experiments, candidly and carefully made, will lead him to suspect that such may not improbably be the case. On this point Dr. Holland well remarks: "We may reasonably refer to the same principle some of the alleged facts in homœopathy; such as the long train of symptoms, sometimes amounting to hundreds, which are catalogued as proceeding from infinitesimally small quantities of substances, inert or insignificant in other manner of use. The attention urged to seek for local sensations has no difficulty in finding them. They generate one another; and are often, as we shall afterwards see, excited by the mere expectation of their occurrence." (p. 20.)

consists in its complete engrossment by an *idea*, may express itself in muscular movements, which must be accounted *automatic* in their character, although originating in the cerebrum, not in the spinal axis. To the actions of this class, Dr. Carpenter has recently given the name of *ideo-motor*; and has shown that they constitute a group which must take rank in physiology above the *sensori-motor*, as these last do above the *excito-motor*; the cerebrum, the sensory ganglia, and the spinal cord, being the instrumental agents in these groups respectively.* This view was extended by Dr. Carpenter to *all* those states of mind, in which the voluntary control over the current of thought is suspended, and in which the mental state is determined entirely by the re-action of the mind of the individual upon external impressions,—the states, namely, of dreaming, somnambulism, hypnotism, electro-biology, &c.; and he showed how the various phenomena of these states, strange as they at first sight appear, are reducible to this one simple principle, the possession of the mind by a *dominant idea*, of which it has no power to divest itself, and of which all the bodily actions performed during its continuance are the expressions. Although Dr. Holland is less explicit in his statements, yet it is obvious that this is also his view; and some of his most valuable additions to this chapter relate to the influence of the will in directing the current of thought, and to the automatic character of the mental operations when this power is withdrawn or suspended.

“In speaking of the automatic, however, as opposed to the voluntary power, we must not limit the former to what are commonly termed the parts and functions of organic life,—those which depend on the spinal and ganglionic systems, and the direct and reflex actions therewith connected. We can hardly apply any other term to those states of the sensorial organs, in which there is the loss, partially or completely, of voluntary power over the ideas, images, or creations which successively traverse the mind; as well as of the influence of the will over the voluntary muscles of the body. The rational governance of these acts is enfeebled or gone; and the influence of organic or material causes comes in, producing those vague and inconsequent trains of thought and imagery, which we have just denoted as strongly expressed in the states of sleep and disease; but which are of constant occurrence, in one degree or another, in all the passages of life. In many remarkable cases, the ordinary perceptions from the senses are wholly disturbed and perverted by the condition of the sensorium receiving them. Muscular motions occur from other causes than volition; and past images and memories rise up unbidden to perplex both sensations and acts by mingling with them, without control or direction of the rational will.

“We can hardly go further in deciphering this most obscure part of our nature, present though its effects ever are to our consciousness. But these effects are too rapid in sequence, the changes in the power and direction of the will too frequent and transient, to be submitted to analysis. We recognise the main fact of its limitation by the automatic parts of our structure; we see and feel it to be variously controlled by impressions from without and states of mind within; we observe the influences of these several causes in creating habits of action, mental as well as bodily, in which the power of the will is so far lost that they become almost like the instincts of inferior life.” (pp. 28, 29.)

In applying these considerations to the states already alluded to, he proceeds:

“Here the attention, no longer guided,—or if at all, partially and interruptedly,—by the rational will, becomes submitted to the vague and almost automatic condi-

* See the Report of his Lecture at the Royal Institution, March 12, 1852; contained in the *Athenæum*, May 15, 1852.

tions of the sensorium just described. The actions upon it from without, and the reflected acts and movements thereby induced, form a very extraordinary page in the history of the human mind. It is here, in fact, that we must look for explanation of those strange results in animal magnetism, electro-biology, &c., which have served so greatly to perplex all ordinary observers, and even some who come better prepared for the scrutiny of such phenomena. Without referring in detail to things often described and very generally known, I will at once point out the questions which concern us in the present inquiry; and which govern, in truth, every other question and argument in relation to the topics just mentioned. Are these phenomena—admitted by all to be singular and striking—derived from a peculiar agent or influence, transmitted from one human body to another by certain modes of communication? Or are they the effects of various external excitements on the sensorium and nervous system of persons of a peculiar temperament, analogous in nature and origin to phenomena with which we are more familiar in sleep, trance, hysteria, and other forms of cerebral or nervous disorder?

