

and iodine, has been found to exert a direct influence upon the discerning vessels of the skin, and those are remedies in only two diseases, erysipelas and syphilitic eruptions, out of the immense variety of characters under which inflammation of the skin presents itself. There are, however, several external applications which appear to have an immediate power over the vessels which elaborate these diseases.

Several of the glands are functionally susceptible of the agency of particular medicines; but as inflammation more often attacks the parenchyma, these medicines are not calculated to subdue the inflammation. In hepatitis, mercury is a favourite remedy; but however useful it may be considered in hot climates, it is of doubtful efficacy in cold, and even in temperate countries. In nephritis, diuretics are allowed to be injurious. In inflammation of the brain, or of the spinal marrow, mercury is of great utility, and in many cases the only beneficial agent.

Inflammation, treated according to the rules just proposed, will be found, for the most part, simple and manageable. Simple, in being unaccompanied either by the inflammatory fever so often springing out of great and sudden privations of muscular power, or, by the various pains, from flatulence, which often so complicate the disease as to be mistaken for additional symptoms of inflammation, instead of the dyspepsia occasioned by the innutritious liquid diet which is pursued. Manageable, because it will seldom assume an acute character, but will yield to the comparatively mild means employed for its removal. Another advantage in the system of treatment proposed is, that the constitution scarcely ever suffers during an attack of inflammation—the patient does not require several weeks, months, or even years, for the restoration of the powers of his frame.

Difficulties will attend those cases in which the patients have an insuperable aversion to every kind of nutriment, in such cases the inflammation will, in general, be unaccompanied by pyrexia, and it is scarcely necessary to mention, that difficulties will occur in the management of exceedingly delicate and excitable frames, in which organic lesions have long existed; but there are circumstances equally unfavourable under any system of treatment.

#### PATHOLOGY OF FEVER AND MALIGNANT CHOLERA.

*To the Editor of THE LANCET.*

SIR:—The following observations are submitted to you for publication in the columns of your excellent periodical. I am, Sir, your very obedient servant,

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The pathological investigation of the nervous system, considered abstractedly, is, we may presume, yet in its infancy. Its great abstruseness is calculated to engender obscurity of hypothesis and false deductions; but it may reasonably be expected that clearer views will ere long prevail on this subject. I think there is little doubt that it will eventually be discovered that the seat of many diseases which are at present referred to organs affected secondarily, are primarily and essentially confined to the nervous system, more especially to the ganglionic. This class of nerves contributes so materially to the performance of all the vital functions, and presides so completely over all those organic processes, both singly and collectively, which are essential to life, that it must of necessity occasionally labour under irregularity of action, and, oftener than is imagined, display in autopsic examinations serious organic lesions.

The grand object in medicine is to discover cause and effect. These understood, there is, generally speaking, little difficulty in therapeutic investigations. It is with some diffidence, yet, I trust, with reason, that I purpose to show that what Dr. Stevens supposes, and has taught us to regard, as the cause of cholera and fever, exists only as an effect; for if it were the blood that received the first contamination in those diseases, its usual appearances would be lost, and instead of disease being gradually developed, we observe it to be often sudden and severe, as in many cases of cholera, and some of fever. In these diseases more particularly, the circulating fluid is first greatly altered in its qualities, from a poison received, as Dr. Stevens believes, through the respiratory system. Secretion is then deranged as a consequence, and general functional disease results. That accomplished physician very ably refutes the doctrines of Clutterbuck and Broussais, justly remarking that they cannot both be right:—"If inflammation in any of the organs were in reality the cause of fever, the disease ought to be fatal in proportion to the violence of the local affection; but the very reverse of this is the case. Mere excitement can be easily reduced, and the inflammatory form of fever is decidedly the most easily cured, though in it the excitement is often so great that the organs are very liable to be injured, whilst the malignant form of fever is by far the most fatal, though in this the excitement is less, and the organs are seldom affected."

