stricture was divided, the adhesions separated, and the bowel returned; some escape of serum from peritoneal cavity.

At the conclusion of the operation, which was necessarily much more tedious than usual, patient's pulse and countenance were as good as at its commencement.

Wound dressed with stitches and adhesive plaster. Bowels freely moved a few hours after operation.

No bad symptom occurred, and on the 21st he was dismissed cured.

VIII. *Remarks on the Influence of Fear in producing Functional Derangements.* By JOHN B. COWAN, M.D. ✓ 9

THE powerful influence exercised by mental emotions on the condition of the human frame has long been recognized. Under their influence the flow of saliva may be checked—that of urine may be increased—tears may be produced in inordinate quantities—diarrhoea, or copious perspiration, may be brought on. But although these facts have been clearly ascertained, it is difficult, if not impossible, to trace the definite connexion betwixt the physical organization and the mental manifestations, in virtue of which these effects follow.

The prevalence of a fatal and wide-spread epidemic affords, however, an admirable opportunity of observing the influence of one mental emotion—Fear—in producing, or assisting to produce, certain morbid states of the system. Many writers, both on metaphysics and on medicine, have alluded to the symptoms of bodily and mental derangement caused by fear.

Burton, in his *Anatomy of Melancholy*, says, "Many lamentable effects this fear causeth in man, as to be red, pale, tremble, sweat; it makes sudden cold and heat to come over the body, palpitation of the heart, syncope, &c. It causeth oftentimes sudden madness, and almost all manner of diseases." And again, after narrating the effects of terror which followed the massacre at Lyons in 1572, he adduces the instance of "Themison the physician, who fell into an hydrophobia by seeing one sick of that disease." In another part of his work he makes the following very apposite observation: "Men, if they see but another man tremble, giddy, or sick of some fearful disease, their apprehension and fear is so strong in this kind, that they will have the same disease;" and quoting from Dr. Cotta, narrates two stories, "the one of a parson's wife in Northamptonshire, *anno* 1607, that, coming to a physician, and told by him that she was troubled with the *sciatica*, as he conjectured (a disease she was free from), the same night after her return, upon his words, fell into a grievous fit of a *sciatica*: and such another example he hath of another good wife, that was so troubled with the cramp; after the same manner she came by it,

because her physician did but name it." These, however, are rather instances of the force of imagination acting upon weak minds, than of diseases caused by fear.

Dr. Darwin, in his great work on the Laws of Organic Life, treats of the diseases of association, under which he classes those produced by fear. His theories on this, as on other points, deserve attentive consideration, as the results of the studies of an acute observer and original thinker. He accounts for the increased flow of pale urine in hysteric diseases, by supposing that "the motions of the absorbent vessels of the neck of the bladder become inverted by their consent with those of the skin, which are become torpid by their reverse sympathy with the painful ideas of fear." The same effect may follow from anxiety, where there is little fear; as an instance of which, the frequency with which young men about to be examined for a degree pass urine is cited. His theory of *Diarrhœa a timore* may be quoted entire:—"The absorbent vessels of the intestines invert their motions by direct consent with the skin; hence many liquid stools, as well as much pale urine, are liable to accompany continued fear, along with coldness of the skin. The immediate cause of this is the decreased sensorial power of association, which intervenes between the actions of the absorbents of the cold skin, and those of the intestinal absorbents; the motions of the latter become on that account weakened, and at length retrograde. The remote cause is the torpor of the vessels of the skin, catenated (in plain English linked) with the pain of fear. The capillaries of the skin consent more generally by direct sympathy with those of the lower intestines and of the bladder; but by reverse sympathy more generally with those of the stomach and upper intestines. As appears in fevers, where the hot skin accompanies indigestion of the stomach; and in diarrhoeas attended with cold extremities. The remote cause is the torpor of the skin, owing to its reverse sympathy with the painful sensual motions, or ideas, of fear; which are now actuated with great energy, so as to deprive the second link of associated motions of their due share of sensorial power. It is also probable, that the pain of fear itself may contribute to exhaust the sensorial power, even when it produces no muscular action."*

Dr. Holland, in his Medical Notes and Reflections, devotes a chapter to the effects of mental attention on bodily organs. He shows that direct effects follow from consciousness being, by a distinct voluntary effort, directed towards organs or parts of the body. Of the force of this statement every one must be easily convinced. Among other instances, the state and action of the bowels is alluded to as thus influenced. The attention being concentrated on them, sensations previously unnoticed are expe-

* Zoonomia. Part II., p. 523.

