

## SCIENTIFIC NOTE

**NEW HOST RECORD FOR *UROSIGALPHUS MIMOSESTES* GIBSON AND FIRST RECORD OF *U. NEOMEXICANUS* CRAWFORD (HYMENOPTERA: BRACONIDAE) IN MÉXICO<sup>1</sup>**

Victor López-Martínez,<sup>2</sup> J. I. Figueroa-De la Rosa,<sup>3</sup> J. Romero N.,<sup>3</sup>  
J. A. Sánchez G.,<sup>4</sup> and S. Anaya R.<sup>3</sup>

Hymenopterous wasps are the principal parasitoids of bruchids, principally species of Braconidae, Encyrtidae, Eulophidae, Eupelmidae, Eurytomidae and Pteromalidae. From the braconid wasps, the genus *Glyptocolastes* Ashmead, *Heterospilus* Haliday, *Stenocorse* Marsh and *Urosigalphus* Ashmead have a wide range of bruchids as a natural host (Center and Johnson, 1976; Hetz and Johnson, 1988; Marsh 1979, 1997; Steffan 1981). High number of hosts reported for the hymenopterous is given principally for its "host specificity to a particular environment, not a particular beetle" (Hetz and Johnson, 1988).

Systematic and biological hosts associations of *Urosigalphus* species has been published for Gibson (1972a, 1972b, 1982; Hetz and Johnson, 1988), they stated that 19 species are distributed in Mexico. *Urosigalphus* belongs to the tribe Brachistini of subfamily Helconinae, and can be characterized as egg-larval parasitoid (Sharkey, 1996), which is reported in a undetermined species of *Vrosigalphus* from Costa Rica (Traveset, 1991). According to Romero (2002), in his work about Mexican bruchids, 59 specimens of hymenopterous wasps that were reared from bruchids infesting Fabaceae pods and Convolvulaceae seeds, all belongs to the braconid genus *Urosigalphus*.

In the present work new distribution record and host associations data for *Urosigalphus (Bruchiurosigalphus) mimosestes* Gibson are given; besides new distribution records of *U. (Microurosigalphus) neomexicanus* Crawford for the country. The records presented here are based on material principally deposited in the Colección de Insectos del Centro de Entomología y Acarología, Montecillo (CEAM); and some material borrowed from Texas A&M University, College Station (TAMU) entomological collection.

<sup>1</sup> Received on July 11, 2002. Accepted on July 19, 2004.

<sup>2</sup> Facultad de Ciencias Agropecuarias, Universidad Autónoma del Estado de Morelos, Avenida Universidad 1001, Colonia Chamilpa, Cuernavaca, Morelos, C. P. 62210, México. E-mail: vilomar74@yahoo.com.mx.

<sup>3</sup> Taxonomía de Insectos, Instituto de Fitosanidad, Colegio de Postgraduados, km 36.5 carr. México-Texcoco, Montecillo, Edo. de México, C. P. 56230, México. E-mail: fisaac@colpos.mx.

<sup>4</sup> Unidad de Control Biológico, CIIDIR-IPN-Unidad Oaxaca, Hornos 1003, Santa Cruz Xoxocotlán, Oaxaca, C. P. 71230, México. E-mail: asanchez@colpos.mx.

## Subfamily Helconinae

*Urosigalphus (Bruchiurosigalphus) mimosestes*

The hypothesis of the host specificity to a particular environment of Hetz and Johnson (1988) can be partially corroborated with this work. *Urosigalphus mimosestes* has the capacity of attacking at least five species of bruchids associated to four host plants (Table 1), and probably have a wider host range.

This species has been reported from the Mexican states of Distrito Federal and Morelos (Gibson, 1972b; Figueroa and Romero, 2002), but now are reported from six Mexican states (Durango, Guanajuato, Hidalgo, Morelos, Nayarit, and Puebla) expanding the distribution of the species across the country.

