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ADDITIONAL OBSERVATIONS ON THE CASE OF MRS. CASS, THE STANSTEAD SOMNAMBULIST.

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[Communicated for the Boston Medical and Surgical Journal.]

HAVING been the attending physician of Mrs. Cass (whose case appeared in one of your late numbers), for several years past, I deem it proper to give some account of her situation since she has been under my care, as well as a more detailed statement of the symptoms in her late sickness, in order that the pathologist may better understand the character of her complaint, and form a more rational conclusion with regard to its nature.

In recording a case of unusual character, I conceive it highly important to note every feature in its history which may tend in any degree to elucidate its nature. It is more particularly so in cases which apparently contravene established laws, and which, though recorded by an angel, would pass unregarded by the skeptic. I am induced to make this remark, in consequence of a communication, entitled "Laws of Nature Inviolable," which appeared in the January number of your Journal (p. 330, Vol. 9), in anticipation of the report of the Springfield case. That paper requires a passing remark. In perusing it, I was struck with the unfairness of thus notifying the "respectable physician" of that patient that the case was "a violation of the laws of nature," and that "all the testimony in the world would not be sufficient to prove such a fact." By those who disregard all testimony, we do not expect to be heard; but we believe there are those who are not so wedded to human systems as to reject all facts which come in collision with received philosophical axioms. If facts are to be rejected, the inductive principles of Bacon will no longer give certainty to science, and they, of course, will be rejected by all who refuse to be convinced by the weakness of human testimony. I recognize the correctness of the position, "the laws of nature inviolable;" but I deny its applicability to the case under consideration, for I have yet to learn that there are any fixed laws in physiology or pathology which should render the occurrence of such a case improbable. The relation existing between organic movements and intellectual operations is not yet fully understood. We are conscious of sustaining relations with the objects of the external world, and we know that the nerves of sense constitute the medium of these relations. The retina, the sneiderian membrane, the skin, &c. are places of distribution of nerves of sense; and the impressions produced by external objects on these surfaces of relation, are transmitted by their respective nerves to the centre of perception—the cerebrum. All our ideas are excited in the

brain, and not in the external organs of sense ; and although the experiments of Dr. Darwin prove conclusively that they are dependent on or connected with organic movements, yet they do not establish the point that "all vision is owing to the activity of the retina." From the evidence I have had before me, I cannot assent to the assertion that "where no light is transmitted to the eye, there can be no vision of that object." Although this be true in the normal state, it is not so in all disordered states of the brain and nerves of sight.

The history of somnambulists proves that the doubted peculiarity of vision does exist, and in many cases constitutes an essential part of the reverie. A case of this kind is mentioned by Dr. Darwin, as reported in the *Lausanne Transactions*. I do not conceive it improbable that there should be a metastasis of the peculiar sentient principle of the optic nerve to the nerves of touch, in a certain pathological state of the brain. Such a change would not be a "violation of the laws of nature," for like changes take place in the functions of organic life. The eye is simply an instrument to bring the rays of light in a more concentrated form, and without derangement of order, from an object to a small surface—the retina—that the peculiar sentient principle of the optic nerve might receive and transmit a specific impression. Those who consider sight as depending on the presence of images painted on the retina, may object to the possibility of a transfer ; but the idea is evidently founded in error. The retina has not a reflecting surface : on the contrary it has a dark absorbing surface, through which the rays of light penetrate and excite specific portions of this nervous expansion into action. This excited portion corresponds with the form and color of the external object. It is the transmission and perception of this impression that constitutes vision. Vision, then, does not require an organ for the painting of images, but simply a sentient surface on which the rays of light may be received from every point of an object. This surface must be endowed with the peculiar susceptibility which enables a part to be excited by the stimulus of light. That this susceptibility may be transferred to the sense of touch, in some disordered manifestations of the brain, I think apparent in the case of Mrs. Cass. Indeed she appeared as though surrounded by a nervous halo or atmosphere, which gave her intelligence of everything around her without the range of ordinary vision.

