AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF SURGERY,

*At the Annual Meeting of the British Medical Association,
in Plymouth, August 1871.*

By JOSEPH MAY, ESQ.,

Mayor of Devonport, and President of the Section.

GENTLEMEN,—I beg to acknowledge the compliment that has been paid me in asking me to take this chair, and to preside over the proceedings of this Section. I must presume that the offer was made to me in recognition of the social position which I occupy by the indulgence of my fellow-townsmen, and not from any claim that I may present to the Association personally. I will not detain you by any lengthened remarks upon the subject of surgery. After the able address that was delivered to us this morning by Dr. Johnson, perhaps it would be better that we should come almost immediately to the actual business of the Section. However, I may observe that, whilst hearing Dr. Johnson this morning remark upon the great changes that had gone on in medicine within the last thirty years, I recalled the fact that I myself was old enough to recollect that within the same period enormous advances have been made in surgery also. I can look back and recognise in my younger days such great names as those of Astley Cooper and Abernethy, besides others with which we are all familiar as being leaders of the profession in their day and generation. If we compare their opinions and their practice with those of the present day, we are at once reminded of the great advance that has been made. It seems as though medicine and surgery have partaken of the great onward progress that is characteristic of other institutions in society. The adoption of the powers of steam and of electricity has given to society at large an impulse which has altogether transformed the face of things. And so by various agencies which have been at work in the past forty years, the sciences of medicine and surgery have been thoroughly metamorphosed. One of the most valuable agencies introduced during that period has been the use of anæsthetics. Their employment was unknown in my younger days, and without them our hands were comparatively tied; but we now see the beneficial influence of chloroform and allied substances in allowing us to undertake operations extending over periods of time which, without the use of such agents, would have been simple acts of cruelty. In the matter of diseases of bones has the influence of that agency been most conspicuously shown. Operations are undertaken in the present day which occupy half-an-hour or even three-quarters, and which would have been impossible before the discovery of these beneficent aids to surgical science. Anæsthetics are indeed the most valuable agency which has been given to the surgery of the present day. The learned professor in medicine to whom we all listened with so much pleasure, spoke to us of the expectant treatment. Now, the expectant treatment of medicine is becoming more and more in vogue, in opposition to what we may call the more heroic treatment of administering large doses of drugs and other violent measures. In surgery it would not do, however, to trust to expectant treatment. Here you require prompt action. The life of the individual depends not upon waiting upon Nature, but upon prompt interference with the mischief which accident has occasioned. Still, though that applies to wounds recently inflicted, there are cases in which the expectant treatment so ably advocated by the professor is of great value in surgery by giving Nature an opportunity of carrying out her sanitary regulations. Great things may be expected when the conservative method of treatment can be followed out so far as the expectant system is of value in surgery. I had hoped this Section would have been favoured with a paper from a gentleman who had the good fortune to be present in France during a part of the late conflict. Circumstances have prevented him from doing so; but as he is present, I have no doubt we shall be favoured with the result of some of the observations which he made during the campaign.

THE PATHOLOGY AND TREATMENT OF CHOLERA.*

By GEORGE JOHNSON, M.D., F.R.C.P.,

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IN the present communication, my object will be to bring distinctly before you, in the fewest possible words, the main points relating to the pathology and treatment of cholera which I hold to be probably true, and upon these points to invite comment and discussion.

Cholera is the result of a material and portable poison, capable of being conveyed from place to place and communicated from person to person. The poison may enter the system either with the air through the lungs, or with the food and drink through the alimentary canal. Water contaminated with choleraic discharges is, in a large proportion of cases, the vehicle by which the poison enters the system. Whatever may be its mode of entrance, the poison is absorbed and enters the blood. When it enters by the lungs, the blood is the only channel through which it can reach the alimentary canal.

The usual period of incubation, *i. e.*, the interval between the reception of the poison and the commencement of the symptoms, varies from one to three or four days. Mr. Macnamara records the fact of nineteen healthy men having, on one occasion only, drunk water with which cholera stools had been mixed. One man was seized with cholera after an interval of one day, two on the second, and two on the third day, after imbibing the poison; the others escaped.

In some cases, a general feeling of *malaise* and depression, the result, probably, of blood-poisoning, precedes the commencement of the gastro-intestinal symptoms. The discharges from the alimentary canal are the result of a conservative effort to expel the poison and its products from the system; in this respect they are analogous to the eruption of small-pox, and the intestinal discharges of enteric fever. The discharges, when abundant, are a source of great exhaustion, and they may be so copious as to kill. That they are not the essential or the chief cause of the state known as cholera collapse is clear from the following considerations. They bear no direct relation to the degree of collapse; often an inverse relation.

Collapse and death may occur without discharges and with but a scanty secretion into the alimentary canal; on the other hand, recovery from collapse is always associated with a continuance of the discharges, which gradually cease as reaction occurs. During the state of collapse, there is evidence of an impeded circulation through the lungs. This is shown—During life, 1. by the comparative emptiness of the systemic arteries, the pulse being small and feeble, or even entirely absent at the wrist. 2. By the fulness of the systemic veins; hence the lividity of the surface. After death, evidence of impeded circulation is found in the condition of the heart and lungs; the left side of the heart is empty; the right side, the pulmonary artery, and the large veins are distended; the lungs are anæmic, light in weight, and either dark- or light-coloured, depending on the presence or absence of a retrograde passive congestion of the *bronchial* veins and capillaries. The only probable explanation of this arrest of the circulation is contraction of the minute pulmonary arteries. A similar arrest of the circulation occurs as a result of acute apnoea. The state of collapse which accompanies a fit of spasmodic asthma is very similar to the collapse of cholera. The main difference between choleraic and asthmatic collapse consists in this—that in asthma there is a primary apnoea, the result of bronchial spasm, and a secondary asphyxia or pulselessness consequent on contraction of the minute pulmonary arteries. On the other hand, in cholera there is a primary asphyxia and a secondary apnoea consequent on the arrest of the circulation.

Embolism of the pulmonary artery has in several recorded instances given rise to the most characteristic symptoms of cholera collapse—blueness of the surface, shrinking of the features, pulselessness, coldness of the tongue and breath, urgent dyspnoea, with loud puerile respiration over the lungs and a feeble whispering voice.

Feebleness of the heart does not explain the arrest of the circulation in cholera. Why should the right heart alone be always enfeebled? And, admitting weakness of the right heart, this would not explain the fact that, while the blood has been abruptly stopped just before reaching the capillaries, the trunk of the pulmonary artery is so distended that, when its walls are punctured soon after death, the blood spurts out with considerable force—showing that, while the right ventricle

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