Host plant	Bruchid host	Country	Reference
Not reported	<i>Mimosestes nubigens</i> (Motschulsky)	Honduras	Gibson (1972b)
<i>Lonchocarpus rugosus</i>	<i>Ctenocolum janzeni</i> Kingsolver	México	Figueroa and Romero (2002)
<i>Acacia farnesiana</i> , <i>A. schaffneri</i>	<i>M. nubigens</i>	México	New host plants records
<i>Ipomoea simulans</i>	<i>Megacerus callirhipis</i> (Sharp)	México	New host record
<i>Prosopis juliflora</i>	<i>Algarobius johnsoni</i> Kingsolver, <i>Mimosestes amicus</i> (Horn)	México	New host record

Table 1. Host records and distribution of *Urosigalphus (B.) mimosestes* in Mexico.

**Material Examined:** MÉXICO. DURANGO: 1 ♀, Vicente Guerrero, San Francisco Javier, 21-XII-1995, col. J. Romero N., reared seed *Prosopis juliflora*, parasitoide del brúquido *Algarobius johnsoni* Kingsolver. GUANAJUATO: 1 ♂, Irapuato, El Copal, 18-VIII-1994, Salas A. D., reared seed *Prosopis* sp., parasitoide del brúquido *Algarobius johnsoni* Kingsolver; 1 ♀ and 1 ♂, same data but 21-VII-1994, Salas A. D.; 3 ♀ and 3 ♂, same data but 22-VIII-1994; 2 ♀ and 2 ♂, same data but 17-IX-1994, Arévalo A.; 4 ♀ and 1 ♂, km 3 carr. San José Iturbide-Victoria, 2-VIII-1996, col. J. Romero N., *Acacia schaffneri* (S. Watson) F. J. Herm, parasitoide del brúquido *Mimosestes nubigens* (Motschulsky); 1 ♀ and 1 ♂, San Luis de la Paz, 11-IV-1996, José A. Sánchez G; 1 ♀, Yiuistis, 10-XII-1995, José A. Sánchez G. HIDALGO: 4 ♀ and 7 ♂, 3 mill. N Las Trancas, Parque Nacional Los Mármolos, 20-VII-1999, 6250 msnm, col. J. Romero N., reared seed JRN#240/99 *Acacia farnesiana* (L.), parasitoide del brúquido *Mimosestes nubigens* (Motschulsky); 3 ♀ and 4 ♂, Zindejeb, Tasquillo, 20-VII-1999, 1830 msnm, col. J. Romero N., reared seed JRN#239/799 *Prosopis juliflora*, parasitoide del brúquido *Mimosestes amicus* (Horn), 20° 33' 04" N 99° 17' 44" W. MORELOS: 1 ♀, Tlalquitenango, La Mezquitera, 2-II-1997, 903 msnm, col. J. Romero N., reared seed JRN#201/97 *Prosopis juliflora*, parasitoide del brúquido *Algarobius johnsoni* Kingsolver. NAYARIT: 1 ♂, 15 mi. SE Tepic, 2-III-1973, ca. 4000, C. D. Johnson collector, reared seed CDJ#303/73 *Ipomoea simulans*, emerged by 25-IX-1973, parasitoide del brúquido *Megacerus callirhipis* (Sharp). PUEBLA: 1 ♀, 6 km SW Acatepec, 17-VII-1996, 1900 msnm, Jesús Romero N.

*Urosigalphus (Microurosigalphus) neomexicanus* Crawford

At this time, no biological data has been published of this species, but this reports an increasing number of *Urosigalphus* in México (19 to 20). This records are based upon 17 specimens examined, extending the distribution of the braconid to the Mexican states of Guerrero, Oaxaca and Puebla. Oaxaca represents its southernmost record.

This species was originally described from New Mexico, USA (Crawford, 1914). These have since been recorded from Arizona, Colorado, Illinois, Iowa, Kansas, Missouri, and Texas (Martin, 1956; Gibson, 1972a; Whitfield and Lewis, 2001). Future additional collections will help determine host and plant relations.

**Material Examined:** MÉXICO. GUERRERO: 1 ♂, 15 mi. W. Chichihualco, 15-VII-1984, Elev. Aprox. 1500', J. B. Woolley; 1 ♂, 5.4 mi. Southwest La Laguna, 14-VII-1985, Jones & Schaffner; 1 ♀ and 12 ♂ 6.2 mi SW Xochipala, 8-VII-1982, 5670 ft, R. Wharton. OAXACA: 1 ♂, 3 mi. se. Matatlan (Microondas road), 17-VII-1987, elev. 6650 ft., Kovarik & Schaffner. PUEBLA: 1 ♀, 6 km SW Acatépec, 17-VII-1996, 1900 m, Jesús Romero N.