As many of the most important phenomena have been mentioned by my colleague, Dr. Barnard, I shall confine myself to a notice of her general habit, with the most prominent symptoms of a previous illness, and also to the enumeration of some circumstances omitted by him. It is now more than five years since she first came under my care. At that time her system was excessively irritable ; she was confined to bed ; pulse small and contracted ; had much tenderness of the epigastrium, with much fulness. She suffered greatly at times with severe pains about the head, apparently of a neuralgic character, though accompanied by much heat. She had at various times taken much calomel, and her glands were excited by the smallest quantity. Her stomach was highly irritable, and rejected most medicine. This was the third severe sickness, which had continued through the summer. After pursuing a mild unirritating course, she gradually recovered so far as to be able to attend to

her household affairs. Since that time her pulse has been habitually small and hard, and uniformly about eighty in a minute. She has been much emaciated, her voice husky, and she has had a short dry cough. Her menstrual turns have been frequent, and continued long, but the discharge has not been very profuse. She has also been much afflicted with leucorrhœa. She has not so much of the palpitation, faintness, and fluttering of the præcordial region, as usually attends the latter difficulties. Her bowels have been rather confined, and saline purgatives have irritated her less than others. The epigastrium has been uniformly tender, and rather full; she feels every sudden emotion very sensibly there. Her stomach is irritable, and she takes but little food. The secretions of the liver have been less disturbed than usual where there has been gastric derangement of so long continuance. There has, also, been less tenderness of the spine than we usually find in long-continued disturbance of the digestive organs in habits so irritable. She has been subject to frequent ill turns, in which there has been an aggravation of the pain and tenderness of the epigastrium, with severe pains in the head and occasionally in one side. Her sleep at such times has been disturbed, and attended with much talking and convulsive movements of the tendons.

On the first of May, 1833, I was called to see her in consequence of a severe pain in her side. When I arrived, the pain had become transferred to the fore part of the head. She moved her head incessantly, and had much to say about water in it.

May 2nd.—Found her not at all relieved by the bleeding, cathartic, and blister to the nape of the neck, which had been directed. The distress in her head was now extreme, and she was entirely blind. The pupil of the eye was largely dilated, and manifested little or no disposition to contract on exposure to a strong light. I took a few ounces of blood from the temple with cups, but it aggravated her suffering. During the ten days following, her symptoms were nearly the same; she had no other sleep than a state of reverie, which was distinguished from her waking hours by a degree of wit and sarcasm, mixed with her groans and suffering. During these reveries she was not conscious of being blind, but said she could see if it was light. At this time her stomach was so irritable that she was able to bear but little food or medicine. About the 12th day she had spasms about the jaw and extremities, which soon became, by turns, general. There was now much sinking, and she took small doses of quinine with benefit. About the 15th the spasms gradually subsided, and there was quite a change in her reveries. She appeared to acquire a poetic faculty, and would change every subject introduced to her, into rhyme. This trait was more peculiar, as she had never discovered a taste for poetry. Her effusions were chaste, and partook rather of a religious character, which was in unison with her feelings when awake. She composed several pieces, and among them two on the death of some children who died a short time previous to her attack. She also composed one on her present illness, giving a description of her sufferings, the inefficacy of remedies, and predicting a fatal termination. These effusions evinced a glowing activity of some of the faculties of the mind, while others were in sleep; and yet every feature, as well as the pulse, indicated agonizing pain. In her reveries, she

recollected well all her poetry, and would repeat it when requested. This state continued about a week, at which time she began to recover her sight. After this, her reveries continued, but she lost her poetic powers. It was near a month from her first attack before she had any other sleep than the state of reverie. She was long in recovering her usual health, and during the summer she had several turns of blindness, the longest of which continued half an hour.

