

GENNARO VIGGIANI

Department of Agricultural Entomology and
Zoology, University of Naples «Federico II»,
Portici, Italy.

GREGORY A. EVANS

Entomology and Nematology Department,
University of Florida, Gainesville, Florida,
USA

Descriptions of three new species of *Amitus* Haldeman
(Hymenoptera: Platygasteridae), parasitoids of known
whiteflies from the New World

The genus *Amitus* includes 14 species, mostly reared from whiteflies (MACGOWN & NEBEKER, 1978; VIGGIANI & MAZZONE, 1982; VIGGIANI, 1991). Seven species have been described from the New World; in addition, *A. hesperidum* Silvestri was introduced into Mexico and the United States for the biological control of the citrus blackfly, *Aleurocanthus woglumi* Ashby (CLAUSEN & BERRY, 1932; FLANDERS, 1969). Two of the three species described herein were discovered as the result of an extensive survey of the parasitoids of *Bemisia tabaci* (Gennadius) and related whiteflies conducted throughout Florida, the Caribbean and Latin America from 1987 to 1992.

Type material will be deposited at the United States National Museum, Washington, DC. Some paratypes will be preserved in the collection of the Department of Agricultural Entomology and Zoology, University of Naples «Federico II», Portici, Italy and the Natural History Museum, London, England. Readers are referred to MASNER & HUGGERT (1989) for morphological terminology.

Amitus bennetti sp. nov.

Female. Length: 0.5-0.6 mm., body black; antennae piccous; legs dark with lighter tarsi, except last tarsomere; wings hyaline, faintly infuscate at base.

Head (Fig. I, 1) transverse, twice as wide as long, eye height 3 times as long as malar space, vertex rather rounded, finely reticulate; post-ocellar distance: 16; ocell-ocular distance: 4. Antenna (Fig. II, 1) inserted at level of lower eye margin; scape narrow, 5 times as long as wide, pedicel longer than F1 (16:11), F2 two times as long as wide; subsequent segments from F2 to F5 gradually becoming shorter and wider, with F4 and F5 rather cup-shaped,

the latter slightly longer than wide; setae on the funicular segments shorter or as long as their width; club well defined, about 2.5 times as long as wide; setation dense and short. Funicular segments, except F2, with 1 to 2 distal trichoid sensilla; club segments, from base with 1, 2, and 1 basiconic sensilla on the ventral surface, respectively.

Thorax (Fig. I, 1) as long as gaster, rather flat, with fine reticulation, except on the distal half of mid lobe of the mesoscutum; internotaular distance at the posterior margin of mesoscutum about 2 times as long as width of notaulus; scutellum with about 15 very small and triangular crenulae (Fig. I, 2). Metanotum very short, laterally setose. Fore wing rather narrow, at least 3 times as long as wide, with longest setae of the fringe one-third the width of the discal blade or slightly longer.

Gaster as long as wide; T1 with 4-5 longitudinal carinae, central and lateral region with dense setae; T2 longer than the subsequent tergites combined (5:3), longitudinal reticulations extending distally from the anterior margin to the middle of T2.

Male. Coloration and most of the characters similar to that of female. Antenna (Fig. II, 2) with F1 longer than pedicel (14:12), F2 twice as long as F1 and with male-sex gland not extended up to near its distal margin (Fig. II, 3); subsequent segments subcylindrical, gradually becoming shorter and wider; club or last segment, conical, twice as long as wide. Genitalia as in Fig. II, 4; 0.15 mm in length, with three hooklets on each digitus.

Material examined. Holotype, 1 female, on slide, Puerto Rico, Loiza, 21.v.1990, reared from *Bemisia tabaci* (Gennadius) on *Euphorbia heterophylla*, coll. F. D. Bennett. Paratypes: 27 females and 2 males, same data as the holotype.

Comments. The new species *A. bennetti* is similar to *A. spiniferus* (Brethes), but can be distinguished by its shorter antennal club and very minute scutellar crenulae. The species is named after its collector, Dr. Fred D. Bennett.

