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A Sporozoan Parasite of Triatoma rubida uhleri*

by

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During the examination of rectal contents of bloodsucking reduviids collected from rat dens of *Neotoma albigula* near Tucson, Arizona, 9 *Triatoma rubida uhleri* of 451 dissected were found to contain developmental stages of a sporozoan. The stages observed were oöcysts, sporocysts and sporozoites.

Both sporulated and unsporulated oöcysts (Figs. 1, 2 and 3) were observed. These were of an irregular shape, measuring between 400 and 500 μ. The sporulated oöcysts contained several hundred sporocysts (53-73 $\mu \times$ 23-33μ), and each sporocyst (Fig. 4) contained aproximately 20-40 sporozoites (17-20 $\mu \times$ 3-5 μ). The oöcyst and sporocyst walls (Fig. 5) were thin and collapsed when dried. Cover glass pressure also caused the cysts to rupture. Motile sporozoites (Fig. 6) were observed which exhibited a typical flexing movement as is observed in sporozoites of other species of sporozoans. The morphology of these stages indicates that the organism fits into the genus *Hepatozoon.*

TALICE (4) in 1929 observed a sporozoan parasite of *T. rubrovaria* in Montevideo. He not only found free sporozoites, but also a large cyst in the intestinal wall which contained approximately 200 sporozoites. However, no mention is made if the oöcyst contained sporocysts with sporozoites or free sporozoites. The measurements of the sporozoites averaged 19 $\mu \times$ 4 μ. The organism was thought to be a *Haemogregarina* with the possibility of a lizard as the vertebrate host.

An additional observation of a sporozoan parasite of *Triatoma* was made by OSIMANI (1) in 1942. He observed and named a sporozoan parasite of the lizard *Tupinambis teguixin* which was transmitted by *Triatoma rubrovaria.* This was thought to be the same parasite as observed by Talice, although Osimani did not find the large cysts which Talice observed and it was named *Haemogrega-*

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rina triatomae. However, this organism was later re-named as *Hepatozoon triatomae* by REICHENOW (3) in 1953, apparently on the basis that Osimani described the life cycle as having schizogonic stages in the liver of the lizard which is a definitive characteristic of the genus *Hepatozoon.*

In comparing the oöcysts observed by Osimani to the sporocysts observed in Arizona we find that they vary only slightly in size and contain approximately the same number of sporozoites. The large oöcysts observed in Arizona were found in only one of the 9 infected *Triatoma* and, being thin walled and easily ruptured, it would be easy to overlook this stage. In making the above comparisons it seems that the sporozoan observed in Arizona corresponds to *Hepatozoon triatomae.* The final confirmation could be given by the observation of the vertebrate forms.

There are a variety of reptiles which could serve as the definitive host in Arizona which are closely associated with rat dens. WOOD (6) in 1944 reported collecting 16 species of reptiles from rat dens, and any one of these might be suspected as being the definitive host. However, the reptile most frequently found in the rat dens of the Tucson area was the lizard, *Sceloporus magister,* and this was the only reptile found inhabiting dens in areas from which infected bugs were collected. It was observed in this study, and by RYCKMAN (3) in California, that when a rat den containing a *Sceloporus* was being torn apart, the lizard would repeatedly return to the den. From the observations made in Arizona, it is believed that *S. magister* shares the den with *Neotoma* and that it does not use it as a temporary refuge from predators.

WOOD (5) reported in 1944 that *T. rubida uhleri* fed experimentally on several species of reptiles including *Sceloporus.* On examination of the crop contents, 7 *T. rubida uhleri* were found from various rat dens to contain nucleated erythrocytes indicating that this species of *Triatoma* probably does feed on reptiles in natural conditions.

SUMMARY

A sporozoan parasite was observed in 9 of 451 *Triatoma rubida uhleri* collected near Tucson, Arizona. This organism is believed to correspond to *Hepatozoon triatomae* (Osimani, 1942) Reichenow, 1953.

