

bare sensation of heat, when one stands before a fire and is *not unaware* of the warm sensation. That is one thing—as near as we can get perhaps, to “mere consciousness.” But when one awakes from the reverie and *notices, attends to, perceives* the sensation in question, in that moment an immense difference has been introduced. A veritable *salto mortale* has taken place. The warmth of the fire is no longer a *mere sensation*, a half-conscious blur of evanescent feeling—it is a *perceived sensation*, a fixed point with all sorts of relations to everything else in our experience. It has become a *fact*.

This, then, may serve for an illustration of what we mean when we challenge Dr. Maudsley and his school to explain what they mean by “our pleasure.” We hold that any real explanation of that phrase cannot fail to imply, in some form, a Self, which is more than a function of nerve vibrations—which is a unity beyond and above them—related to them actively and relating them to one another and to itself—and thereby giving to them all the meaning they have as facts of our experience. Even among the nerve-tracks themselves, therefore, and from the bare consideration of Dr. Maudsley’s own theory of knowledge, we find support for this ubiquitous “*manie de grandeur*,” the metaphysical ego. We shall find further necessity for it, when we come to consider the Ethics of Physiology.

OXON.

(To be continued.)

Visions: A Study of False Sight. By EDWARD H. CLARKE, M.D. Boston, 1878.

The circumstances under which this work was written, as well as Dr. Clarke’s repute as the author of the clever books on “Sex in Education” and “The Building of a Brain,” strongly enlist the prejudices of a reviewer in his favour. He was found to be labouring under malignant disease of the rectum. In the interval between his knowledge of his fate and his death, he resolutely set to work to study the phenomena of false sight. Thus carried out in the midst of intense bodily suffering, increased by the grief of losing his wife, who acted as his amanuensis, the result is itself a remarkable illustration of the influence of the mind over the body, a determined will over the usual effects of physical

pain. "At length the pen dropped from his hand," says the Editor, Wendell Holmes, "the mind ceased from its labours, he lingered a little longer in a state of being that was divided between anguish and stupor, and the end, long wished for, came at last." Truly it is "a lesson of manhood too precious to be forgotten."

A posthumous work, it labours under one disadvantage from which it would have probably been freer had the author been able to revise it with his own hand. There is too much repetition. Another fault is that the writer speaks too much as if he thought that the leading ideas of the treatise were new and his alone, instead of being long known and acknowledged by physiologists. This remark does not apply to the details of the process by which morbid visual phenomena are produced. Here questions arise which admit of some difference of opinion, and the author has taken great pains in endeavouring to unravel the successive physical events, his ability and ingenuity giving an intelligent completeness to the whole *modus operandi* which constitutes the value of the book. The style is also singularly charming, and many of the cases of pseudopia very interesting.

Every one who has paid the slightest attention to the pathology of hallucinations knows that the fundamental principle upon which their explanation rests is that there is no sensorial phenomenon excited by the presence of external objects upon the peripheral terminations of a sense-organ which cannot be produced by excitation of its encephalic centre; that is subjectively. The terms "objective" and "subjective" have been found fault with, but we know of none so convenient, and cannot admit that they are open to any serious objection. To say that in order to come within the range of consciousness, all objective phenomena must ultimately become subjective, does not carry any weight with us. Whenever a sensation is produced by something without, we call it objective; whenever it is produced from within, subjective. The course pursued by the one is from without inwards—centripetal; that by the other is from within outwards, centrifugal; the former is eccentric, the latter centric. This elementary principle applies, of course, to all the senses, but in considering Dr. Clarke's book, our attention will be mainly confined to the visual organs. Taking the ordinary course of phenomena in healthy sight—the physiology of vision—we know that rays of light reflected from an external object upon the eye stimulate the retina to exercise its

appropriate function—an image is formed—and this is conveyed through the optic nerve to the corpora quadrigemina, and from thence, after the co-ordination in this centre of the image on the retina with the correlated movements of the iris and delicate adjustment of the eye, to the angular gyrus, where the image comes within the range of conscious vision, and is in some way, no word which we can employ adequately describes, recorded or registered, so as to constitute organic memory. However we may explain in detail the stages of this process, it is roughly thus, that visual images of external objects are in the vast majority of instances formed in the mind.