Amongst the effects of ligature or excision of the par vagum, we especially observe hurried and oppressed respiration, very evidently arising from a partial deprivation of nervous influence, giving rise to a limited suspension of those chemical changes within the pulmonary organs, which are so necessary to life. The same state of things exists in cholera, and other malignant dis-

eases. Dr. John Davy long ago ascertained that the expired air of persons labouring under cholera asphyxia contained very much less carbonic acid than it ought. Now, from the experiments of Dr. Stevens, it appears that acids, alkalies, electricity, and every thing which destroys the neutrality of the saline matter, causes the blood to assume a dark colour, and impoverishes it. I would ask, might not the retention of the unexpired carbonic acid, supposing it to be formed in the round of the oppressed circulation, destroy the neutrality of the saline matter, and decompose the physical properties of the blood? The fact of but a portion of the oxygen of our atmosphere being consumed by persons affected with cholera, would favour the same phenomenon, considering the matter in the light which is thrown upon it by Dr. Stevens. I can understand that if a diminished quantity of oxygen be appropriated in the pulmonary organs, a corresponding diminution of carbonic acid must be the result, and by this mode of reasoning we readily account for the lividity and coldness of the cutaneous surface and extremities, attendants on the first stage, or the accession, of the diseases mentioned; for be it understood, that Dr. Stevens attributes the source of animal heat to the chemical combination of the carbon of the nervous system with the oxygen of the arterial, obtained by inspiration taking place in the secreting vessels.

The circulation of diseased blood through the system, whether originating from primary suppressed nervous influence preventing the due chemical changes taking place during respiration, or from breathing an infected atmosphere, whereby the carbonic acid in the circulation is not removed, would produce a diseased action in all the vascular solids. Its deteriorated quality would impair the cerebral functions, and, after a time, suspend the heart's action. The cause of death in cholera and other fatal fevers is, first, then, owing to the operation of a poison on the ganglionic system of nerves, checking the whole of the vital functions; and, secondly, to an effect arising out of that cause, consisting in the discontinuance of the normal chemical changes in the lungs, thus producing blood which is unfit for the support of life.

In Mr. Twining's admirable illustrations of the more important diseases of Bengal, we read as follows, at page 383:—"In the assemblage of symptoms which constitutes the early stage of a sudden invasion of cholera, we observe evidence of the disorder, or a total cessation of the functions of those organs which are supplied with nerves from the great solar plexus. In those cases which tend to early collapse and coldness, the liver and kidneys cease to secrete as usual, the digestive powers are arrested, the mucous membrane of the stomach and intestines has its secretions altered, and the dis-

order of the respiratory function reminds us of the alliance of the healthy, as well as the diseased, actions of the lungs, with the digestive organs, through the influence of the nervous system generally, and more especially of the pneumo-gastric nerves." Now, in my own opinion, the disorder of the respiratory function is by no means so much the effect of sympathy, as of some morbid impression operating on the cardiac and pulmonic plexuses within the thorax, simultaneously with those ganglionic nerves which are seated within the abdomen. What appears to me greatly to corroborate the truth of this opinion (that the organic nervous system is primarily affected), is the very rapid accession of cholera which is so frequently observed, and the equally rapid termination in recovery, or in death, as the case may be. "In some instances," says the author before quoted, and now deceased, (whose kindness and good feeling shown towards me when in Bengal I take this opportunity of acknowledging), "recovery seems almost as sudden and complete as in cases of suspension of animation from submersion in water." And again—"The fatal termination of cholera in some of the most sudden cases, commencing with extreme collapse, seems to depend on the intensity of the efficient cause of the disease acting so powerfully on the nervous system as to produce total arrest of all vital energy, and death, as it were, by suspension of animation, a cessation of vital actions taking place with hardly any preliminary course of disease." When re-action takes place, if it be not too violent, recovery is often speedy; if it be otherwise, congestion and inflammation of one or more of the viscera occur, and will often call for the cautious abstraction of blood. The interminable grades of distinction which are seen in fevers, would incline many to doubt the identity of their nature; but to the attentive observer it must appear evident that their several types and forms are to be viewed, not as varieties in kind, but merely in degree, this depending upon numberless causes, both accidental and acquired. Thus is fever, in the most extensive acceptation of the term, provided it be idiopathic, to be looked on as an assemblage of phenomena which indicate the existence of some morbid impression upon the animal economy, disturbing its vital equilibrium, if I may use the expression. Although intermittent fever embraces so peculiar a character, one so very unlike the other forms of fever, it must not, nevertheless, be supposed to have a different pathology. Each paroxysm of ague "is a complete febrile seizure, the successive and critical changes of which are insufficient, in most instances, for the restoration of health." The cause of this disease is the operation of some morbid impression upon the organic nervous system, for the temporary removal

