

Can infection occur via the digestive tract? To this question we can only answer possibly, but if so it must be rare. For on post-mortem examination one never finds any gastro-intestinal localization or exceptional involvement of the mesenteric glands. Further, as plague bacilli die out rapidly when freely exposed to air and light and as most foods are cooked above the thermal death point of this bacillus (168° F. for 10 minutes), and as finally the plague bacilli would have to withstand the well known germicidal action of the gastric juice, it makes the possibility of gastro-intestinal infection less likely. The presence of plague bacilli in the fæces can be explained by the fact that we not infrequently find little hæmorrhages into the intestinal mucosa.

We can sum up by saying that the avenues of infection are via the skin, commonly without any special local lesion, and via the respiratory tract also with or without special local involvement.

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(PROPHYLAXIS AND TREATMENT OF PLAGUE.)

The treatment of the plague has been up to quite recent times to a great extent symptomatic, but since the discovery of the bacillus, attention has naturally been directed to the possibility of its treatment by serum therapy. Yersin was the first to employ this method of treatment, but his first series of attempts were attended by very indifferent success. His serum was obtained from horses immunized by intravenous inoculations of living plague cultures. In view of later developments his indifferent success may be ascribed to the use of too small doses. His work has since been extended by many investigators, particularly at the Pasteur Institute in Paris, by such men as Roux, Borrel, Calmette and Simond. Owing to the danger both to the experimenters and the experimental animals, by the use of living cultures, it was found advisable to use for immunizing purposes, increasing doses of the toxines and bodies of the microbes killed by heating to 158° F. for one hour. The serum obtained from such animals has been used in India and elsewhere and was given an extended trial in Oporto last summer, (1899). In Oporto according to the reports of Drs. Calmette and Salimbemi (*Annales de l'Institut Pasteur*, December, 1899), it reduced the mortality from 63.72 per cent. in those untreated to 14.78 per