“These questions, involving the very reality of the mesmeric theory, must ever be kept before us in all observation or reasoning on the subject. It is singularly important that this should be done wherever experiment is concerned; inasmuch as they suggest those particular tests which are essential to complete evidence, but which have been, for the most part, unaccountably neglected. In putting these questions, moreover, we indicate the absolute need, for the right prosecution of this inquiry, of familiarity with the natural phenomena of health and disease just adverted to. Without this knowledge, and without the just perception of what constitutes scientific evidence, we might as well be gazing on the feats of a conjuror at a public exhibition, as on those of animal magnetism in similar assemblies.” (pp. 30, 31.)

As to what have been termed the “higher phenomena” of Mesmerism, Dr. Holland makes the very just remark that the asserted powers of clairvoyance, prophecy, &c., require a very different kind and degree of evidence for their establishment, than that which is needed to verify those other conditions which are so closely allied to the ordinary changes in health and disease. The more carefully all those phenomena of mesmerism are examined, which present themselves with any tolerable constancy, as well in the presence of philosophical sceptics, as in that of true believers, the more completely are they found to be really akin to those, which occur under circumstances that demonstrate the *absence* of the very agency for which the Mesmerists contend. This has been fully brought out by the investigation which the electro-biological phenomena has received from scientific enquirers, especially in Edinburgh; and upon this point Dr. Holland makes the following observations, with which we fully coincide:

“Another frequent error of belief it is also important to remove. The phenomena which have been produced under the name of electro-biology, have manifestly close relationship to those of Mesmerism, and are connected by common opinion with the same mysterious cause. Yet this remarkable class of facts does in fact contradict what we have seen to be the main assumption of the Mesmerists;—that, namely, of a bodily influence of A. upon B., by which the latter is brought into what could only be considered a new state of existence; mental as well as bodily, active as well as passive. The results exhibited by the biologists—analogue in kind and equally striking—are not alleged to proceed from any such mysterious agency; but come before us fairly as the very curious effect of excitement of various kinds upon certain peculiar temperaments; and, as such, well illustrate some of the topics under discussion in this chapter, and are reciprocally illustrated by them. These relations have been ably examined and commented upon; and proof given that all the more credible results of animal magnetism (and the

experiments of Baron Reichenbach come under the same class) may be obtained from a more natural source than that in which Mesmerists profess to believe." (pp. 32, 33.)

The "higher phenomena," however, seem only to be vouchsafed to those who are already either believers, or who are disposed to become so, or who are in that state of dogmatic incredulity, which, as we have just observed, is closely allied to the unquestioning reception of the whole series of mesmeric marvels. The philosophical sceptics, who require satisfactory evidence of the genuineness of what they see, and who insist upon probing and examining into all possible sources of fallacy, are unfortunately just the very people whose "atmosphere" is unfavourable to the manifestation of the clairvoyant and prophetic powers, just as the neighbourhood of a wet blanket prevents an electrical battery from retaining its charge. And until some neutralizing agency shall be discovered, we are afraid that the Mesmerizers must despair of ever convincing these very troublesome customers of the reality of the alleged phenomena; since, whilst they are ready to receive upon the testimony of others such facts as are conformable to their previous knowledge, they assert their right to decline admitting as of equal cogency, the testimony of the same individuals in regard to phenomena which are altogether beyond their own experience, or in complete contravention of it. Thus, for example, we have always felt ourselves fully justified in refusing to believe that Mr. Lewis, the negro Mesmerizer, lifted a man *off his feet* by the magnetic "traction;" notwithstanding that no less eminent an authority than Professor Gregory assures us* that this experiment has been satisfactorily performed. All that Professor Gregory himself saw was, that "when Mr. Lewis stood on a chair, and tried to draw Mr. H—— without contact from the ground, he gradually rose on tiptoe, making the most violent efforts to rise, till he was fixed by cataleptic rigidity;" a phenomenon by no means surprising when properly interpreted. But, naïvely continues Dr. Gregory, "*Mr. Lewis said*, that had he been still more elevated above Mr. H——, he could have raised him from the floor without contact, and held him thus suspended for a short time, while some spectator should pass his hand under the feet. Although this was not done in my presence, yet the attraction upwards was so strong, that I see no reason to doubt the statement made to me by Mr. Lewis, and by others who saw it, that this experiment has been successfully performed." And he goes on to assure us that he *did* himself see "this subject kept by Mr. Lewis's influence for some time in a position leaning backwards, in which he could not have remained for a second without falling, in his usual state, and in which he instantly fell, when Mr. Lewis's influence was removed." Now what says Mr. Lewis himself on this point? Having subsequently visited Aberdeen, where his pretensions were systematically investigated by several of the professors of the University, Mr. Lewis *distinctly disclaimed* the possession of any such power as that attributed to him by Professor Gregory, and stated "that he could only influence a person lying on the ground so as to make him start up, though others were endeavouring to hold him down."† What, now, are we to think of Dr. Gregory's

* Letters to a Candid Inquirer, pp. 351, 2.