Biological Notes. *A. bennetti* was reared and released in Florida against the sweetpotato whitefly, *Bemisia tabaci*. The platygasterid exhibits thelytokous parthenogenesis (males are rare). *A. bennetti* oviposits only in very young host stages (first and second nymphs) (BENNETT & NGUYEN, 1992) as do other species in this genus.

Amitus aleuroglanduli sp. nov.

Female. Length: 0.8 mm., coloration and most of the morphological characters very similar to *A. bennetti*, but antenna longer (Fig. II, 5) with scape, F1, F5 and club, 5, 3, 1.2 and 2.5 times as long as wide, respectively; scutellum with about 20 to 25 very small and triangular crenulae (Fig. I, 3); fore wing

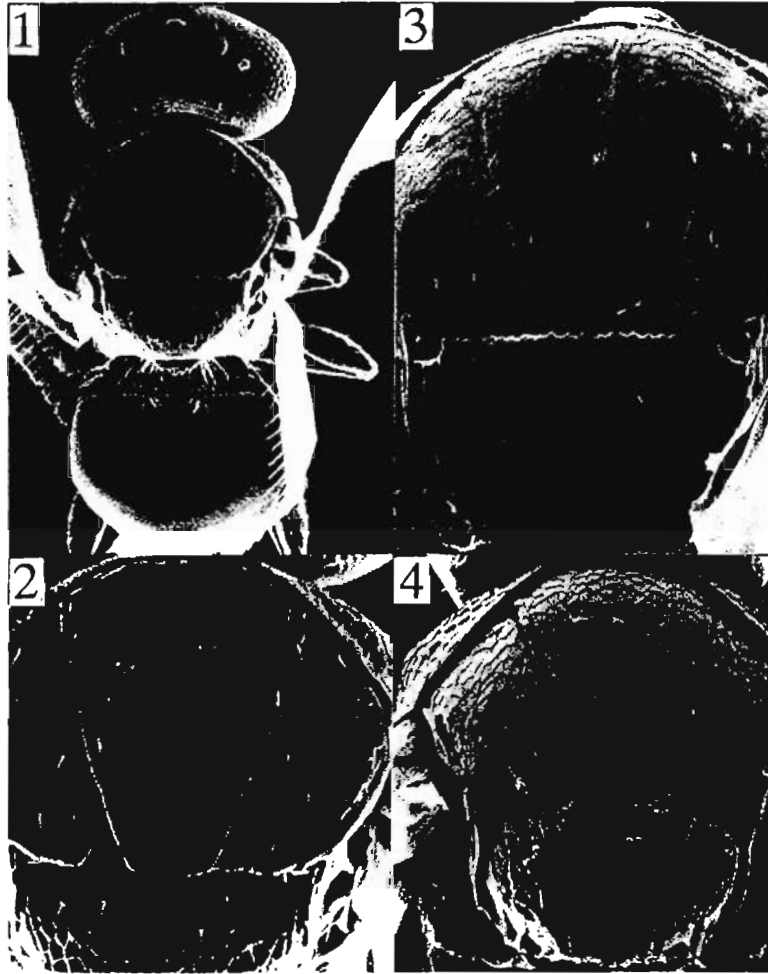


Fig. 1 - *Amitus bennetti* sp. nov. - Female. 1. Body from above. 2. Particular of mesoscutum and scutellum. *Amitus aleuroglanduli* sp. nov. - Female. 3. Mesoscutum and scutellum from above. *Amitus sculpturatus* sp. nov. - Female. 4. Mesoscutum and scutellum from above.

