

EXPERIMENTS ON THE TRANSMISSION OF

SCARLET FEVER TO MONKEYS *

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In view of recent reports of the successful inoculation of monkeys with scarlet fever it was thought of interest to relate some experiments made in the interval from Dec. 10, 1909, to September, 1910. Materials from the throats and mouths of children with scarlet fever were collected on cotton swabs and the swabs washed off in milk. The milk thus infected was fed to monkeys. Thirteen monkeys (*Macacus rhesus*) were fed in this way; ten remained well, showing no fever or leukocytosis, and three died. The three monkeys which died may be designated as Nos. 1, 2 and 3.

No. 1 was fed the infected milk on Dec. 10, 11, 13 and 14, 1909, became sick December 20, and died December 21. The autopsy showed a fibrinous peritonitis. The peritoneal exudate and the heart's blood contained colon bacilli; no streptococci or other bacilli could be demonstrated by microscopic or cultural methods.

No. 2 was fed the same materials on the same days as No. 1. On Jan. 7, 1910, he became sick and died Jan. 17, 1910. At the autopsy there was a moderate general edema with fluid in the pericardium, and the urine in the bladder which was clear gave a marked zone of albumin with nitric acid, but no tube casts were found in it. Microscopically there were some parenchymatous changes in the kidneys.

No. 3 was fed infected milk on Jan. 26, 27 and 29, 1910. January 28 he became sick and died on January 31. Shortly before death the blood showed a leukocytosis of 38,800. At the autopsy no macroscopic lesions were found other than hemorrhage in the right adrenal. The pharynx was normal. Cultures from the heart's blood were sterile; no streptococci were found anywhere. Blood removed from the heart of this animal immediately after death was mixed with sterile milk, and fed to a healthy monkey (4) on Feb. 1, 2 and 3, 1910. On February 5, it became sick and refused food. Its temperature was 103.8 to 104.1 F. and the leukocyte count was 52,000. The leukocytes persisted for five days and disappeared, as the temperature subsided and the appetite returned.

We do not attempt to decide whether Monkeys 1, 2 and 3 really had scarlet fever, or whether the one which was fed the blood from Monkey 3 had this disease. The course of the sickness in this last animal, coming on four days after the feeding, running a short course accompanied by fever and leukocytosis is very suggestive. We were however, unable to observe any cutaneous eruption. If monkeys are susceptible to infection with scarlet fever, the susceptibility would seem to be rather slight and there must be a good deal of natural resistance as in man. We had hoped to add further observations before making a report, but as this matter is interesting so many just now, these experiments may be of use to others and are therefore reported.