Then, commencing from the cerebral or mental centre, excitation of the central cells without any object in the outer world having been brought into relation with and excited the retina, sets the same apparatus in motion in a reverse order, with the result of a representation of the object, either in idea only, or under certain exceptional conditions with such vividness as apparently to project it into space, thus constituting “visions”—the subject of the work before us.

All, so far, is in accord with generally received modern physiology, and we think, as already intimated, that a reader of this book, not acquainted with the works of Bain, Spencer and Ferrier, would suppose that the doctrine of subjective sensations, as laid down by Dr. Clarke, was so taught by him for the first time.

Then further questions arise, as what are the parts of the brain engaged in health in the mental operations which succeed conscious visual perception in the angular convolution? And what really constitutes the difference between the representation of an image in idea only and in perceptible form? Is the whole channel from centre to circumference as necessary in actual hallucination, as it is from circumference to centre in healthy sight? On the first question, Dr. Clarke speaks with considerable certainty of the processes carried on in the frontal lobes. Here, according to him, vision is transformed into ideas, and perception recognises the transformation. Perception also recognises the intellectual and emotional activity to which the transformation leads.

“Perception in the frontal lobes is therefore something more than perception in the angular gyri; it is sensation and intellection” (p. 130). In the frontal lobes, perception “becomes what Leibnitz

called *apperception*, or perception that reflects upon itself. When sensory ideas, whether visual, auditory, tactile or other, enter the domain of self-consciousness, they are studied in all their relations to the external world and to the *ego*. Thus, investigation, which is *apperception*, is a function of the frontal lobes. It is clearly different from the simple perception of the existence of an object, without regard to its details, such as occurs in the tubercula quadrigemina, and to which perception in that centre is limited; it is equally distinct from the perception of the existence of an object, with a comprehension of details, but without regard to the relations which the object sustains to other things, or to attendant conditions, such as occurs in the angular gyri, and to which perception in that centre is limited" (p. 132).

Thus if, for instance, a horse is consciously seen by the angular convolution, the picture of the horse is according to this view transmitted to the frontal lobes. Thereupon these lobes "look" at the horse, ascertain its significance, determine its probable action, communicate with the emotions, and decide the will to act.

Into this description, when we get beyond the visual functions of the angular gyri, a considerable amount of theory enters. But whether the frontal lobes have or have not the functions here assigned them, the second question remains, whether there is a difference in the part of the cerebro-retinal track excited, according as there is or is not a distinct image of an absent object formed not only in "the mind's eye," but projected into space? While it will be admitted that the representation of an object in the angular gyrus excites the activity of the same cells as were originally called into play when they were impressed by an external object, and that thus the form is mentally recalled, it is more difficult to realize that the mere intensifying this recollection in the same locality is sufficient to cause the appearance of a figure outside the person—in short, a vision.

It is interesting to recur here to the past history of the discussion in regard to the parts affected in the visual apparatus, when subjective vision occurs. Müller, although he was well aware that amaurosis does not prevent the presence of phantasms, and that in such an instance his position could not be maintained, held that "the idea in the sensorium excites the active state of corresponding particles of the retina or optic nerve." That an idea, by acting on the retina should produce an image was, he said, no more extra-