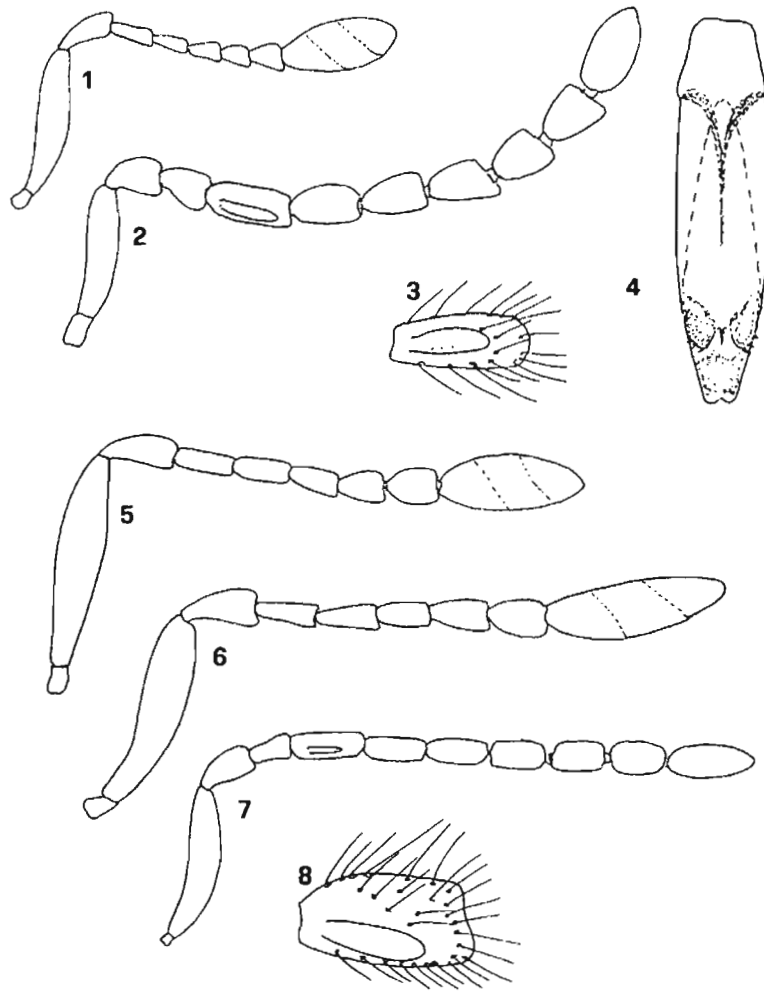


Fig. II - *Amitus bennetti* sp. nov. - Female. 1. Antenna. - Male. 2. Antenna. 3. Particular of the second flagellar segment. 4. Genitalia. *Amitus aleuroglanduli* sp. nov. - Female. 5. Antenna. *Amitus sculpturatus* sp. nov. - Female. 6. Antenna. - Male. 7. Antenna. 8. Particular of the second flagellar segment.

broader, 2.6 times as long as wide, with longest marginal setae as long as one-fifth the discal width. Internotaular distance 2 times the width of notaulus.

Male. Unknown.

Material examined. Holotype, 1 female, on slide, Puerto Rico, Isabela, 23.vi.1990, reared from *Aleuroglandulus malangae* Russell on *Xanthosoma* sp., coll. F. D. Bennett. Paratypes: 3 females, same data as the holotype.

Amitus sculpturatus sp. nov.

Female. Length: 0.6 - 0.7 mm., body black; antennae piceous from scape to F3; legs black, with tibiae and tarsi (except last tarsomere and hind tarsi), piceous to yellowish.

Head about twice as wide as long; vertex acute, with rather deep reticulate sculpture; post-ocellar distance: 3; ocell-ocular distance: 1. Antenna (Fig. II, 6) with scape 5 times as long as wide; pedicel longer than F1 (19:16); the latter 2.5 times as long as wide; F2 slightly shorter and wider than F1; subsequent segments gradually shorter and wider; F5 rather cup-shaped, slightly longer than wide (10:8); club 3 times as long as wide and as long as three preceding funicular segments.

Thorax as long as gaster; mid lobe of mesoscutum and scutellum completely reticulate (Fig. I, 4); the latter with 15-16 strong, well-separated crenulae, some forked; internotaular distance at posterior margin of mesoscutum subequal to width of notaulus. Fore wing 3 times as long as wide; longest marginal cilia of fringe one-fifth the width of discal blade. Legs and gaster similar to *A. bennetti*, but with fewer setae on T1, and stronger reticulation on T2 extending to the distal two-thirds of the segment.

