

ended in death, after a short course, and without presenting any other complication of a pathological nature, afforded us opportunities for making important observations. From these favourable circumstances the Commission was enabled to give much advancement to the solution of the problem.

We must first of all say, that from the microscopic analysis we were able to discover, in the intestines of choleric, the same bacilli which we had before discovered in Egypt. In my report of 17th December last, I left provisionally undecided the question whether these bacilli, like other bacteria, belong to the number of the habitual parasites of the human intestine, or are, under the exclusive influence of the pathological process of cholera, developed in the intestinal mucus. Up to this time many characteristics which should have enabled us to distinguish these bacilli from other similar microbes, were wanting. Fortunately this want has now been met, thanks to the methods employed in the Hygienic Institute, which in this particular afforded valuable service, we have been able to isolate the bacilli coming from the intestines of choleric, and to cultivate them in pure media. A rigorous observance of the bacilli developed in cultures of complete purity, has led us to discover certain properties which are very characteristic, relative to the form and the growth of these bacilli in nutritive gelatine, so as to render it possible to distinguish them perfectly from other bacilli.

We have now no difficulty in answering the question whether the bacilli exist habitually in the intestines, or are met with only in the intestines of choleric.

In the first place, by means of cultures made in gelatine, we succeeded in discovering the bacilli, not only in the dejections of choleric, but also in the intestinal contents of the choleric cadavers. This result was constant in all the cases examined by us. We proceeded to examine the intestinal contents of other cadavers, and found that the bacillus did not exist in them. Until the present, eight cadavers of persons who died of different diseases, (pneumonia, dysentery, phthisis, and kidney disease), have been examined by us. Lastly we have examined the intestinal contents of different animals and substances rich in bacteria, and so far we have not met with a single bacillus resembling that of cholera.

If in the future these facts shall prove constant, we shall have achieved a very important result. In fact, if these bacilli, endowed with specific properties, pertain exclusively to the cholera process, it will no longer be legitimate to doubt that an etiological relation exists between their presence and cholera, even when trials to reproduce the disease in animals prove abortive. But here also, the conditions appear to be very favorable, as some recent experiments on animals have furnished results that permit the hope of future success.

Besides these labours the Commission succeeded also in acquiring information as to the conditions that favour the development of cholera in Calcutta—a question of much interest and capital importance.

Outside of India, in cities which have not been attacked by cholera, unless at long intervals, it is impossible to determine with security the salutary influence that certain hygienic measures, such as improvement in the quality of drinking-water, and drainage of the soil, etc., have over cholera; therefore the fact of cities having been preserved one or more times from the scourge, is found always to be subordinate to accidental causes. In the meantime, in cities such as Calcutta, which present yearly a considerable mortality, any hygienic measure that has an effective action against the malady, must lead to a manifest diminution of mortality.

Now, from 1870 onward, cholera has suddenly diminished to a very evident extent in Calcutta. Before that year the mean annual mortality from cholera in Calcutta, was 10.1 per 1000 inhabitants. Since 1870 it has come down to 3 per 1000. This fact deserves attention, and it ought to contribute to the effectual combatting of the scourge.

According to the almost unanimous opinion of physicians here, the diminution of cholera is to be attributed to the establishment of a good supply of drinking-water. The Commission felt it to be their duty to form their opinion in this relation, from actual inspection. For this purpose they visited the hydraulic works and the system of water supply of Calcutta. They made a series of analyses of the river water, before and after its filtration at Pultah, and they found that the water destined for the use of the population possesses excellent qualities.

Through the medical journals the French Com-