

MEDICAL MATTERS.

NEW TREATMENT OF CHOLERA.

Major Leonard Rogers, Indian Medical Service, has, says a medical writer in the *Morning Post*, made a further communication to the Royal Society of Medicine on the new treatment of cholera he recently initiated in Calcutta. In addition to his Indian experience, extending over four years, he spent three weeks last August in the cholera hospital at Palermo, and since he left the Director and staff of the hospital have been carrying out his treatment with extremely good results. In reporting on these the Director, Professor Romano, wrote most enthusiastically, stating that he and his assistants hoped to be permitted to go to Tripoli to spread the use of the method there.

Major Rogers's method consists briefly in injecting a hypertonic salt solution into the veins of the patient and in administering to him solutions of permanganate by the mouth. To appreciate the mechanism of the treatment it is necessary to recall the mechanism of the disease. The bacillus of cholera, it will be remembered, lodges exclusively in the intestine and there manufactures the cholera toxins. As a result of their presence, fluids and salts are drawn from the body; the volume of the blood is diminished and its specific gravity is increased, death usually resulting from collapse, due to the fall of blood pressure and to exhaustion. The immediate danger of collapse is avoided by the intravenous injection of salt solution that increases the volume of the blood stream, and the toxins, which are the cause of the dangerous symptoms, are rendered inert by the use of the permanganates. Both in the broad outline and in the finer details, the treatment adopted is a remarkable instance of the principles of science being successfully applied without a long intermediate period of empirical treatment. Arguing that in the collapse stage of cholera from one-half to two-thirds of the serum is lost to the system, Major Rogers injected into the veins a hypertonic solution of salines of about twice the strength of that commonly used. The special solution has three advantages: it increases the volume of the blood by the mere addition of fluid; it reverses the direction of the flow of liquid from the body to the intestine and, being hypertonic, sets up an osmotic pressure and induces a flow of liquid from the intestine to the body; it eliminates the very grave risk that accompanies the administration of a hypotonic solution. The author's method of dealing with the toxins themselves is equally simple. By administering perman-

ganates through the mouth he renders the toxins inert, making use of the well-known fact that most bacterial toxins are albumoses or similar bodies, and easily destroyed by such oxidising agents as the permanganates.

From a description of his methods to the Royal Society of Medicine, Major Rogers passed on to consider the results obtained. In India (with some 300 cases) by the use of hypertonic saline solution alone he reduced the death-rate from the previous hospital rate of 59.6 per cent. to 32.6 per cent., and by the addition of the permanganates internally to 23 per cent. Despite his absence from Calcutta, the latter result has been maintained, and in the Central Provinces in 1910 a recovery of 77 per cent. has also been obtained through this method.

For three weeks last August the author demonstrated and practised his method at the Cholera Hospital at Palermo. During the first ten days 27 cases were treated by intravenous injection, and there were 14 recoveries (51.8 per cent.), a remarkable result in view of the fact that only very grave cases were selected for treatment. During the twelve days following 40 cases were treated, and there were 24 recoveries (60 per cent.). "That cases will still be met with of too virulent a nature, or coming too late under observation to be saved from a fatal termination," Major Rogers says, "it is useless to deny. Nevertheless, these should be quite exceptional in previously healthy subjects who are neither old nor extremely young, and who come under treatment at a fairly early period of the disease. In such I think the recovery rate should be fully 80 per cent." However that may be, the results already obtained furnish a remarkable example of the successful application of modern methods of research in discovering a life-saving method of treatment.

In an addendum to his paper, Major Rogers was able to quote the results obtained by Professor Romano for the month following his stay in Palermo. Fifty-four severe cholera cases were treated by his method, with only eight deaths, giving a mortality ratio of 15 per cent. And in two of those eight death was due to late pulmonary complications.

THE DANGER POINT OF CHLOROFORM.

Dr. Buckmaster and Mr. Gardner, in a paper read before the Royal Society, state that the cessation of respiration, which is an initial danger point in chloroform anæsthesia, is the direct effect of deep and rapid respiration prior to the administration of the drug. This can be rendered negligible by giving chloroform of a low percentage.

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