Her last and severe illness commenced on the 21st of December. I saw her about 11, P. M. of the same day. She had been sick about five hours, and in that short period her tongue had become dry and dark, and the teeth encrusted, as I have seen them in the last stage of fever. The heat about the head was greater than I had ever seen in any case, and her distress appeared too great for endurance. There was considerable delirium, with constant turning of the head. The epigastrium was full, and the slightest pressure aggravated her suffering. Pulse small, hard, and 100 in a minute. I took some blood from the arm, gave her one or two grains of calomel with five of hyoscyamus, and directed sinapisms to the nape of the neck and extremities, with occasional small doses of Epsom salts. She continued in this high state of excitement till the fourth day. The delirium had now disappeared, and her tongue was more moist and less dark. Although her stomach was highly irritable, yet she had been able to retain sufficient medicine to procure from two to three alvine discharges daily. On the second day it was evident that she had lost the power of vision; yet she appeared so much distressed on the approach of a light, that we were obliged to keep the room darkened. On the fifth day she was rational when awake, and complained much of her head and stomach. The pain was confined principally to the anterior part of the head, though she occasionally complained of its passing from the orbit directly through the brain to the occiput. She was now able to discern an object passing between her and the window, but could not distinguish its form. Her reveries were now distinctly marked. She had much starting of the tendons from the first, but no fixed spasms till the evening of the fifth day from her attack. At this time she had general and fixed spasms of the extremities, which continued half an hour. I found her an hour after very low, extremities cold, with fixed rigidity of the muscles of the lower jaw. She now complained of excessive tenderness of the whole scalp, more particularly of the anterior part, as well as of the upper part of the face. These spasms continued at short intervals for nearly a week, but were not particularly severe, except in the evening, near the time she was first attacked with them. As the general spasms subsided, there was a change in the spirit of her reveries. She now manifested the same poetic powers as were developed in her sickness in May. For a time most of her conversation was in rhyme, and she spoke without the least apparent effort. Her reveries continued the greater part of the time, being evidently prolonged by the questions asked by her attendants, as well as by visitors, for the purpose of writing down her poetic effusions.

After the development of her clairvoyance, an account of which has been particularly given by Dr. Barnard, she seemed to lose her poetic talent, and was much given to prayer, exhortation and singing. During

these exhibitions of her powers, the vital energies of the organic functions appeared, almost, to leave their posts to aid in the development of the mysterious intellectual phenomena : her pulse became feeble and scarcely perceptible ; her extremities cold, while her face became flushed, and the heat about the head greatly augmented. All efforts to arouse her from these reveries proved unavailing, and often appeared to increase their intensity and duration. Whenever she awoke, after these exhortations, her strength was exceedingly prostrated, her pulse and voice scarcely perceptible, and she complained of intense thirst. On the 8th of February I found her very low ; her stomach had rejected everything for twenty-four hours, and she appeared more distressed in her stomach and head than usual. Not being able to awake her from reverie, I cupped her on the region of the stomach while in that state. Whilst in the act of applying the last cup, she awoke, and I had occasion to regret my imprudence, as surprise and terror very nearly exhausted the feeble flame of life. On the 9th, Dr. B. succeeded in allaying the vomiting with small doses of musk. On the 10th, in the evening, I found her more feeble than I had ever seen her. At this time she told me, in a reverie, that if she was cupped four times on the stomach and put into the warm bath, it would help her. This was the first suggestion of the bath, and we determined to make trial of it. In addition to the effects mentioned by Dr. B., I would mention its effect in removing almost entirely the excessive tenderness of the scalp, which had continued from the first occurrence of spasm. Although she was relieved by the bath, yet she continued low ; pulse about 50, and hard ; her reveries continued, but without mental illumination. The last applications of the bath evidently proved injurious ; they increased the hardness of the pulse, and prolonged her reveries.

About the middle of March, while attempting to give her some slight electric shocks, I accidentally gave one rather severe. It produced a general convulsive movement. She complained of sickness and distress at the stomach, and sunk immediately into a reverie, which continued several hours. While recounting, in her reverie, the unpleasant sensations produced by the shock, she often had a repetition of the same convulsive movements.

Her convalescence has been long and tedious, and she is far from possessing her usual health. The galvanic plates produced temporary relief, but she declines wearing them longer. While in the use of them, she rested without talking in her sleep. She is now more emaciated than usual, and her countenance indicates visceral organic disease. During the first three months of her illness, her sleep was mostly reverie. Since that time, she has had natural sleep, though often disturbed by sleep-talking, and also by turns of somnambulism. She recovered her sight early in the spring, and is at present able to do some light work.

I can attest to the general correctness of the communication of Dr. Barnard. I was not satisfied that she possessed knowledge of the true time. She had, however, her own notions of time, as compared with that of the watch, but we had no positive means of ascertaining her correctness. Her knowledge of whatever was going on in the room, appeared absolute. She not only recognized individuals, their dress, &c.

as they came in, but she noticed every change in the furniture ; a vial, or the smallest article, could not be moved without her knowledge, and this when her face was inclining to the bed and towards the opposite wall. These are facts which can be attested by great numbers, whose *evidence* would be sufficient in any judicial investigations.