of which nature successfully exerts herself, its return occurring after a definite period. I would ask, *en passant*, if this disease arose from deficient saline matter in the blood, whether bark would be likely to cure it? Of all the forms of fever, cholera is by far the most fatal and rapid in its course, producing death often in a few hours, and seldom lasting longer than three or four days. In autopsic examinations of such persons as have died in the low form of the disease, cases have been repeatedly met with. Two such have come within my own immediate knowledge, when, after the most diligent examination of all the textures, no lesion, or diseased appearance, could be found. Copland and Alison, when speaking of the pathology of fever, make similar statements, proving, therefore, in the words of the former physician, "That changes may take place in the nervous system sufficient to cause the most acute disease, or even to subvert life, without being so gross as to be demonstrable to our senses. The fact now stated is important, inasmuch as it most materially affects the question as to the nature of fever"—cholera.

It would appear, then, that the efficient agents of fever act primarily upon the organic nervous system, and are made evident by the parts or organs with which it is connected, being those first affected, as shown in the disordered states of the respiration, circulation, digestion, and secretion. The derangement of so many important functions is attended with many symptomatic disturbances, which tend to the entire disarrangement of the whole system. The inflammatory disorganizations which are so frequently seen in autopsic examinations of those who die from cholera and fever, are to be viewed as the results of a subsequent abnormal action, effects of the first morbid impression, produced, probably, by an inordinate effort on the part of nature to throw off the offending agent.

It may appear wrong to some to class cholera amongst the febrile diseases. Twining and Alison have both recognised the identity of some of the worst forms of fever with this very virulent malady, and no observer can help noticing the analogy between the stage of collapse in cholera, and the cold stage of intermittent fevers. In both we have the suspended state of the vital functions, the coldness and lividity of surface, and the anxious and retracted countenance. The subsequent re-action in each is of the same febrile character, with occasional congestion of internal viscera.

Many persons are in the habit of supposing cholera to be attended with invariable symptoms. Amongst these are vomiting and purging. I have often, during a temporary residence in Bengal, and other parts of the East, seen very unequivocal examples of the disease unattended with either of

those symptoms. I have the notes of a case before me which occurred in China, in 1834, where the bowels were *obstinately constipated*, and required a purgative enema. "Such are the varieties," says Mr. Twining, "in this disease, that I could not mention any symptom which was not occasionally absent." The same varieties and anomalies occur in cholera as in fever, from the period of invasion to its termination, the only difference consisting in degree.

Future investigations will, I doubt not, dispel the obscurity which at present veils the pathology of cholera, than which no disease has more seriously engaged the attention of the profession, although it has been treated more empirically than any other. If its pathology be considered as identical with that of fever, much of the ambiguity of the latter must disappear.

## IDENTITY OF SYPHILIS AND GONORRHOEA.

To the Editor of THE LANCET.

SIR:—Among all the topics which agitate the medical world, perhaps none is more frequent than the question of the identity or non-identity of these two diseases. The majority of the profession are of opinion that they are totally distinct, but there are many great names, more especially of army surgeons, among those who consider the diseases to be one and the same. The opinion I am about to offer, is a modification of that of Hunter. It is not my intention to enter minutely into the arguments and experiments, *pro* and *con*, which the respective followers of John Hunter and Benjamin Bell have adduced in support of their views. Indeed, they appear to very nearly balance each other, Hunter averring that he could produce chancre by inoculating gonorrhoeal matter on an absorbent surface, like the glans penis, and gonorrhoea, by introducing chancrous matter into the urethra; while Bell as positively asserts that he failed in so doing, and so it was with their partisans, and one asseveration must balance the other. But the anti-Hunterians thought they adduced an unanswerable argument, when they said that the diseases *must* be distinct, because gonorrhoea could be cured without mercury, nay, was aggravated by it. But our present experience that most cases of genuine syphilis are curable without mercury, and that many are aggravated by its use, shows, I think, that this argument has no weight.

Then comes another great gun of the "Bell party." If these diseases were the same, they say, one would invariably produce the other in the same person. I do not deem this by any means a *consequitur*, for every surgeon knows that two men may