ordinary than that an external object should be reflected there. Sir David Brewster discussed this question half a century ago, and in reviewing Abercrombie's "Intellectual Powers," endeavoured to rebut the opinion that in the act of memory, the "organs of perception" are not required. He held that memory depends upon a faint excitement of the original impression on the retina, while the appearance of a spectre arises from a very powerful revivication of the retinal impression. The late Dr. Symonds discussed the subject of the probability of the retina being essential to optical illusions and hallucinations with his usual acuteness, and arrived at the conclusion that transmission to the retina is possible, but that the reproduction of a sensation as in seeing phantasms takes place independently. The position of Bain and Spencer, that the same nervous tracks are travelled in thinking of or remembering an object and seeing it has reference to the encephalic visual centre, and not the part taken by the peripheral expansion of the optic nerve in hallucinations. Recent researches into the functions of the brain, have added to our knowledge of the apparatus of vision by the discovery of a visual centre in the hemispheres. At the same time it has not been shown that there is any improbability in the back wave of sensation being carried as far as the retina in certain cases of hallucination of sight, while it allows us to believe that in this hemispherical centre, subjective sensations of sufficient intensity to cause distinct visions may have their seat. Simply thinking of an object—*e.g.*, a flower—may be a mental operation carried on in another hemispherical centre—but mentally picturing its form, colour, &c., requires the visual centre.

It is probable that in different cases of hallucination different lengths or stages of the sensorial track, so to speak, are involved. Recently we carefully interrogated a patient who was doing singular acts, the consequence, he said, of hearing voices commanding him to do them. We found, however, on questioning him, that these voices sounded to him quite different from those he heard with the external ear. He said they were heard internally, and were not accompanied by sound. Here, whatever part of the central organs was affected, the peripheral terminations of the auditory nerve were certainly not reached by the current originating in the brain centre. In other cases the patient distinctly hears a voice; as distinctly as Cowper did, who, when words of comfort were spoken to him through a tube

into his bedroom, did not detect the difference between them and the voices he was accustomed to hear uttering notes of woe. Then the periphery may have been reached so entirely that sounds were heard quite as clearly as if vibrations had been set in motion by an external, instead of an internal force.

It must be remembered that visual impressions may be so stored up in the cerebral centre that although when the retina is intact hallucinations of sight have their seat there, they may, when the retina ceases to perform its functions, be manufactured out of the reserve fund, so to speak, in the angular gyrus. It is probable that in proportion to the length of time the retina has had its function destroyed, hallucinations would not be likely to occur, or be very faint.

In the following case, recently communicated to us by a gentleman to whom the incident occurred, the explanation is transparent enough. Being a Liberal in politics, the auditory hallucination took the particular form which it did. Had he been a Conservative, the ex-Premier would have been substituted for the Premier, and Mr. Lowe for the present Chancellor of the Exchequer. Our correspondent's experience does not, therefore, ruffle our political susceptibilities in the least.

On the 24th Jan. I noticed in the papers that the Government had had two or three Cabinet Councils. I was very little excited about it, but merely felt a slight curiosity to know the cause of these consultations. Next morning, about 5.30 a.m., being in bed, I woke with my mind empty, as it ought to be after a sound, refreshing, and dreamless sleep of about four hours. Immediately I heard the voice of a man making a speech, addressed, as it seemed, confidentially to some of his friends. I listened with great interest and attention to a well-composed political speech from a Conservative, in the mild, bland style of Sir Stafford Northcote, complaining of the extreme difficulty and embarrassment which afflicted the Cabinet from the frequent and extraordinary variations of mood and temper in the Premier—sometimes positive, wilful, and arbitrary; at other times, no one could be more indulgent and forbearing towards those of the Cabinet who differed from him. "So sudden and unexpected are these variations," said the invisible visitor, "that we are continually kept in a state of suspense, anxiety, and apprehension as to what proceedings we may be committed to. These are the causes which have necessitated so many recent consultations of Ministers." While the long speech, which would have occupied two columns of the *Times*, was gliding through my brain, I felt a desire to rise, light my lamp, and take down the words and sentiments so totally dif-

ferent from anything that I could write or think. But this desire was immediately extinguished by the conviction that if I did not remain perfectly passive, and refrain from every thought or act of my own, the whole would vanish from me like a dream. I remained passive to the conclusion of the oration. Unfortunately I was then utterly incapable of dragging from my memory more than a single sentence in the speaker's own words. Nothing remained but a general impression of the effect the speech produced in my mind as I listened and admired its admirable composition. One thought was, If all this be true, I ought certainly to view the conduct of the Premier with more charitable extenuation than I have hitherto done; the other, Do not all these details I have listened to betray symptoms of incipient insanity? This experience, and many similar ones, prove to me most exactly the condition of so-called "writing or speaking Mediums," the only difference with me being that the attempt to write would have brought me out of the subjective into the objective state directly.

