

tubercle bacilli were stirred, was given. The dog was killed after 3½ to 4 hours, during active digestion, and as much chyle as possible collected, together with the mesenteric glands. With this material guinea pigs were inoculated. In eight out of ten dogs it was found that tubercle bacilli had passed through the intestinal wall, and from the extent of the lesions found in the guinea pigs I feel justified in saying that the bacilli had penetrated in large numbers. In every case the entire intestinal tract of the dogs was carefully examined, and in two, microscopic sections were made from several portions of the gut. In no case was any lesion found. These experiments prove that tubercle bacilli can easily penetrate healthy mucous membrane without leaving any trace of their path.

When we remember how directly the chyle passes up the thoracic duct and is thrown into the venous circulation near the heart, from which it passes immediately to the lungs, it does not seem unreasonable to claim that an infection through the intestine may first show itself in the lung, or at least that the lesion in the lung will be so nearly contemporaneous with that of the intestine that it will be impossible to say which is primary.

I show here photographs of the intestines and lungs of two monkeys which were infected by feeding with pure cultures of tubercle bacillus in a series of experiments on the comparative virulence of the human and bovine organisms. In both the lungs are extensively diseased. We were unable to find any lesion whatever in the intestine of one and in the other (A 45007) there was only a slight lesion with caseation of three glands in relation to the upper portion of the tract. In this animal there was, however, enlargement and caseation of the cervical lymph glands, pointing to invasion through the tonsils or pharynx.

If these two specimens were shown without their history most pathologists would pronounce them cases of respiratory infection, yet they were kept under conditions which precluded this possibility, and were tested with tuberculin before the experiment began. May not these experiments explain many of those numerous cases seen in children in which pathologists are unable to decide the mode of invasion? In the series of autopsies reported by Northrup, in 34 out of 135 cases he could not determine the portal of entry.

INFECTION THROUGH THE TONSILS. The numerous observations made of late years leave no doubt that the tonsils sometimes act as the port of entry for the tubercle bacillus. As it is well put by Baup, "discussion is only possible as to the greater or less frequency of these lesions, and their pathological importance," a position sustained not only by