

SUMMARY

Chicks fed a diet in which corn was the principal ingredient, in contrast to other rations employed, were the only ones in which the typical nervous disorders were noted and typical brain lesions observed upon autopsy.

The preliminary data at hand, although not of a definite nature, would seem to indicate that some factor or factors of the corn used were responsible or at least contributory to this disorder.

JOHN P. DELAPLANE

H. O. STUART

C. P. HART

RHODE ISLAND AGRICULTURAL
EXPERIMENT STATION, KINGSTON

THE INSECT VECTOR FOR THE NATURAL TRANSMISSION OF EPERYTHROOON COCCOIDES IN MICE

It has been recognized since 1930¹ that the white mice used for experimental purposes in this country may harbor a latent blood infection which is distinct from *Bartonella muris* but which like it is activated by splenectomy. The infecting organism, *Eperythrozoon coccoides*, was first described two years previously in Berlin.² It is a small ring-shaped body, usually less than 1 μ in diameter, staining reddish blue by Giemsa or Wright's stain. It appears in great numbers on the red cells as well as in the plasma within one to several days following splenectomy of the carrier animal. The fact that normal carrier mice are apparently little affected by the organism and that (unlike *Bartonella muris* infections) the multiplication of the parasite following splenectomy results in no marked pathological change, has led to a rather general oversight of the possible influence of the *Eperythrozoon* on experimental results. Certain changes in the blood picture and in the size and histology of the spleen in the infected animal have recently been demonstrated.^{3,4} These deviations from normal may be sufficiently great at times to be significant when exact studies on the relation of the spleen to disease and resistance are under investigation.

The presence or absence of the latent *Eperythrozoon* infection can be demonstrated by splenectomy. The uninfected mice when kept isolated from other stock will remain free of the organism. The intraperitoneal injection of blood from a carrier mouse or from one showing active infection serves as a simple method for laboratory transmission. The means for the natural

transmission of the parasite from mouse to mouse has not been recorded up to the present time. The fact that the *Eperythrozoon* is a blood parasite and that it spreads gradually but surely through a colony of mice kept under the usual laboratory conditions points to the rôle of an insect vector in its natural transmission. Negative results have been reported with the rat louse and with fleas.^{1,5,6} By analogy with the natural transmission of *Bartonella muris* this vector might be suspected to be the mouse louse.⁷ A series of simple experiments revealed that the louse *Polyplax serrata* does indeed serve as the insect vector of *Eperythrozoon coccoides* from mouse to mouse.

A group of mice known to be free from latent *Eperythrozoon* infection was splenectomized and kept in rigid quarantine. These served as the susceptible hosts for the transmission tests. The more commonly occurring ectoparasites in an infected colony of mice were identified and used for the transmission experiments. There were no fleas in this infected colony. The two species of mites tested, *Myobia musculi* and *Mycopetes musculinus*, failed to transmit the *Eperythrozoon* by feeding on the test host.

The experience with the louse *Polyplax serrata* was quite different. In each of eleven experiments the adults and nymphs were shown to be capable of transmitting *Eperythrozoon coccoides* to the uninfected test host by feeding on it. The organisms appeared in the blood of these splenectomized animals in from nine to seventeen days, depending on the conditions of the experiment. In two other trials in which the adult lice were kept away from the host for several hours, transmission failed to take place. The nymphs from the same host, however, that were starved for the same length of time were capable of transmitting *Eperythrozoon*. These results suggest that the strong digestive fluids of the adult louse destroy the organism, while the less active alimentary juices of the nymph permit longer survival. The details of these and other experiments are to be reported later.

CALISTA P. ELIOT

SCHOOL OF HYGIENE
THE JOHNS HOPKINS UNIVERSITY

VISCERAL LEISHMANIASIS IN BRAZIL

THE viscerotomy service of The Rockefeller Foundation detected, between March, 1932, and July, 1936, eighty-five specimens of liver containing leishmania bodies morphologically identical with those of *Leishmania donovani*, which produces Indian and Mediterranean kala-azar. These bodies and the liver lesions

¹ C. P. Eliot and W. W. Ford, *Amer. Jour. Hyg.*, 12: 677-680, 1930.

² V. Schilling, *Klin. Wchnschr.*, 72: 1853, 1928.

³ J. Marmorston, *Jour. Infect. Dis.*, 56: 142-153, 1935.

⁴ M. R. Lewis and C. P. Eliot, to be published.

⁵ R. Bruynoghe and Vassilidis, *Compt. rend. Soc. de Biol. T. C.* 763, 1929.

⁶ D. Weinman, Amédée Legrand, Editor, Paris, 1935.

⁷ C. P. Eliot and W. W. Ford, *Amer. Jour. Hyg.*, 10: 635-642, 1929.