rienced, and their action excited and quickened. But this, after all, amounts to a species of fear. If not actually commencing, as it is most likely to do, from apprehension or dread, caused perhaps by some reference to that part of the system, the consciousness, unless kept concentrated by fear, is not likely to continue long directed towards it; or the consciousness will degenerate into fear. Feuchtersleben, in his work on Medical Psychology, says, "Fear causes especially enuresis, diarrhoea, seminal discharges, erysipelas, and eruptions about the lips; facilitates the reception of contagion and miasma, disturbs crises, and aggravates every disorder."* After enumerating instances of actual organic lesions produced by the evidence of this emotion, and instancing its well-known effect in causing jaundice, he adds, "Here we ought to go further, and pass on to the psychical causes which act on the nervous principle; but the quality of these by no means explains their mode of action. Fear and horror act, moreover, variously, either exciting or paralyzing, according to the greatness of the danger, and according to the individuality of the persons affected by them."

There cannot be the slightest doubt that the presence of Asiatic cholera causes in a community, and in individuals, a dread and a terror, which is not exhibited in anything like the same extent during the prevalence of other epidemics scarcely less fatal. The reasons why cholera should excite such powerful emotions are sufficiently obvious. As yet it may be regarded, in this country at least, as a disease of comparatively modern origin. Its exciting causes appear as inscrutable, as its removal seems beyond the reach of sanitary measures, or the best applied efforts of medical art. Its very suddenness is appalling, so that we have all the elements to keep alive and foster fear. Fear seems to produce, during an epidemic of cholera, no well-marked effects upon those who are under its influence. The one of these, as might be anticipated, is a species of hysteria, so characteristic that it might be designated by the terms choleraic hysteria; the other is actual diarrhoea or vomiting.

The hysterical symptoms are most frequently met with in females, but the writer has seen one case in the male which appears to him interesting. On the 26th of December last year, shortly after cholera made its appearance in Glasgow, he was called late at night to see a young man of moderately robust make, and whose employment was that of a groom. His habits were remarkably temperate, and in every respect he was a steady and good servant. He was found walking up and down his room in a very excited state, occasionally applying his hands to the abdomen, and seemingly disposed to vomit. On inquiry, it was ascertained that he had no symptoms of diarrhoea or vomiting, but he declared that he felt, that if he lay down in bed he would

* Sydenham Society Edition, p. 186.

immediately purge and be sick. Persuasion was utterly useless, and so was abuse or ridicule. His master lent assistance to strip him by force; he was compelled to lie in bed, and a strong opiate was administered, under the effects of which he was soon in a profound sleep. He awoke quite well on the following morning, but still labouring under mental agitation, and declared that he had felt convinced the previous night he was dying of cholera. This man seems afterwards to have quite overcome his fear as regards cholera, having watched for a considerable time by the deathbed of a fellow-servant who had been attacked by that disease.

The following instance was related to me by a medical friend:—

One evening lately I visited two young ladies, between 20 and 30 years of age, in whose house a relative had died of cholera the previous week. Since then they had been affected with the most overpowering fear of the disease. They would not eat for fear of inducing vomiting, and felt persuaded that they were both about to take cholera. They felt sick, and had an uneasy sensation over the epigastrium; and though neither of them had previously had any hysterical or nervous affections, they now frequently fainted, felt alternately cold and hot, and had occasional shiverings. They refused to lie down for fear they should become sick, and scarcely slept at all at night. They had taken no nourishment for four days, except little bits of biscuit, and a mouthful of cold water with some aromatic substance in it, and they could hardly be persuaded to swallow a little wine and water. They had not vomited at all, and they had resisted the inclination, and succeeded in preventing any passage from their bowels for six days, under the delusion that it was the safest way to prevent diarrhoea. They were constantly moving about to assure themselves that they were still unattacked, and as night drew on they felt perfectly miserable at the thought of requiring to retire to bed. Altogether I never witnessed such a lamentable example of the effects of fear. I persuaded them to take some tea and toast, a little negus on going to bed, and ordered a laxative pill to both, assuring them that the nourishment would strengthen them, and that they might expect to be better in the morning. They slept pretty well, and in the morning felt more composed, principally I presume from the assurance I had given them, that they would be better. The pills operated mildly, and had the effect of relieving some of the uneasy sensations. They still disliked the idea of taking solid food, but gave in when I insisted on their doing so, as well as taking some wine several times. Having once overcome the fear of taking food, they soon regained their strength.