Returning to Cowper's case, we do not maintain that the periphery of the auditory nerve was necessarily reached, because inasmuch as people can see spectral figures when their eyes are removed, solely from the resuscitation of the images which have been registered on the visual centre (or combinations of the same), Cowper may have heard what appeared to be distinct sounds simply in consequence of the intense action of the auditory centre acted upon by the ideational and emotional centres. The fact that a man whose eyes no longer exist can see visions is parallel to the case of the man with an amputated leg, who feels pain in his foot. To most people it is more difficult to credit the one fact than the other, on account, we presume, of the apparently greater complexity of the operation by which an image is formed than that by which the sensation of pain is felt.

A medical friend, not disposed to be imaginative, once had a vision which he thus describes :—

A patient in whom I was very much interested was sinking under a fatal disease. I had seen her in the morning, and found her getting worse, though apparently not likely to die within a few days. On retiring to bed that evening as usual, I slept well till about three o'clock in the morning, when I awoke and saw at the foot of my bed a light like a luminous cloud, which at first made me think it was the reflection of a fire outside my window. As I looked and wondered what it could be (rubbing my eyes to be quite sure I was awake), I saw distinctly the form of my patient, with her features clear and defined, float across the foot of my bed from the door towards the window and

disappear. She looked very earnestly at me as she passed. The "vision" occupied fully five or six minutes, and I was so struck with the circumstance that I got up, and ascertained that it was a quarter past three by my watch. I then went to bed again, and slept soundly till morning. At half-past seven o'clock, when my water was brought, the maid informed me that a messenger had just arrived to say that Miss — had died at a quarter past three that morning.

This is as remarkable a vision as any recorded by Dr. Clarke.

Another medical man, who had the most vivid "optical illusions," he being perfectly well aware of their true nature—the coincident occurrence of a vision and a death not forming part of the interest of the case—was induced by us to draw the portraits of his visitants, and, being a facile draughtsman, he produced an interesting series. In some instances they were faces with which he had once been familiar; in others, they were entirely new combinations of features. They appeared to him to be in his retina, but whether the tests he employed to ascertain this were sufficiently accurate we are unable to say.

Ferrier fully allows that the peripheral extremity of the nerve, as well as the sense-centre, may be excited by internal stimuli, where he observes that "The molecular thrill of present sensation extending from the peripheral organs of sense, is in the ideal sensation revived, but, as a rule, not so powerfully as to extend to the periphery; though in rare instances the central revivication may be so intense as actually to re-induce the peripheral impression. This occurs in certain morbid states, such as are described under the name of 'fixed ideas,' or, in sensory hallucinations, from diseased conditions of the brain, as in epilepsy and insanity." ("The Functions of the Brain," p. 259.)

It is very certain that although if a lunatic labouring under an hallucination of sight had his eyes removed, he might still believe he saw an external object, he would immediately cease to see it if his angular gyri were destroyed. Some ideational centre in the hemispheres must no doubt have been diseased, to render him unable to recognise the nature of the phantom (or he would not be a lunatic, but only the healthily mental subject of an "optical illusion"), and this would remain diseased after the ablation of the angular convolution; but while he might have "fixed ideas," he would no longer have subjective visual sensations.