† See Dr. Redfern's valuable statement of "Examination of Mr. Lewis's Experiments on Mesmerism," in the Edinburgh Monthly Journal, Feb. 1852.

expression of belief? and what credit can we attach to any one statement in his book, that goes beyond the bounds of our ordinary experience?

We must not dwell any longer on this topic, but must pass on to notice briefly the contents of the first of Dr. Holland's new chapters, "On Mental Consciousness, in its Relation to Time and Succession." The question which he proposes for discussion is as follows:

"Is our mental existence, as interpreted by consciousness, best viewed and understood as a series of acts and states, single at the same instant of time, succeeding each other with more or less rapidity of change, but in absolute and unbroken sequence?—or as a wide and mixed current, in which various sensations, thoughts, emotions, and volitions do actually coalesce and co-exist as to time, and are simultaneously testified to us by this common consciousness?" (p. 48.)

This subject, he justly remarks, has not yet been so clearly defined or explicitly treated as its importance merits:

"No adequate attention has been given to the singleness or exclusiveness of particular acts of mind—or to the rapidity of their succession—or to the conditions which produce and govern their change of state—or to the influence of the will, as the most important of these conditions. Yet each one of these points involves conclusions of great interest; and though the nature of the subject, which becomes a sort of analysis of mental existence, forbids the hope of certainty in such conclusions, yet is the approximation sufficient to warrant full inquiry. Whatever the power of comprehension of the mind at each instant of time, it is clear that there is a limit to the number of objects coexisting to the consciousness. How near this limit approaches to unity can never, perhaps, be proved or defined; but we may proceed far in the direction towards it, with constant reference to Time as one of the most important elements in the question." (pp. 49, 50.)

After pointing out the mode in which the enquiry must be conducted, he applies it, first, to the investigation of the sequential perception of sensations from without, and then to that of intellectual operations and emotional states; and arrives at what we believe to be the undeniable conclusion:

"That the consciousness, which gives identity to our mental existence, consists in a series of states incessantly pressing upon one another—from causes, and under conditions, which are in part external to ourselves, in part depending on the operations of the mind itself; but all so far subordinate to time, that the further we analyse them the more do we abridge their probable duration, and reduce them to a more single and exclusive form." (p. 60.)

He then goes on to what we regard as the most important part of the whole enquiry—viz., the power which the will possesses, of determining and controlling the succession of these states of consciousness; a power which, he justly says, "is very various in degree, but which, in its full possession, and in due exercise, involves all the highest intellectual attainments of which man is capable." In a subsequent page, Dr. Holland extends this statement to the moral part of Man's nature, affirming that his power of self-elevation depends upon the exercise of this control over the succession of his ideas. In this, too, we fully accord with him; having been long since assured, by the analysis of our own consciousness, that the influence of the will in the direction of the conduct is chiefly, if not solely, exerted, in *modifying the relative force of the motives* which are the real springs of action, by fixing the attention upon some of these, so as to keep them in a strong light before the mind's eye, whilst it withdraws the attention from

others, and thus virtually throws them into the background,—just as Dr. Holland well shows that it can do with regard to external objects of sensation. When a man is struggling with a temptation, and the motives to good and the motives to evil are nearly in equilibrium, like weights in the two scales of a balance, it does not appear to us that, as some would affirm, the will, acting as an independent power or additional motive, makes either scale preponderate at its bidding; but rather that it imparts an augmented gravity (if we may so express ourselves) to the weights on one side, by directing the attention to their value, whilst it diminishes the force of those on the other, by preventing the mind from occupying itself about them. And it is thus that “second thoughts” so often come to be best; and that haste in action so often leads to a wrong course. The disparity in the degree in which this power is possessed by different individuals, is a very common source of diversity, both in mental action, and in the conduct of life which proceeds from it. Thus, as Dr. Holland remarks:

“We every day meet men whose conversation is made up of rambling incongruities; who can hold to no subject consecutively; and who seem, and actually are, incapable of regulating the series and association of their ideas. Such minds are a curious subject of study; and often yield more to examination than those higher intellects which have gained, either from nature or exercise, the dominion wanting to the former. An argument with persons thus deficient,—fruitless, probably, in every other respect,—becomes a sort of analysis, by which we can discover the sudden and strange aberrations of thought, the faulty associations, and the disturbances from external impressions, which, unconsciously to themselves, perplex their whole intellectual existence.” (pp. 66, 67.)

