

Natural enemies of tettigoniids of Tamil Nadu

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Four habitats representing forestlands, grasslands, arablelands, and wastelands were surveyed for the natural enemies of tettigoniid species (a lesser known, or unstudied group of orthopteroid insects) from a total of 50 sites in twenty three districts of Tamil Nadu (Chennai, Coimbatore, Dindigul, Dharmapuri, Kanchipuram, Madurai, Nilgiris Tanjore, Vellore, Salem, Namakkal, Tuticorin, Tirunelveli, Kanyakumari, Karur, Erode, Perambalur, Pudukottai, Ramanathapuram, Sivagangai, Theni, Tiruchy and Virudhunagar) during June 1999 to May 2002. Studies on the natural enemy complexes had given us good record. A nematode *Hexamermith* sp. (Nematihelminthes:Mermithidae) is isolated from *Himertula* sp. (Phaneropterinae) from wasteland at Madurai. This nematode is long (33cm in length) and thread like, present one or two numbers in the body cavity of the insect.

A number of tettigoniid species are susceptible to protozoan parasites, sporozoans in particular. Gregarines are parasitic on a number of grasshoppers and tettigoniids. *Euconocephalus incertus* (Walk.) (Conocephalinae) is highly susceptible to, *Leidyana* sp. (Protozoa:Apicomplexa), a gregarine and *Conocephalus maculatus* (Le Guillou) (Conocephalinae) is susceptible to the microsporidian, *Nosema* sp. as well. *Hentschelia* sp. (nov) (Protozoa:Apicomplexa), another

gregarine species attacked *Himertula* sp. (Phaneropterinae) and *Elimaea (Orthelimaea) securigera* (Brun.) (Phaneropterinae) collected from the grassland at Tambaram (Chennai) (**Table 1**). During the survey of tettigoniids in different districts of Tamil Nadu, it was noticed that a gregarine, *Leidyana* sp. and a microsporidian, *Nosema* sp. attacking *E. incertus* and *C. maculatus* widely. It was also found that natural enemies of tettigoniids played a major role in the reduction of their population considerably. Acridids which were considered a minor pest in the past, are gaining importance as a major pest in recent years. Tettigoniids which are closely related to acridids, may be viewed as potential pests. Considering this, these natural enemies are the best tools to devise suitable control strategies in the eventuality of their attaining a pest status.

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Table 1. Natural enemies of tettigoniids of Tamil Nadu

S. No.	Species	Natural enemies	Habitat
1	<i>Conocephalus maculatus</i> (Le Guillou)	<i>Nosema</i> sp. (Microsporidian) Protozoa/Sporozoa	Arableland
2	<i>Euconocephalus incertus</i> (Walk.)	<i>Leidyana</i> sp. (Gregarine) Protozoa/Apicomplexa	Arableland
3	<i>Elimaea (Orthelimaea) securigera</i> (Brun.)	<i>Hentschelia</i> sp. (Gregarine) Protozoa/Apicomplexa	Grassland
4	<i>Himertula</i> .sp.	1. <i>Hexamermith</i> sp. (Nematode) Nematihelminthes/Mermithidae. 2. <i>Hentschelia</i> sp. (Gregarine) Protozoa/Apicomplexa	Wasteland Grassland