We suppose that a man in mental health, but without his

angular gyri, could not do more than think of an object he had once known, as, for example, a rose. He could not any longer recall its form. If organic memory of an object resides only in the visual centre, it is difficult to suppose he would ever be able to do this. Speaking of an animal in whom the visual centre has been removed, Dr. Ferrier observes that this not only makes it blind presentatively, but blind representatively, or ideally, and all cognitions into which visual characters enter in part or whole become mangled and imperfect, *or are utterly rooted out of consciousness*" (p. 261).

Subsequently, Dr. Ferrier speaks of "visual memory and visual ideation," but we do not suppose he intends it to be understood that he would refer these functions to different centres, as Dr. Clarke would do—one, namely, being seated in the angular convolutions, and the other in the frontal lobes.

We must not conclude this review without adding that Dr. Clarke was not so sure that his plummet had sounded the depths of all the mysteries either of life or death, that he could positively assert the impossibility of a real "vision." The physiological explanation which he adopted sufficed him in 99 cases out of 100, but he felt some misgivings as to the hundredth. He thus writes of a case he witnessed :—

It was night. The departing one was a lady of middle age. Her death, though momentarily expected from heart disease, was not announced or preceded by the usual anæsthesia of the dying. During the night, when awake, her mental action was perfect. She conversed a few minutes before dying as pleasantly and intelligently as ever. There was no stupor, delirium, strangeness, or moribund symptom indicating cerebral disturbance. Her cardiac symptoms alone foreshadowed the great change. After saying a few words, she turned her head upon her pillow as if to sleep; then unexpectedly turning it back, a glow, brilliant and beautiful exceedingly, came into her features, her eyes, opening, sparkled with singular vivacity. At the same moment, with a tone of emphatic surprise and delight, she pronounced the name of the earthly being nearest and dearest to her, and then, dropping her head upon her pillow as unexpectedly as she had looked up, her spirit departed to God who gave it. The conviction forced upon my mind that something departed from her body, at that instant rupturing the bonds of flesh, was stronger than language can express. . . . If ever a scene like this occurs, who will dare say that the explanation of it may not come from a height inaccessible to our imperfect physiology? (p. 279.)

As the whole current of the teaching of this book is in the direction of a purely material explanation of phenomena of this description, we have thought it due to the author and to the reader to cite this exceptional observation. It is probable that the latter, not having been, like Dr. Clarke, in actual contact with the case, will not be impressed in the same forcible manner; for it is scarcely possible to convey to another the same impression as we ourselves have received, and to produce, therefore, the same conviction of its meaning.

Aus meiner Psychiatrischen Wirksamkeit, Eine Adresse an die Practischen Aerzte. Von Dr. C. M. BROSIUS. Berlin: 1878.

Die Asyle Bendorf und Sayn bei Coblenz und die damit verbundene Colonie für Gehirn, und Nervenkrankte nebst Bemerkungen über Curmittel bei Irren. Von Dr. C. M. BROSIUS, Director der Asyle, &c. Berlin: 1875.

Dr. Brosius, the editor of "Der Irrenfreund," has written a short account of an institution which derives part of its interest from its situation in the most beautiful part of the Rhine scenery, the unrivalled panorama of Coblenz; as the doctor says, "ein Stück Gegend voll Anmuth und Lieblichkeit." It is a private institution for a small number of patients, to whom Dr. Brosius has devoted his time and skill during the last two-and-twenty years.

The chief interest, however, arises from the carrying out of Dr. Brosius's leading idea, which is to place suitable cases in private dwellings in the neighbourhood of the asylum; the latter being always ready in the event of a patient becoming unmanageable. The patients are all of the opulent class. There is also a small house in which some patients sleep, but take their meals in the asylum. During 1870-74 twenty-two patients were admitted to this miniature colony, apart from the asylum. On a small scale such a system answers admirably. It is when the size is large, and anything like a real Gheel is approached, that difficulties and abuses are encountered. "Looking at the fact," says the author, "that many of the insane live, and also are cured, partly in their own families and partly at a distance from them, out of an asylum, no one will contend that the latter is the only possible mode of