There is another phase, which our author does not notice; that in which there is a full—perhaps even an extraordinary—measure of intellectual power, but a want of that determining control over it, which is necessary to keep it steady to any fixed purpose. Of this combination we find a typical example in Coleridge, who might be almost described as a thinking machine that would run on automatically to an unlimited extent when once wound up and set going, but who yet possessed scarcely any power of self-direction, either as regarded the course of his thoughts, or the actions of his life.

The practical conclusion of this chapter is most important, and cannot be too strongly or too early impressed on the mind of every one. The discriminating practitioner is so constantly witnessing the lamentable results of the want of early acquirement of habits of self control, that he cannot but regard it as one of the most important objects to be kept in view in the education of the young; no amount of intellectual acquirement being comparable in value with that power of self-direction, the possession of which constitutes, in our apprehension, the most essential difference between the psychical nature of Man and that of the more rational among brutes, and gives to him such ability as he possesses of striving to attain a higher elevation:

“Can this voluntary power over the course and succession of mental states—thus varying in different individuals, and limited in all,—be exercised and cultivated in such way as to enlarge its scope, and give it greater energy to resist the causes which control it? Experience answers at once, and unequivocally, that it may be so. The faculty in question is given us not merely to use, but to educate and exalt. It is eminently capable of cultivation by steady intention of mind and habitual exercise; and, rightly thus exercised, it becomes one of the highest per-

fections of our moral and intellectual being. By no quality is one man better distinguished from another, than by the mastery acquired over the subject and course of his thoughts—by the power of discarding what is desultory, frivolous, or degrading; and of adhering singly and steadily to those objects which enlarge and invigorate the mind in their pursuit." (pp. 67, 68.)

In the chapter *On Time as an Element in Mental Functions*, we do not find much additional matter. The following observation, however, is one of much interest; and many of our readers will be able, we doubt not, to confirm it from their own experience.

"In many cases of affection of the sensorium—as in the progress of recovering from apoplectic seizure, or generally in cases of partial coma,—a certain and often considerable time may be observed to elapse between a question asked of the patient and his reply. And this seemingly without any uncertainty as to the answer to be given, or any apparent fault in the act of articulation, except slowness and greater effort—but, rather, as if the mind received the perception more tardily than is usual or natural—or more slowly put itself into action through the external organs in reply. Occasionally, though aware of the fact from former experience, I have been led by the length of the interval to ask another question before the first was answered; this answer following afterwards, as if no such second question had intervened. Several cases I have noted where a full minute has passed before the organs were put into motion for articulate reply." (p. 70.)

The chapter *On Sleep* is one that is peculiarly fertile in valuable suggestions; and we attach particular importance to those that have reference to the doctrine which it is Dr. Holland's main object to enforce and illustrate—namely, that sleep must not be regarded as "a unity of state," but is "a series of fluctuating conditions, of which no two moments perhaps are strictly alike," "these variations extending from complete wakefulness to the most perfect sleep of which we have cognizance either from outward or inward signs." It is surprising, as Dr. Holland justly remarks, that this fact, brought constantly under notice by the most familiar experience, should be so little regarded in all common reasoning on the subject. The ordinary phenomena of that transition from the waking to the sleeping life which occurs every day of our lives, pass unheeded on account of their *naturalness*; and we satisfy ourselves with the result of the various influences which tend to produce this transition, without studying their *modus operandi*.

"But let it happen," continues our author, "that similar conditions are produced by mesmeric passes or other similar means, and the phenomena are looked upon with astonishment and awe. The deep interest which rightly belongs to sleep in its ordinary state, is excited for the first time by the unwonted manner in which it is brought on; and a great function of our nature, ever open to rational enquiry, is thus mystified and obscured by the manipulations of art." (p. 83.)

The so-called mesmeric sleep, he justly remarks in another part, does not differ so much from some forms of natural sleep, as these differ among each other; "the intermediate gradations express that general law of continuity which pervades and explains all these phenomena." And, with ourselves, he attaches great value to the phenomena of hypnotism,—the peculiar sleep induced by the fixed gaze at an object so closely approximated to the eyes as to require a considerable convergence of the optic axes, as was first discovered by Mr. Braid,—and to those of electro-biology, which is a state of reverie rather than of sleep, brought on by the same

fixed gaze at an object more remote. Observation of such states fills up the lacuna that would otherwise exist; and shows us how close a relation there is between the phenomena which present themselves in these various gradations, and the modes in which they are respectively induced,—a relation which may be legitimately extended also to the mesmeric sleep, and deprives it of all that in the eyes of the indiscriminating and uninformed enquirer, most strongly indicates a power brought to bear upon the subject of it by some external agency.—The whole of this chapter is well worthy of attentive study; as is also that which succeeds it, *On the Relations of Dreaming, Insanity, &c.* From this, however, we shall only extract the following passage, in which Dr. Holland notices the illustration which may be found of the phenomena of dreaming and insanity, in the waking moods of our minds.

