SCIENTIFIC NOTE

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

Antônio R Panizzi, Jovenil J da Silva

Lab de Bioecologia de Percevejos, Embrapa Soja, CP 231, 86001-970 Londrina, PR, Brasil
panizzi@cnpso.embrapa.br

Edited by Fernando L Cônsoli – ESALQ/USP

Neotropical Entomology 39(4):678-679 (2010)

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 *S. palinacanthum* and S. *paniculatum* fruits. Insects were kept at controlled conditions (25 ± 1ºC, 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.

Acknowledgments

Thanks are due to Daniel R Sosa-Gómez and Beatriz S Corrêa-Ferreira for revising an early draft of this note. We also thank Volmir M Goulart for help in collecting stink bugs in Cruz Alta, RS. This note was approved for publication by the Editorial Board of Embrapa Soja as manuscript number 04/2010.

References

Baldin E L L, Fujihara R T, Boiça Jr A L, De Almeida M C (2010) Parasitismo de percevejos-praga do maracujazeiro no Brasil por *Hexacladia smithii* Ashmead (Hymenoptera: Encyrtidae). Neotrop Entomol 39: 306-307.

Corrêa-Ferreira B S, Nunes M C, Uguccioni L D (1998) Ocorrência do parasitóide *Hexacladia smithii* Ashmead em adultos de *Euschistus heros* (F.) no Brasil. An Soc Entomol Brasil 27: 495-498.

Costa Lima A (1930) Sobre insectos que vivem em maracujás (*Passiflora* spp.). Mem Inst Oswaldo Cruz 23: 159-162.

Costa Lima A (1940) Insetos do Brasil. Hemípteros. Rio de Janeiro, Escola Nacional de Agronomia Série Didática n. 3, v. 2, 351p.

Cuezzo F, Fidalgo P (1997) *Hexacladia smithii* Ashmead (Hymenoptera: Encyrtidae): a new record for Argentina and two new pentatomid hosts recorded, *Antiteuchus variolosus* Westwood and *Edessa meditabunda* F. (Hemiptera: Pentatomidae). Entomologist 116:11-14

Froeschner R C (1988). Family Pentatomidae Leach, 1815. The stink bugs, p. 544-597. In Henry T J, Froeschner R C (eds) Catalog of the Heteroptera, or true bugs, of Canada and the continental United States. New York, NY, E.J. Brill, 958p.

Gallo D, Nakano O, Silveira Neto S, Carvalho R P L, Baptista G C de, Berti Filho E, Parra J R P, Zucchi R A, Alves S B, Vendramim J D, Marchini L C, Lopes J R S, Omoto C (2002) Entomologia agrícola. Piracicaba, SP, Bibl Cien Agr Luiz de Queiroz, v 10, 920p.

Grazia J (1977) Revisão dos pentatomídeos citados no "Quarto Catálogo dos Insetos que Vivem nas Plantas do Brasil" (Hemiptera-Pentatomidae-Pentatomini). Dusenia 10: 161-174.

Noyes J S (2008) Universal Chalcidoidea Database. http://www.nhm.ac.uk/research-curation/projects/chalcidoids. Acessado em 16.V.2008.

Panizzi A R, McPherson, J E, James D G, Javahery M, McPherson R M (2000) Economic importance of stink bugs (Pentatomidae), p.421-474. In Schaefer C W, Panizzi A R (eds) Heteroptera of economic importance. Boca Raton, CRC Press, 828p.

Panizzi A R, Slansky Jr F (1985) Review of phytophagous pentatomids (Hemiptera: Pentatomidae) associated with soybean in the Americas. Fla Entomol 68: 184-214.

Rizzo H F (1976). Hemípteros de interés agrícola. Buenos Aires, Editorial Hemisferio Sur, 69p.

Silva A G D'A, Gonçalves C R, Galvão D M, Gonçalves A J L, Gomes J, Silva M N, Simoni L (1968) Quarto catálogo dos insetos que vivem nas plantas do Brasil - seus parasitas e predadores. Rio de Janeiro, Min Agric, Parte II, vol I, 622p.

Received 24/II/10. Accepted 12/III/10.