From the observations I have been able to make in this case, I am disposed to assign the seat of irritation to the gastric branch of the pneumo-gastric nerve. I have been led to this conclusion by observing the direct relation between the stomach and the cerebral phenomena, while the other relations of this organ, through the medium of the great sympathetic, have been but little modified. This view is also supported by the morbid sympathetic relations of the lungs and larynx, as manifested by the short, dry cough, and the husky voice. Perhaps the measured uniformity of the pulse may be ascribed to the same cause. The uniform tenderness of the epigastrium, as well as the fact that any considerable pressure on that region would produce an excitation of the motor nerves, with convulsive twitchings of the jaw and limbs, often followed by reverie, evince a morbid sensibility of the gastric nerves in most direct relation with the cerebrum. The painful sensation produced by the electric shock was first perceived in the stomach, and its effects upon the cerebral nerves were the same as those from direct pressure upon that organ, or from the introduction into it of indigestible substances. The circumstance that turns of reverie might be induced by direct irritation, shows it but little allied to natural sleep.

Dr. Darwin considered reverie as a disease of the epileptic or cataleptic kind ; but as the mental manifestations are more or less under the control of the will, this view of it is objectionable.* Whatever may be the pathological state of the gastric branch of the par-vagus, it is evident that its sensibility is in a morbid state of exaltation, and perhaps the peculiarity of some of the mental phenomena may be owing to the modifications of the instinctive sensations, and their influence upon the cerebral organs. In the lower animals, these instinctive or "general feelings" determine the movements of the migratory tribes with the greatest accuracy. Dr. Good observes, that "the bat appears to be sensible of the presence of external objects and obstructions that are

* A case of epilepsy, or perhaps catalepsy of the mind, once came under my observation. John Drew, aged 21, came to me more than five years ago. He appeared in perfect health ; countenance full and rather flushed, and all the functions apparently in a healthy state. His father informed me that he had turns of being "absent-minded"—that he appeared to lose consciousness for the space of a minute, and that he would remain in the position he was in, without any spasm or flixture of the limbs. The young man informed me that he possessed consciousness at the time—that his mind became suddenly fixed on some subject, and run, as he expressed himself, with the intensity of lightning—that he had no power to divert his mind from its current, and, judging from the number of ideas which passed, he should think himself a long time in that state. Being of a full habit, I took some blood, and directed some laxative medicine. He called on me again in a few days, but without improvement. If there had been any change since the bleeding, he believed the intensity of thought greater during these turns. As he remained a few days with me, I had an opportunity of witnessing these mental attacks. There was little or no alteration in his external appearance, excepting his look indicated intensity of thought. On coming out of it, he manifested the same confusion as a person suddenly awakened from a sound sleep. Anticipating danger of the convulsive movements of the organs of thought being extended to the locomotive muscles, I informed his father that I was fearful of epilepsy, and declined doing anything further without advice. As he was going into Connecticut, I advised him to consult Professor Ives, of New Haven. He directed carbonate of iron, with some other means to counteract the morbid irritability of the system ; but his prescription was overruled by a physician in this vicinity, who saw no danger of epilepsy. By his advice, he was bled often ; and what other means were used, I do not know. The result was, in about two months he was attacked with epilepsy, and died a few weeks since from the severity of the fits,

neither seen, smelt, heard, touched, or tasted, for it will cautiously avoid them when all the senses are purposely closed up ;” and “ that polypes and several other zoophytes appear sensible of the presence of light, and yet have no eyes—as the nostrils are not in every animal necessary to the sense of smell, the tongue to that of taste, or the ears to that of sound. A distinct organ is not always requisite for a distinct sense. In man himself, we have already seen this in regard to the sense of touch, which exists both locally and generally ; the distinct organ of touch is the tips of the tongue and of the fingers, but the feeling is also diffused over every part of the body. It is possible, therefore, in animals that appear to be endowed with particular senses without particular organs for their residence, that these senses are diffused, like those of touch, over the surface generally.” In the inferior animals, where the cerebral developments are small, these “ general feelings ” determine the will ; but in man, possessed of more perfect perception and reflective powers, reason stands opposed to the influence of the instinctive sensations. This is generally the condition of man while awake ; but in a state of reverie, while a part of the mental powers are at rest, the opposition to the suggestions of instinct ceases, and those mental faculties which are in a state of wakefulness appear illuminated by the superaddition of an almost unerring principle. It is thus that the somnambulist will be guided in the darkness of night, where no eye could see, and pass with the eyes closed over the most dangerous places.

