RESEARCH NOTE

EFFECT OF ANGIOSTRONGYLUS CANTONENSIS *ON THE BLOOD PICTURE OF RATS*[1]

The rat lungworm, *Angiostrongylus cantonensis*, is a very important parasite because it has been reported to infect man in Formosa[2] and Thailand[3] and has been found as the etiological agent of "eosinophilic meningoencephalitis" of man in Hawaii.[4] A review of the literature has revealed that studies were performed on the effect of *A. cantonensis* on the blood-cell count of monkeys[5,6] but not on rats, its natural host. It was deemed wise, therefore, to know the effect of *A. cantonensis* on some of the blood picture of rats.

Twelve young and apparently healthy laboratory-raised rats were distributed at random into four lots with three rats in each lot. Lot 1 was infected with 100 third-stage larvae, lot 2 with 50 larvae, lot 3 with 25 larvae, and lot 4, the control, was not treated with infective larvae. The rats were infected intraeosophageally with the third-stage larvae freshly recovered through artificial pepsin digestion from naturally infected African snails, *Achatina fulica*. The inocula were prepared by dilution count. They were confined in individual cages and were kept in a room at 70° to 75° F. temperature. A commercial "pelleted" feed was given

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[2] Nomura and Lin, quoted by Hsieh, H. C., Outline of parasitic zoonoses in Taiwan, *Formosan Sci. 13:* 99–108, 1959.

[3] Prommindaroj, K., Leelawongs, N., and Pradatsundarasar, A., Human angiostrongyliasis of the eye in Bangkok, *Amer. J. Trop. Med. & Hyg. 11:* 759–61, 1962.

[4] Alicata, J. E., Angiostrongylus cantonensis (Nematoda: Metastrongylidae) as the causative agent of eosinophilic meningoencephalitis of man in Hawaii and Tahiti, *Can. J. Zool. 40:* 15–8, 1962.

[5] Alicata, J. E., Loison, G., and Cavallo, A., Parasitic meningoencephalitis experimentally produced in a monkey with larvae of *Angiostrongylus cantonensis*, *J. Parasitol. 49*(1): 156–7, 1963.

[6] Weinstein, P. P., Rosen, L., Laqueur, G. L., and Sawyer, T. K., *Angiostrongylus cantonensis* infection in rats and rhesus monkeys and survival of the parasite *in vitro*, *Amer. J. Trop. Med. & Hyg. 12*(3): 358–77, 1963.

ad libitum and fresh clean water was supplied at all times. The hemoglobin concentration, the red blood-cell and white blood-cell counts and the differential white-cell count were recorded before infection and every week for 5 consecutive weeks after infection.

Two-centimeter blood samples were obtained from the tail-vein. To facilitate bleeding, the tails were exposed under a lamp for 2 to 3 minutes before they were cut. The anticoagulant used was "Sequester-Sol" (dipotas-

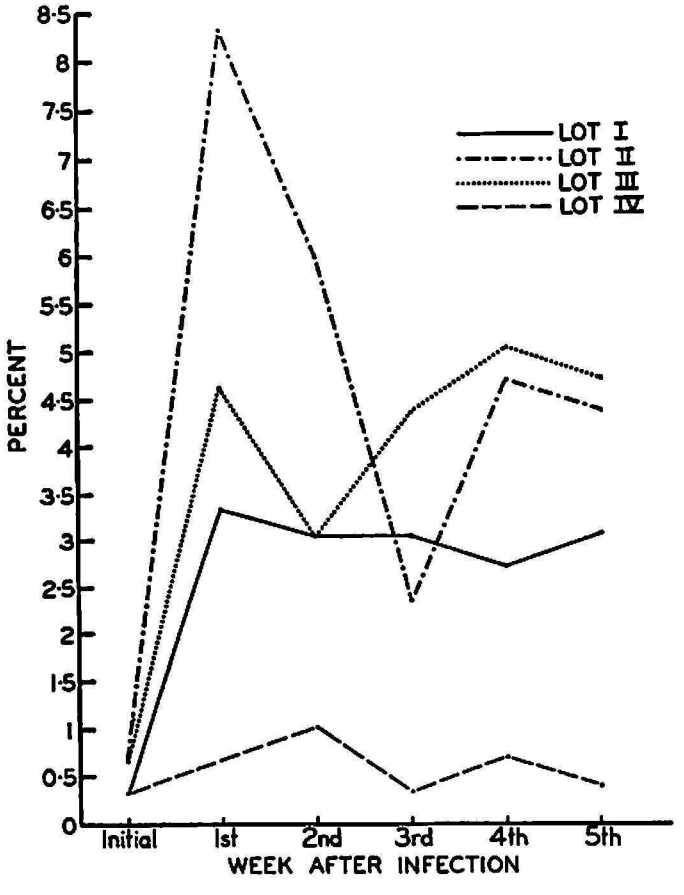

FIG. 1.—The average initial eosinophil count and the weekly average eosinophil count (percent) postinfection of the experimental rats.

sium ethylenediamine tetra-acetate solution). From the blood samples thus obtained the blood films were prepared on glass slides and stained with Wright's stain. Two hundred white blood cells in consecutive fields were counted and the percentage estimated. The hemoglobin concentration in grams per 100 c.c. of whole blood was estimated with an A. O. Spencer hemoglobinometer. The red blood-cell and white blood-cell counts were determined following the technique described by Stitt *et al.*[7]

A. cantonensis did not significantly affect the hemoglobin values and the

[7] Stitt, E. R., Clough, P. W., and Clough, M. C., Practical Bacteriology, Haematology, and Animal Parasitology, 9th ed., P. Blakiston Son & Co., Inc., Philadelphia, Pa., 296–9.

red blood-cell and white blood-cell counts of rats in a 5-week experiment. There was, however, a relative eosinophilic leucocytosis in all lots a week after infection until the termination of the experiment. The manner in which the eosinophil increases and decreases in the infected lots is shown in figure 1.

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