

*Case V.*—Child, aged about three months. Was attacked by low fever, ranging from 100° F. in morning to 102° in afternoon. Onset was slow and accompanied by bronchitis. After making the usual examination, I diagnosed it as a case of catarrhal bronchitis. Patient was put on cough-fever mixture. No improvement followed. Having to leave town for about ten days, the child was left in charge of another physician. On my return it had fallen off considerably in weight, and the cough and fever were much the same. The medicine was changed, but with no benefit. A consultation was held, and all the probable causes of the fever and bronchial conditions discussed and searched for. Malaria was suggested, but was not considered possible in view of the high altitude, absence of mosquitoes, and our absolute knowledge of the child never having been out of the town at an elevation of 5,400 feet. After four or five days more the fever, which had never been normal during any of my calls, gradually assumed a slightly tertian type, and the clinical diagnosis of malaria was forced upon me. Prompt recovery followed small doses of quinine.

I record this case, as it was the first to arouse my suspicion that, in a few cases at least, other agents than the mosquito are instrumental in the spread of the disease. In watching for other such cases as confirmatory evidence, I have collected to date five more cases in infants, whose date of birth I knew, and who, to my positive knowledge, had never been out of the town where they were born. These five cases were all diagnosed microscopically.

In searching for the agent at work in the transmission of malaria from infected persons to these uninfected children, I noticed that the outbreak of malaria in the spring followed closely the date at which the fleas — which here constitute a veritable pest — became troublesome. My suspicions were directed to them, and with the hope of determining whether they were a factor, I undertook the following small experiment.

Several fleas (*Culex serracicus*) were procured from a dog, and, after being kept in a glass beaker for some time, one was placed under a watch glass on the forearm of a malarial patient. The flea was afterwards killed, the blood extracted from the stomach and examined with the oil-immersion. Several corpuscles were seen containing the same type of parasite as was found in the patient's blood, and in the same stage of development. The experiment was repeated several times, and free spores also were found. This experiment is not positive proof that the flea is capable of inoculating an uninfected person with the disease, but it is, at least, suggestive; and, taken in conjunction with the clinical evidence, seems to point to the flea as one of the probable