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**Gastro-Intestinal Port of Entry of *B. Tuberculosis* in Guinea Pigs.**

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We have been able to demonstrate differences in the permeability of the wall of the small intestine by changing the contents of the lumen. Certain bacteria injected into the duodenum could be found in a viable condition in the thoracic duct lymph.<sup>1</sup> Fresh egg white, 1 to 2% solutions of desiccated ox bile and alkaline phosphates seemed to influence intestinal permeability, fresh egg white producing the maximum effect. Saline suspensions of bacteria injected into the duodenum in the same manner could not be demonstrated in the thoracic duct lymph. The test bacteria could be demonstrated in the mesenteric lymph glands in the dogs in all instances after intra-duodenal injection. All experiments were performed under local anesthetic. We wished to test the permeability of the intestinal wall in guinea pigs to *B. tuberculosis* as a result of the above mentioned observations upon dogs. We used intraduodenal injections to rule out some of the factors associated with oral administration and the subsequent uncontrollable gastric environment.

Under ether anesthetic the abdomen of guinea pigs was opened, the duodenum exposed and 5 cc. fluid was injected. Saline, fresh egg white, 2% desiccated ox bile, 1/15 M. disodium phosphate and an equal mixture of egg white and bile were the fluids used. As control, 6 guinea pigs were injected with each of these 5 solutions. The animals remained healthy for the 3 months' period of observation. Bovine strains of *B. tuberculosis* were used, 5 mgm. was suspended in 5 cc. of each of the above mentioned solutions and injected intra-duodenally. Thirty guinea pigs received the saline, 19 egg white, 17 bile, 17 alkaline phosphate and 17 egg white and bile, a total of 100 guinea pigs. We have eliminated all accidental deaths from this series. All guinea pigs after 6 weeks' observations were killed, 100% showed tuberculosis. The majority showed extensive generalized tuberculosis.

The guinea pig is so susceptible to the *B. tuberculosis* that all of the suspensions proved effective in producing tuberculosis following intra-duodenal administration.

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<sup>1</sup> Arnold, *J. Hyg.*, 1929, xxix, 82.