Male. Coloration similar to that of female, but flagellum rather uniformly piceous or dark yellow. Antenna (Fig. II, 7) with F2 slightly longer than twice its width, other characters as in Fig. II, 8; subsequent segments gradually becoming shorter and wider; club conical, about 2.5 times as long as wide. Genitalia length 0.15 mm., similar in shape to that of *A. bennetti*.

Material examined. Holotype, female, on slide, USA, Maryland, Prince Georges County, College Park, University of Maryland campus, 6.vi.92, reared from *Tetraleurodes mori* (Quaintance) on *Ilex* sp., coll. G. A. Evans. Paratypes: 4 females and 3 males, same data as the holotype.

Comments. The new species is rather similar to *A. aleuroglanduli*, but can be distinguished by its longer antennal club, completely sculptured mid lobe region of the mesoscutum and larger and triangular-shaped (some forked) scutellar crenulae.

Acknowledgments. We thank Dr. Fred D. Bennett of the University of Florida, Gainesville, Florida for the discovery of two of the three species described herein.

SUMMARY

Two new species of the genus *Amitus* Haldeman (Hymenoptera: Platygasteridae) are described from Puerto Rico, *A. bennetti* and *A. aleuroglanduli* parasitoids of *Bemisia tabaci* (Gennadius) and *Aleuroglandulus malangae* Russell, respectively. Another new species, *A. sculpturatus*, is described from specimens reared from *Tetraleurodes mori* (Quaintance) collected in Maryland (USA).

RIASSUNTO

Due nuove specie del genere *Amitus* Haldeman (Hymenoptera: Platygasteridae), *A. bennetti* and *A. aleuroglanduli*, parassitoidi rispettivamente di *Bemisia tabaci* (Gennadius) e *Aleuroglandulus malangae* Russell, sono state descritte per Porto Rico. Un'altra nuova specie, *A. sculpturatus*, è descritta su esemplari ottenuti da *Tetraleurodes mori* (Quaintance) raccolto in Maryland (USA).

REFERENCES

- BENNETT, F. D. & R. NGUYEN - 1992 - Introduction and establishment in Florida of *Amitus* n. sp. (Hym.: Platygasteridae) a Puerto Rican parasite of *Bemisia tabaci*. - Paper presented to the 1992 Annual Meeting of the Southeastern Branch Meeting of the Entomological Society of America.
- CLAUSEN, C. P. & P. A. BERRY - 1932 - The citrus blackfly in Asia and the importation of its natural enemies into tropical America. - U. S. Depart. Agric. Tech. Bull. 320: 58 pp.
- FLANDERS, S. E. - 1969 - Herbert D. Smith's observations on citrus blackfly parasites in India and Mexico and the correlated circumstances. - Canad. Entomol. 101: 467-480.
- MACGOWN, M. W. & T. E. NEBEKER - 1978 - Taxonomic review of *Amitus* (Hymenoptera: Platygasteridae) of the Western Hemisphere. - Canad. Entomol. 110: 275-283.
- MASNER, L. & L. HUGGERT - 1989 - World review and keys to genera of the subfamily Inostemmatinae with reassignment of the taxa to the Platygasterinae and Sceliotrachelinae. - Mem. ent. Soc. Can., 147:3-214.
- VIGGIANI, G. - 1991 - Ridescrizione di *Amitus fuscipennis* MacGown and Nebeker (Hym. Platygasteridae), parassitoide esotico di *Tetraleurodes vaporariorum* (Westw.), con notizie preliminari sulla sua introduzione in Italia. - Redia 74 (1): 177-183.
- VIGGIANI, G. & P. MAZZONE - 1982 - *Amitus* Hald. (Hym. Platygasteridae) of Italy, with descriptions of three new species. - Boll. Lab. Ent. agr. Filippo Silvestri 39: 55-69.