Dr. Steven has detailed to me a most interesting case,—that of a man whose dread of thunder was such, that during a thunder-storm he had invariably an attack of diarrhoea. During the epidemic of cholera in 1849, this person resided in Hamilton, and

when the disease appeared in that town he kept himself closely secluded in his house, never venturing out. Towards the close of the epidemic, on a day during which he had heard there had been no fresh case of cholera, he went out, and Dr. S. had some conversation with him. He was attacked by cholera, and died on the following morning; and his was the last fatal case but one which occurred. It seems apparent that this man felt himself secure so long as he lived secluded, and probably it was to that feeling of security being destroyed, and agitation perhaps induced by conversing on what to him was an all-absorbing topic, that the seizure was in some degree to be attributed. Similar examples might be multiplied, but those narrated are sufficient to indicate the character of a class of cases, which all medical men will recognize as having been of frequent occurrence during the last few months.

To such an extent has this fear of cholera existed, that it has led to the commission, or omission of acts, discreditable in the highest degree to those concerned. We learn from the public press, that one unfortunate man was left to die on a public quay; and this is by no means a singular case of desertion of duty. Husbands have been known to desert their wives, parents their children, and children their parents; while the relatives of those who die of the complaint, hasten to bury them within a few hours of their decease. No wonder that the disease should spread in every locality, while such a panic continues to prevail.

A fear of the existence of the disease has often been produced by the too indiscriminate employment of opium and other astringent medicines. A loose evacuation called for brandy and laudanum. These were taken, the stomach became deranged, vomiting perhaps occurred, and even cramps, real or imaginary. The medical practitioner was hurriedly summoned to a case of cholera, and from the excitement and vague statements of the patient and attendants, would find it extremely difficult to discover the real state of matters. Or again, a person has been constipated for some days, takes before retiring to rest some laxative medicines, which, beginning to operate, causes alarm. Opium is resorted to, and the antagonistic action set up, soon produces general disorder of the system, increased by mental perturbation not easily allayed.

Although, however, fear undoubtedly produces such derangements as those briefly touched upon, as well as others to which no allusion has been made, it is obviously impossible to trace either its direct influence, or to assign to it its due share in causing these effects. But believing, as all practitioners must do, that the violence of this mental emotion predisposes to, if it does not actually directly produce cholera, it is a point, we apprehend, well worthy of consideration, whether no means exist by which it can to some extent be controlled. Every effort should undoubtedly be tried to put an end to cholera being made a constant theme of

conversation during its prevalence, and to discourage the practice which has become so common, and is so fraught with injury and danger, of making the public press the vehicle for discussing its various phases and modes of treatment. Any one who has glanced at the "Times" newspaper for many months past, must have been struck with the innumerable infallible modes of curing cholera, which have been promulgated through its columns, equally unworthy of regard, whether emanating from "Eastern Travellers" or "Hospital Physicians." The last and most notable instance of this, was the publicity given to a plan of treatment, by no means new, which, it was stated, had been adopted with success in some dozen cases, and which received the approving fiat of the great organ of public opinion.

But while some slight degree of good may result from attempting to check the tendency of the public mind to dwell upon such an alarming subject, the true source of all this pusillanimous dread lies much deeper, and cannot we fear be reached. It is the result of an educational system conducted upon erroneous principles, and the errors and defects of which, more especially as regards the female sex, have frequently been pointed out, and by none more forcibly than by Barlow,* who has in a very striking manner shown the fruits of misdirected early training in producing insanity. To the same identical causes, the want of self-control, of moral courage, and, in the case of females of the higher classes, of interesting occupation and active exercise of the mental powers, may be traced the existence and frequency of a fear during epidemics, which is demoralizing in its effect upon a community, and is actually fraught with danger, not only to those who indulge in or foster it, but to the public at large, by its undoubted tendency to increase the prevalence and fatality of the epidemic. It is earnestly to be hoped that any future outbreak of cholera may be distinguished by the entire absence of such cases as those shortly related, and may not be aggravated by the violence of such a depressing mental emotion as fear.

✓ IX. *On the Injection of the Cellular Tissue with Water, as tried in the year 1848, in the Treatment of Cholera.* By A. BUCHANAN, M.D.

(IN A LETTER TO THE EDITOR.)

DEAR SIR,

As you have inquired of me more than once, as to the trials made in the year 1848, of injecting water into the cellular tissue, as a remedy for cholera in the stage of collapse, I send you a statement of what I recollect respecting it; for the results, unfortunately, were too little important in my estimation even for insertion in my