### ACKNOWLEDGMENTS

We thank Robert A. Wharton for the loan of TAMU specimens. Rick L. Westcott and C. D. Johnson for their comments to a first draft of the manuscript. Comments of two anonymous reviewers and the editor improved the manuscript. This work was supported by one SNI-CONACYT grant to the first author.

### LITERATURE CITED

- Center, T. D. and C. D. Johnson.** 1976. Host plants and parasites of some Arizona seed-feeding insects. *Annals of the Entomological Society of America* 69(2): 195-201.
- Crawford, J. C.** 1914. A revision of the braconid genus *Urosigalphus* (Hymenoptera, Braconidae). *Insecutor Inscitiae Menstruus* 2: 22-27.
- Figueroa-De la Rosa, J. I. and J. Romero N.** 2002. *Ctenocolum janzeni* Kingsolver & Whitehead (Coleoptera: Bruchidae) nuevo huésped para *Urosigalphus (bruchiurosigalphus) mimosestes* Gibson (Hymenoptera: Braconidae) en la Reserva de la Biosfera Sierra de Huautla, Morelos, México. *Acta Zoologica Mexicana* (n. s.) 85: 189-190.
- Gibson, L. P.** 1972a. Revision of the genus *Urosigalphus* of the United States and Canada (Hymenoptera: Braconidae). *Miscellaneous Publications of the Entomological Society of America* 8: 83-134.
- Gibson, L. P.** 1972b. *Urosigalphus* of Mexico and Central America (Hymenoptera: Braconidae). *Miscellaneous Publications of the Entomological Society of America* 8: 135-157.
- Gibson, L. P.** 1982. New species of *Urosigalphus* (Hymenoptera: Braconidae) from Mexico. *Proceedings of the Entomological Society of Washington* 84(1): 97-101.
- Hetz, M. and C. D. Johnson.** 1988. Hymenopterous parasites of some bruchid beetles of North and Central America. *Journal of Stored Products Research* 24(3): 131-143.
- Marsh, P. M.** 1979. Family Braconidae. Pp. 144-295. *In*, Krombein K. V., P. D. Hurd Jr., D. R. Smith, and B. D. Burks (Editors). 1979. *Catalog of Hymenoptera in America north of Mexico*. Smithsonian Institution Press. Washington, D. C., United States of America. 1198 pp.
- Marsh, P. M.** 1997. Subfamily Doryctinae, pp. 206-233. *In*, R. A. Wharton, P. M. Marsh and M. J. Sharkey (Editors). *Manual of the New World Genera of the Family Braconidae* (Hymenoptera). Special Publication of the International Society of Hymenopterologist No. 1. Washington, D.C. United States of America. 439 pp.
- Martin, J. C.** 1956. A taxonomic revision of the triaspidine braconid wasps of Nearctic America (Hymenoptera). *Canadian Department of Agriculture Publication* 965: 1-157.
- Romero N. J.** 2002. Bruchidae. pp. 513-534. *In*, Llorente B., J. and J. J. Morrone (Editors). *Biodiversidad, taxonomía y biogeografía de artrópodos de México: hacia una síntesis de su conocimiento*. Vol. III. Universidad Nacional Autónoma de México. Distrito Federal, México.
- Steffan, J. R.** 1981. The parasites of bruchids. pp. 223-229. *In*, Labeyrie V. (Editor). *The Ecology of Bruchids attacking legumes (Pulses)*. Series Entomologica vol. 19. W. Junk. The Hague, The Netherlands. 252 pp.
- Traveset, A.** 1991. Pre-dispersal seed predation in Central American *Acacia farnesiana*: factors affecting the abundance of co-occurring bruchid beetles. *Oecologia* 87: 570-576.
- Whitfield, J. A. and C. N. Lewis.** 2001. Analytical survey of the braconid wasp fauna (Hymenoptera: Braconidae) on six midwestern U.S. tallgrass prairies. *Annals of the Entomological Society of America* 94(2): 230-238.