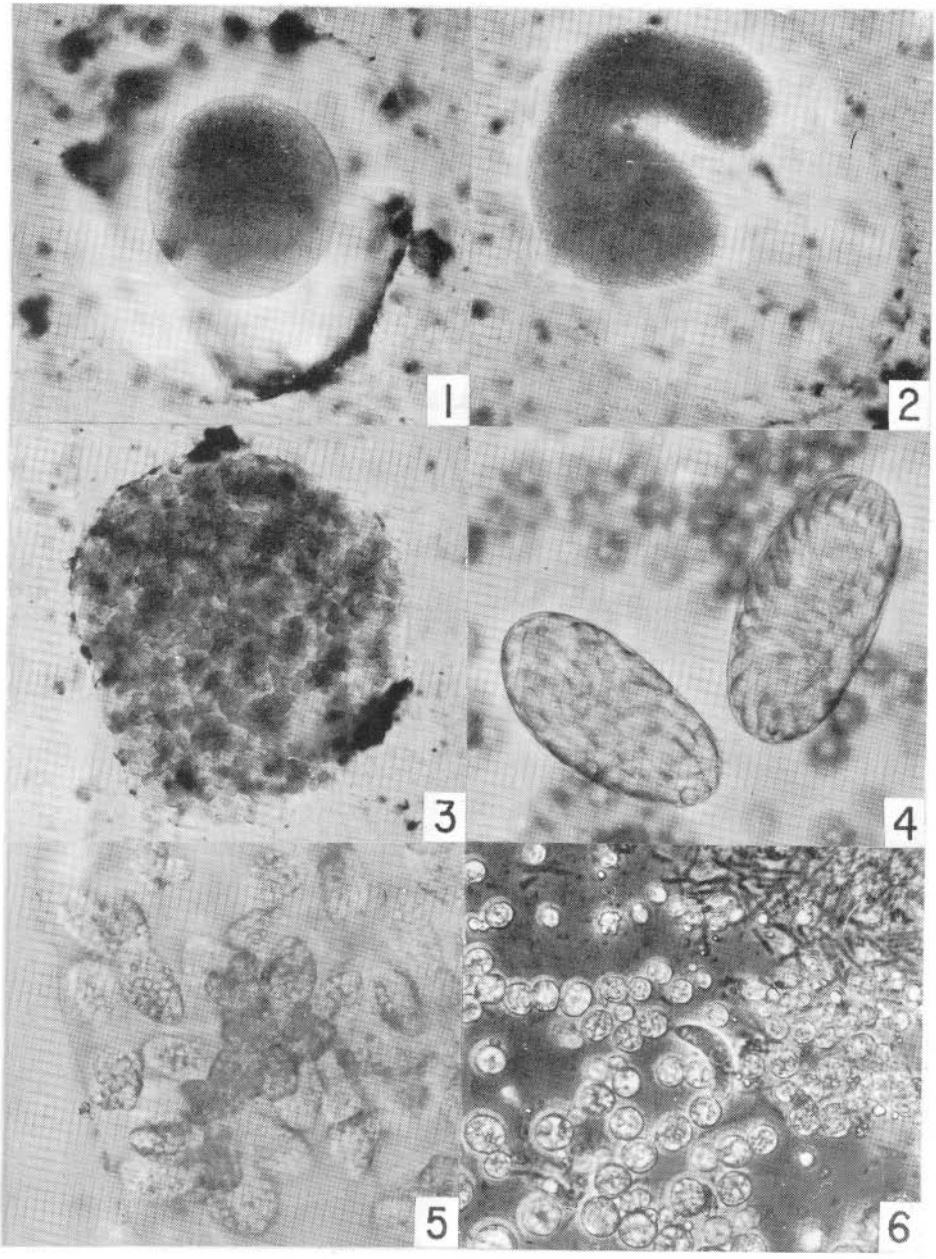
Figs. 1-6. Various stages of sporogony in *T. rubida uhleri* (unstained material, using phase contrast and bright field).

Figs. 1-3 Oöcysts in various stages of sporulation (101 ×).

Fig. 4. Two sporocysts from a ruptured oöcyst (512 ×).

Fig. 5. A portion of an oöcyst showing the wall and partially developed sporozoites (400 ×).

Fig. 6. One sporozoite freed from a sporocyst. (1200 ×).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RESUMEN

Se reporta el hallazgo de un esporozoario en el intestino de 9 ejemplares de *Triatoma rubida uhleri* de un total de 451. Los insectos fueron capturados en nidos de ratas *Neotoma albigula* cerca de Tucson, Arizona, U.S.A. Se discute la posibilidad de que el parásito corresponda a *Hepatozoon triatomae* (Osimani, 1942) Reichenow, 1953, y de que el huésped vertebrado del esporozoario sea la lagartija *Sceloporus magister.*

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