Clairvoyance, as a part of reverie, does not exist in every somnambulist ; but whenever it does occur in the ordinary sleep-walker, or in those reveries which appear to constitute a series in the chain of the morbid phenomena of disease, as in the cases of Jane C. Rider and of Mrs. Cass, it appears to indicate a higher irritation of the pneumo-gastric nerve, with a more direct extension of its influence to the immediate organ of vision. The exaltation of the visual perceptive power in these cases does not appear to awaken its own external organ of sense ; the eye is not therefore brought, by the voluntary powers, in adaptation to external objects, but the visual sense, directed by instinct, becomes diffused through the system, and the external surface thus becomes enabled to perceive the objects in direct relation to it. The development of clairvoyance in these cases is no more miraculous than the astonishing invigoration of some of the mental faculties. These apparently mysterious phenomena all appear dependent on the increase of the internal perceptive powers.

The analogy existing between the case of Mrs. Cass and the somnambulist state produced by the animal magnetizers, is peculiarly striking. Guided by internal sensations, she directed means for her recovery, and this in a state of debility and suffering which I have seldom seen equalled. In following her suggestions, in part, I was far from being influenced by the “ divinity ” of her sensations which produced them. Subsequent reflection, however, has convinced me that the somnambulist state presents to the physiologist and the pathologist, as well as to the general philosopher, phenomena demanding the most careful and unprejudiced investigation. It matters not whether these phenomena are induced by direct impressions on the feelings and the imagination, or whether they

result from disease ; they equally denote some derangement or modification of the electric relations of the system. This is apparent from the effects of the galvanic plates in the case of Mrs. Cass, in softening and reducing the number of the pulse, in equalizing action generally, and more particularly in their effects in preventing all sleep-talking while in the use of them.

In closing these remarks, I cannot but allude to the explication given of the case of Miss Rider. As to its dependence on uterine irritation, I will barely observe that somnambulism, as a disease, or an induced state, is not peculiar to the female. In reference to the explanation given of her clairvoyant powers, I would suggest the impossibility that an increase of sensibility of the retina should enable the rays of light to pass in *direct lines* through various refracting media. The several folds of cloth, in addition to the cotton, must have caused the refraction, in a confused manner, of all the rays striking directly on that part, so that not a ray of light could pass in a direct line from the object to the eye.

Stanstead, December 1, 1834.

CASE OF ACUTE OPHTHALMIA, WITH HYPOPIUM, IN A CHILD OF THREE YEARS OF AGE.

BY EDWARD J. DAVENPORT, M.D.

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In two of the former papers upon diseases of the eye, were described the symptoms, treatment, and result of Hypopium, or collection of a purulent deposit in the anterior chamber of the eye, following severe injury of the cornea (inducing traumatic ophthalmia) in adult subjects. In the present paper it is proposed to present the occurrence of hypopium in a child, consequent upon an attack of acute ophthalmia, complicated with ulcer of the cornea, but not connected with any mechanical injury of any of the textures.

James Tighe, a stout hearty boy, of 3 years of age, with a fair complexion, light hair and blue eyes, the son and heir of an honest Irish laborer, was presented by his mother for advice for an acute conjunctivitis of the right eye. She stated that the eye became inflamed, without any assignable cause, about a week previous, and has been attended, since that time, with considerable pain and uneasiness. There is now a greater degree of vascularity of the conjunctiva than takes place in pure strumous ophthalmia, but the intolerance of light approaches to that of struma. There is a slight puru-mucous discharge from the conjunctival lining of the eyelids, which is turgid and inflamed. Nearly opposite the pupil, upon the central portion of the cornea, is situated an elevated white opaque speck or pustule, surrounded by a nebulous deposit. The child keeps the eyelids obstinately closed, and resists every attempt to examine the state of the eye. Upon the skin, around the eye, is an eruption of minute pustules, which causes considerable irritation, and is aggravated by the flow of acrid tears. Pulse accelerated, and the tongue has a whitish, thin coat ; which, with a dry skin and restless nights, mark the