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A Newly Recorded Gregarine Parasite of *Chaetocnema tibialis* (Coleoptera, Chrysomelidae) from Turkey

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Abstract: A gregarine parasite of *Chaetocnema tibialis* (Chrysomelidae, Coleoptera) is reported for the first time.

Key Words: *Chaetocnema tibialis*, gregarine parasite

***Chaetocnema tibialis* (Coleoptera, Chrysomelidae)'in Yeni Olarak Kaydedilmiş Bir Gregarin Paraziti**

Özet: *Chaetocnema tibialis* (Chrysomelidae, Coleoptera)'in bir gregarin paraziti ilk kez kaydedilmektedir.

Anahtar Sözcükler: *Chaetocnema tibialis*, gregarin paraziti

Introduction

Chaetocnema tibialis (Chrysomelidae, Coleoptera) is a major sugar beet pest in Turkey. Chemical pesticides utilized to control this pest have harmful effects on the environment. In contrast, natural enemies of insects have certain advantages over chemicals as control agents. Consequently, natural enemies of *C. tibialis* are of great interest. Several beetles from the Chrysomelidae family are frequently parasitized by gregarines. Théodoridés (1988) lists 8 species belonging to the Gregarinidae from different hosts. Clopton et. al. (1992) described *Gregarina coronata* from *Diabrotica undecimpunctata howardi* (Coleoptera: Chrysomelidae). Recently, Yaman (2002) recovered *G. phyllotretae* from *Phyllotreta undulata* and *P. atra* in Turkey, and Yaman and Radek (2003) recorded a new microsporidian parasite of *C. tibialis*. However, there is no gregarine record from *C. tibialis*. In this paper I report on a new gregarine parasite of *C. tibialis*.

Materials and Methods

Adults of *C. tibialis* were collected in Trabzon (Darıca), Turkey. Each beetle was dissected in a physiological

solution and its mid-intestine was examined microscopically at a magnification of x40 to x400. The following abbreviations are used in this paper; TL - total length, LP - length of the protomerite, LD - length of the deutomerite, WP - width of the protomerite, WD - width of the deutomerite, LP:TL - ratio of the length of the protomerite to total length, WP:WD - ratio of the width of the protomerite to the width of the deutomerite and WP:TL - ratio of the width of the protomerite to total length.

Results and Discussion

Parasitic infection was observed in a population of *C. tibialis* collected in Trabzon. Out of 152 beetles examined 96 were infected by the parasite, which was found in the midgut lumen of *C. tibialis* (Figure). Morphological features of the parasite showed that it is a cephaline gregarine. The gregarine parasite is divided into 2 segments, the protomerite and the deutomerite. The epimerite is from spherulelike to knoblike and is divided by a septum from the rest of the protomerite. The sporadins occurred in caudo-frontal association.

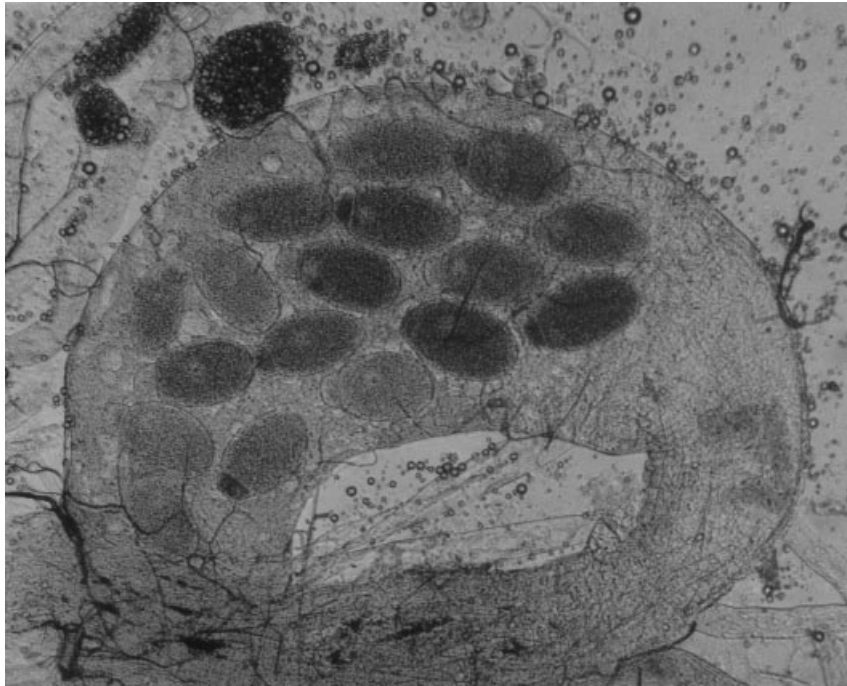


Figure. Gregarines in the gut lumen of *C. tibialis* (x150)

Measurements of the sporadins of the gregarine parasite (in μm):

TL: 75-185, LP: 8-37, LD: 53-150, WP: 23-45, WD: 30-113, LP:TL: 3.3-9.8, WP:WD: 1.0-3.2.

Théodoridés (1988) lists 8 species belonging to the Gregarinidae from different hosts. Clopton et al. (1992) described *G. coronata* from *D. undecimpunctata howardi* (Coleoptera, Chrysomelidae). Recently, Yaman (2002) recovered *G. phyllotretae* from *P. undulata* and *P. atra* in Turkey. The present gregarine differs from *G. phyllotretae* in terms of morphological ratios and the shapes of the protomerite and deutomerite. It also differs in the shape of the epimerite (spherical papilla epimerite

in *G. phyllotretae*). There is not a single gregarine record from *C. tibialis*. Therefore, the parasite has been recorded as a new gregarine parasite of *C. tibialis*. Further research will be directed towards observing other life stages of the parasite and its identification at species level.

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