

A new gregarine parasite of *Plodia interpunctella* (Insecta: Lepidoptera)

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Gregarines are a group of apicomplexans that are closely related to the human pathogen *Cryptosporidium*. Although this group of protozoans does not have any close impact on human life, it has been suggested that some species are potentially useful for the biological control of insects. Gregarines are also of interest from an evolutionary point of view, because they are thought to be deep-branching apicomplexans. In the present study, a species of gregarine parasite was found in the midgut of a lepidopteran insect, *Plodia interpunctella*. It was characterized by a septum between promerite and deutomerite, solitary sporadines and simple knob-like epimerites. Although morphological features of gametocysts and spores were not examined, the above morphological features and its host specificity indicate that the species can be assigned to the family Leidyaniidae, which contains a single genus *Leidyana*. The genus *Leidyana* is very similar in many respects to *Gregarina*, the only difference being that *Leidyana* is always solitary before syzygy, while *Gregarina* gamonts form associations. This is the second record of *Leidyana* in a lepidopteran insect in Japan, following that of *L. latiformis* in a tineid moth (Hoshide, 1958).