New Records of Pentatomids as Hosts of Hexacladia smithii Ashmead (Hymenoptera: Encyrtidae) in Southern Brazil

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ABSTRACT - Adults of the tomato stink bug, Arvelius albopunctatus (De Geer), from pasture lands at Londrina, Paraná state (latitude 23º 18' S; longitude 51º 09' W) and of Dichelops furcatus (F.) (Heteroptera: Pentatomidae) from field crops at Cruz Alta, Rio Grande do Sul state (latitude 28º 38' S; longitude) southern Brazil were parasitized by Hexacladia smithii Ashmead, which are set as new host records for this parasitoid.

KEY WORDS: Insecta, Heteroptera, Pentatomidae, parasitism

The tomato stink bug, Arvelius albopunctatus (De Geer) (Heteroptera: Pentatomidae), is a Neotropical pentatomid, which also occurs in the southwestern U.S., Mexico, and the West Indies (Froeschner 1988). In Brazil, it is reported on plants of the family Solanaceae, including tomato, potato, and several wild and cultivated species (Silva et al 1968, Rizzo 1976, Grazia 1977, Panizzi & Slansky 1985). Despite its occurrence on cultivated plants its pest status is controversial (review by Panizzi et al 2000, Gallo et al 2002).

During January 25 and February 02, 2010 surveys of the tomato stink bug were conducted on the wild solanum plants, Solanum palinacanthum and Solanum paniculatum, located in pasture lands at Londrina, northern Paraná state, southern Brazil (latitude 23º 18' S; longitude 51º 09' W). Adult stink bugs were taken to the laboratory and placed in transparent plastic containers (20 x 20 x 24 cm) covered with a meshed lid, and fed fresh green bean pods, raw shelled peanuts, tomato and Solanum palinacanthum and S. paniculatum fruits. Insects were kept at controlled conditions (25 ± 1°C, 60 ± 10% RH, 16:8 h L:D) for the establishment of a colony for pheromone studies.

Seven out of 30 adults (23.3%) collected on January 25th, and four out of 15 adults collected on February 2nd (26.6 %), were parasitized by Hexacladia smithii Ashmead. Parasitized adults showed dark spots in the abdomen, indicative of the presence of the endoparasitoid. Parasitoid adults emerged by cutting a round hole on the stink bug abdomen. In general, several specimens of the parasitoid emerged from a single host that died soon after their emergence. From A. albopunctatus, we recorded 17 parasitoids from each of two adults (no data are available for the remaining parasitized bugs), which is in the range of what is observed for several other bugs (from 2 to 39 parasitoids/host) (Costa Lima 1930, Corrêa-Ferreira et al 1998).

Dichelops furcatus (F.) (Heteroptera: Pentatomidae) from Cruz Alta, Rio Grande do Sul, southern Brazil (latitude 28º 38' S; longitude) were collected in field crops areas under no-tillage cultivation after soybean cultivation and with wheat seedlings in June 2006. They were taken to the laboratory and treated as described above. Over 30% of adults were parasitized by H. smithii. A single Edessa meditabunda (F.) adult from the Londrina area, collected from a soybean field in February 2010, was also found parasitized by this encyrtid, which was previously recorded (Cuezzo & Fidalgo 1997). Hexacladia smithii is not restricted to pentatomids since it has also been recorded to attack coreids and scutellerids (Costa Lima 1930, 1940, Baldin et al 2010), indicating its polyphagy.

In conclusion, H. smithii parasitism on A. albopunctatus and on D. furcatus sets up new records for the association of this parasitoid with pentatomid hosts.

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References


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