

A NEW PROTOZOAN PARASITE FROM A BDELLID  
MITE.

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One Text Figure.

The parasite here described was found occurring in one of four Bdellid (*Biscirus intermedius*) mites from Tasmania. The mite containing the parasite was kindly placed at my disposal by Mr. H. Womersley, A.L.S., F.E.S.

The parasite was present in the abdominal region of the mite, the exact position being shown in the figure. It was reniform, and was approximately one-eighth the size of the animal.

The general appearance was rather Sarcosporidian in nature, under low power being somewhat granular. Under higher powers no sign of spores could be observed, the granules appearing purely protoplasmic in nature.

Attempts were made to stain the parasite *in situ* with borax carmine. The protoplasm of the mite was, however, more chromophilic than that of the parasite, or there may have been a stain resistant wall around the parasite; in any case, it was quite obscured by the deeply staining mite cytoplasm.

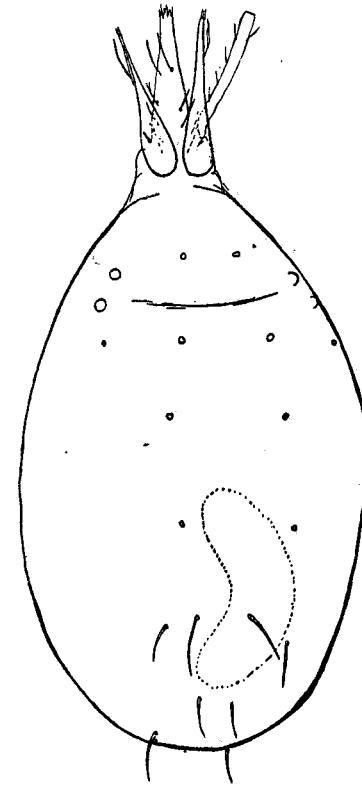
The abdomen of the mite was dissected off, and with the aid of a microscope and fine needles the parasite was removed from the abdomen.

Freed from the surrounding host tissues, the parasite was observed to be stained a light pink by the borax carmine, the granulations of the cytoplasm not indicating any chromophilic tendency, and even when the parasite was broken there was no indication of contained spores.

It was at first thought that this parasite may be an egg, but it is at least twice as large as any Bdellid egg known, and, in any case, the eggs of these mites are invariably

perfectly spherical, produced in greater numbers than one at a time, and covered with numerous clavate hairs. There was no signs of hairs on the parasite.

The possibility of the parasite being some object that the mite had ingested was also considered, but this was precluded by the fact that it was not within the alimentary canal, and appeared to be free within the body cavity.



Drawing by Mr. H. Womersley, A.L.S., F.E.S., of the mite *Biscirus intermedius* (Sig Thor), showing the parasite dotted in position in the abdominal portion of the mite. (Times 55.)

It is unlikely that it would be the egg of invading multicellular parasites such as Nematodes, since, for one of these to lay an egg this size it would need to be at least as large as the mite.

## SYSTEMATIC POSITION OF THE PARASITE.

The parasite described above does not appear to be represented in the literature, but is obviously Protozoan in nature, a member of the Sporozoa.

The only group into which this parasite could be made to fit is that known as the Haplosporidia, which Wenyon considers may be fungoid in nature. Wenyon states in connection with the Haplosporidia that "they are found in aquatic Invertebrates and Fish." Sig Thor has, however, found small bodies in mites on the Continent which he has referred to Haplosporidia; his parasites are, however, very different from that here described.

The parasite is undoubtedly different from any other recorded type, and would appear to be somewhat akin to the Sarcosporidia before they begin to divide up into spores and simply possess granular cytoplasm. The position in the host (free in the body cavity) would indicate some connection with the Haplosporidia. It is probable that at a later stage the parasite would divide up to form spores, and that the stage which has been described is very young. From the fact that only one mite in four from the same locality, and no other of some hundreds of Australian Bdellid mites examined by Mr. Womersley have show the presence of this parasite, and no other worker appears to have observed it, it is apparently quite rare.

In view of the lack of knowledge of the spores of this parasite, it is difficult to refer it to its exact systematic position, although I am placing it tentatively in the Haplosporidia. I feel, however, that it will eventually require a new order of the Sporozoa to receive it; this could not be done with the material so far examined, and until a more detailed knowledge of the various forms of the parasite during its life history is available.

## REFERENCES.

- THOR, SIG: "Skrifter om Svalbard og Ishavet, No. 27. Oslo, 1930.  
WENYON: "Protozoology," Vol. I. London, 1926.

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