New Host Records for Helicosporidium parasiticum

In a report of infection by Helicosporidium parasiticum in a unique larval specimen of Hepalis pallens (Hepialidae, Lepidoptera) from Argentina, J. Weiser (J. Protozool. 17, 436-440, 1970) noted that the pathogen had been rarely observed and that it had not been reported from additional hosts since the original description by D. Keilin (Parasitology 13, 97-113, 1921). Keilin's data suggested, however, that H. parasiticum had a broad host range since it had initially been isolated from a mite and from two species (two families) of Diptera. Keilin had access to fresh spores, but he did not report attempting to transmit the pathogen to alternative hosts. The present paper reports several new host records that we obtained by the transmission of H. parasiticum in our laboratory.

The spores of H. parasiticum used in our work were originally isolated from infected larvae and adults of Carpophilus mutilatus (Nitidulidae, Coleoptera) collected at College Station, Texas, on November 7, 1970. Subsequently, a diseased culture of this beetle was established at our laboratory. The susceptibility of various species of insects and mites was thereafter investigated as host specimens became available. In these studies, fresh sporocysts were suspended in water and applied to the mouth parts of the insects or in the diet of mites. After 10 days, fresh preparations of fat tissue were examined for sporocysts and other developmental stages under phase contrasts to confirm infection.

The following species were found susceptible to infection (immature specimens were tested, except as noted):
Formicidae
   *Solenopsis xyloni* (adult)

Diptera
   Anthomyiidae
   *Fannia canicularis*

No attempt was made to evaluate the comparative virulence of *H. parasiticum* in the known hosts. An estimated LC$_{20}$ for *P. transitella*, however, was determined to be $2.0 \times 10^4$ sporocysts per gram of diet. Because of its broad host range among economically important stored-product insects, *H. parasiticum* may have potential as a microbial control agent, particularly when applied in combination with a bait or feeding stimulant. We plan to conduct further studies to evaluate this potential.

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