“Dreams appear inconsecutive in the series of impressions and thoughts which compose them; and are so, in fact, in different degrees, according to the varying condition of sleep. But let any one follow with consciousness or immediate recollection the ramblings and transitions of the waking state, when the mind is not bound down to any one subject, and no strong impressions are present to the senses—and he will often find these no less singular, abrupt, and rapid in change; though the effect of such irregularity is here subordinate to certain regulating causes, which are absent during sleep.

“The admission of external sensations is amongst the most important of these. Their influence in correcting aberrant trains of thought is marked in numerous familiar instances; still more remarkably when causes of actual disorder are present. A person on the verge of intoxication feels confusion of thought rapidly coming on him when he closes his eyes, which is lessened or removed when opening them again; and such alternation may repeatedly occur. A patient under low rambling delirium will often pause from this when a question is asked him, or when any distinct impression is made on the senses; relapsing almost instantly again into the same state. Examples of this kind show how slight the line is, if line there be, which separates the healthy actions of mind from those of morbid nature. (pp. 125, 126.)

The title of Dr. Holland's chapter *On the Memory, as affected by Age and Disease*, includes, as he remarks, some of the most curious phenomena which come under the notice of the physician. But the subject, both in its physiological and in its psychological aspects, is one which seems almost to baffle enquiry, so strange and diverse are the changes which this faculty undergoes. Dr. Holland's main object, here as elsewhere, is to connect the perversions which we see it to undergo from disease or accident, with its normal operations; and he points out many very interesting relations of this kind, which are well worthy of careful consideration. He draws an important distinction near the outset, which we have ourselves frequently had occasion to make, but which has been very commonly overlooked, between *simple memory*, and the act or faculty of *recollection*,—between the mere assemblage and aggregation of materials in the mind, and the power of recalling and combining them by a voluntary effort. It seems probable that no change ever takes place in our consciousness, without leaving an *impression* behind it, which may be revived at some future time, however remote, either by suggestions independent of the will, or by a voluntary act of recollection (which we believe to be nothing else than a revival of the desiderated impression by suggestions purposely brought to act upon it), or, it may be, by the return of a certain

set of physical conditions which act more directly than through the channel of suggestion, as in the delirium of fever. And that our recollection of even the most familiar things is due to the power of voluntarily directing our thoughts, is most curiously shown in the (so-called) "biologized" state, in which the subject, on being assured that he cannot remember the most familiar thing—his own name for example—loses his power of recalling it, through the very conviction which for the time possesses his whole mind, of the impossibility of the act. Now, this is only an intensified condition of a state of which almost every one must be occasionally conscious, in which the anxious doubt of success itself becomes the cause of failure, because "it interrupts by its presence those trains of association upon which recollection depends;" whilst "restored confidence repairs the failure, by excluding this cause of disturbance, and enabling the mind to concentrate itself again upon its object."

In the chapters *On the Brain as a Double Organ*, and *On Phrenology*, we find so little that is new, that we need not stop to comment upon them. That *On Instincts and Habits*, on the other hand, being entirely new, and presenting the subject in an aspect which is in many respects novel, seems to call for an extended notice. Our limits, however, do not enable us to say more, than that the subject is treated in a thoroughly philosophical spirit; a broad basis being laid in a comprehensive survey of the phenomena; and the relations between the different groups of these being pointed out with that discrimination and sagacity which are so abundantly displayed in Dr. Holland's other writings. The essential correspondence between the purely instinctive actions of animals, and the various gradations of automatic action in man, is the point upon which he most dwells.

A large portion of the last chapter, *On the Present State of Inquiry into the Nervous System*, is altogether new; and much of what has been transferred from the volume of which the chapter originally formed part, has been rewritten, in accordance with the present state of our knowledge. Of the new matter, a considerable proportion bears upon those *dynamical* relations, which the progress of enquiry seems to indicate that nerve-force possesses, on the one hand, to the physical forces, and on the other, to mental agency: this is a question, however, which we propose to consider in our next number; and we shall therefore postpone until then any notice of Dr. Holland's cautiously-expressed but very suggestive views.

In taking leave of our author for the present, we again tender him our thanks for this very seasonable contribution to a department of enquiry, which no one possesses such opportunities of promoting, as the physician who is prepared for it by his previous studies and habits of thought; and which no physician with whom we are acquainted, has shown more ability than himself to pursue.