

The following deals with the experimental infection of the tick, *Ornithodoros turicata* (Duges) with *Trypanosoma cruzi* Chagas and subsequent transmission of this species of trypanosome to normal white mice.

The outline of the experiment is as follows:

Data Concerning Ticks Used. Thirty clean larval ticks, *Ornithodoros turicata* (Duges) reared in the laboratory from a clean adult female tick taken in Texas, 1937.

Procedure. One white mouse, previously infected by means of an intraperitoneal inoculation of one cubic centimeter sterile saline to which was added a few droplets of fecal material taken from infective cone-nose bugs of the species *Triatoma protracta* Uhl.,* was placed in a special wire feeding cage and the ticks applied to the smooth skin of the abdomen of the animal.

Time of Feeding. First tick attached, 8:36 a. m.; detached, 9:25 a. m. Last tick attached, 9:38 a. m.; detached, 11:55 a. m.

Date of Feeding. August 20, 1937.

Date Ticks Molted. September 1, 1937.

Due to adverse temperature and humidity conditions only 5 of the 30 larval ticks molted successfully to the nymphal stage, the others died during the process of ecdysis. Upon examination of the larvae from time to time, after having engorged on the blood of the infected mouse, the larvae were observed to molt and further examination revealed that the ticks were still in the larval stage but considerably larger in size. In a survey of the literature dealing with this species of tick, the author has been unable to find a record stating definitely the number of larval instars during the life cycle of *Ornithodoros turicata* (Duges). In this instance the larval forms passed through 2 distinct larval instars and then molted again at which time the first nymphal stage appeared.

Infection of Normal White Mice. On September 8, 1937, the 5 nymphal ticks (referred to above) were placed on the abdomen of a normal white mouse but refused to feed. Three of these were subsequently macerated in a hard glass test tube and mixed with one cubic centimeter sterile saline solution. Two normal white mice were then inoculated intraperitoneally with the tick-saline solution—each mouse receiving one-half a cubic centimeter. Blood smears were prepared daily from the tail of these animals and examined under darkfield illumination and in smears fixed in methyl alcohol and stained with Giemsa stain. The 2 remaining ticks were saved for further study.

* These insects acquired their infection by engorging on infective mouse blood containing a Brazilian strain of the organism, *Trypanosoma cruzi* Chagas.

Results. On September 29, 1937, (21 days following inoculation) both mice were positive for *Trypanosoma cruzi* Chagas in fresh blood preparations and in stained blood smears. The mice died 5 and 6 days later respectively. Similar experiments were conducted simultaneously in which a large number of the argasine tick, *Ornithodoros hermsi* Wheeler were used. To date all feeding and inoculation tests have given negative results. Further experiments are in progress with *Ornithodoros turicata* (Duges) and *Ornithodoros hermsi* Wheeler.

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High Gonadotropic Hormone Concentration in Pregnant Ponies.

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Data from several hundred assays of mare sera for gonadotropic hormone point to the existence of an inverse relationship between body size and hormone content, draft mares usually having a lower concentration than the lighter Thoroughbred mares. This observation led to a study of the concentration in the pony. The sera of grade Welsh ponies were tested according to the method of Cole, Guilbert and Goss.¹ In some instances complete tests were not made, however, if the concentration was lower than 100 R.U. per cc. The results of tests on 10 ponies are shown in Table I. It is clear that a concentration of 200 to 400 R.U. per cc. is not at all uncommon, while we have never found sera testing 200 R.U. per cc. from Thoroughbred or draft mares. The range found is from 12 to 100 R.U. per cc. with a mean of 75 R.U. per cc. in the latter breeds. The data of Catchpole and Lyons² indicate that mustangs fall in the upper portion of this range. Thus the concentration in certain ponies is four times greater than has been found in the breeds mentioned. In serum testing 400 R.U. per cc. the rat unit represents approximately 0.25 mg. of dry matter. Thus it would seem that the blood of such ponies would be an excellent starting material for chemical studies.

The data of Table I show further that a variation in concentration occurs from year to year in the same mare. This is particularly

¹ Cole, H. H., Guilbert, H. R., and Goss, H., *Am. J. Physiol.*, 1932, **102**, 227.

² Catchpole, H. R., and Lyons, W. B., *Am. J. Anat.*, 1934, **55**, 167.