

TWO NEW SPECIES OF *ATRACTOTOMUS* FROM SOUTHERN MEXICO (HEMiptERA: MIRIDAE: PHYLIINAE)

GARY M. STONEDAHL AND MICHAEL D. SCHWARTZ

International Institute of Entomology, % The Natural History Museum,
Cromwell Road, South Kensington, London, SW7 5BD U.K., and
Biological Resources Division, Centre for Land and
Biological Resources Research,
Agriculture Canada, Ottawa, Ontario K1A 0C6, Canada

Abstract.—Two new species, *Atractotomus bicolor* and *A. teopisca*, are described from the state of Chiapas in southern Mexico. The male genitalic structures of both species are illustrated, and scanning electron micrographs are provided for the dorsal vestiture, femoral spines and pretarsus of *A. teopisca*. The relationship of these species to other New World members of the genus is discussed.

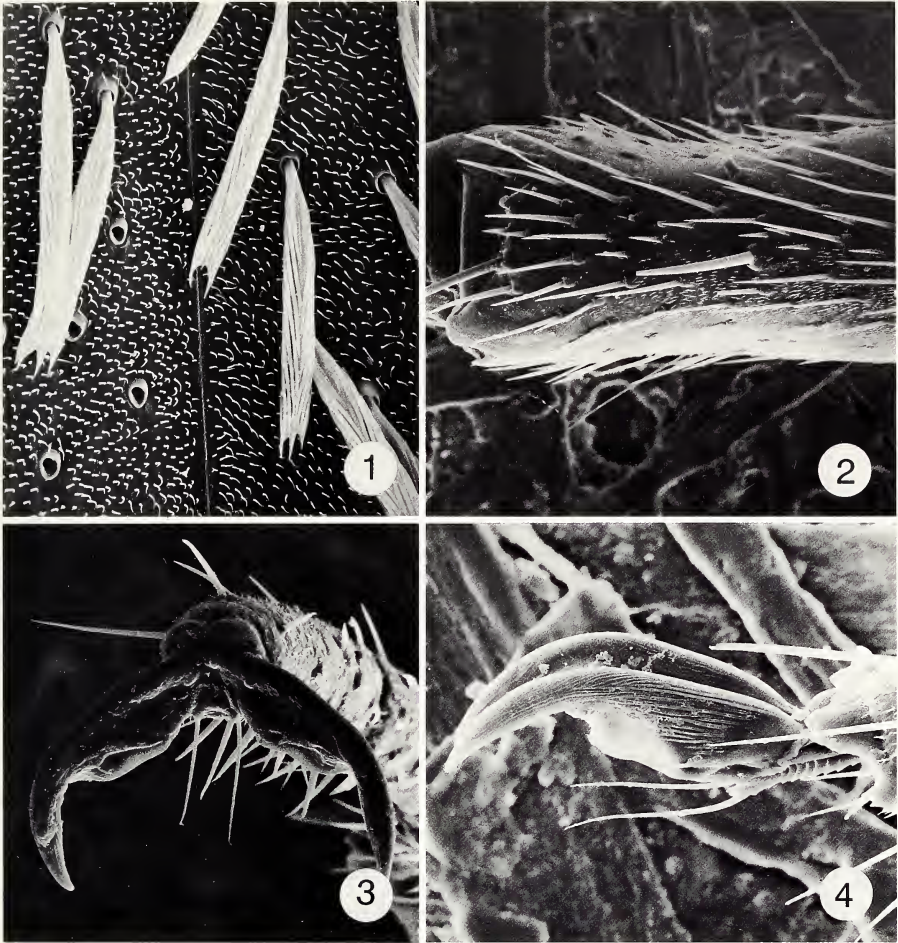
The genus *Atractotomus* contains 37 species distributed in the Holarctic region from Scandinavia to the Mediterranean, and east to Korea in the Palearctic (6 spp.), and from central Canada to southern Mexico in the Nearctic (31 spp.—see Stonedahl, 1990). Two additional undescribed species of this genus were recently discovered in the holdings of the Canadian National Collection, Ottawa and are here described and compared to other Nearctic species. This brings the total number of species known from Mexico to 21.

Atractotomus teopisca, new species

Figs. 1-6

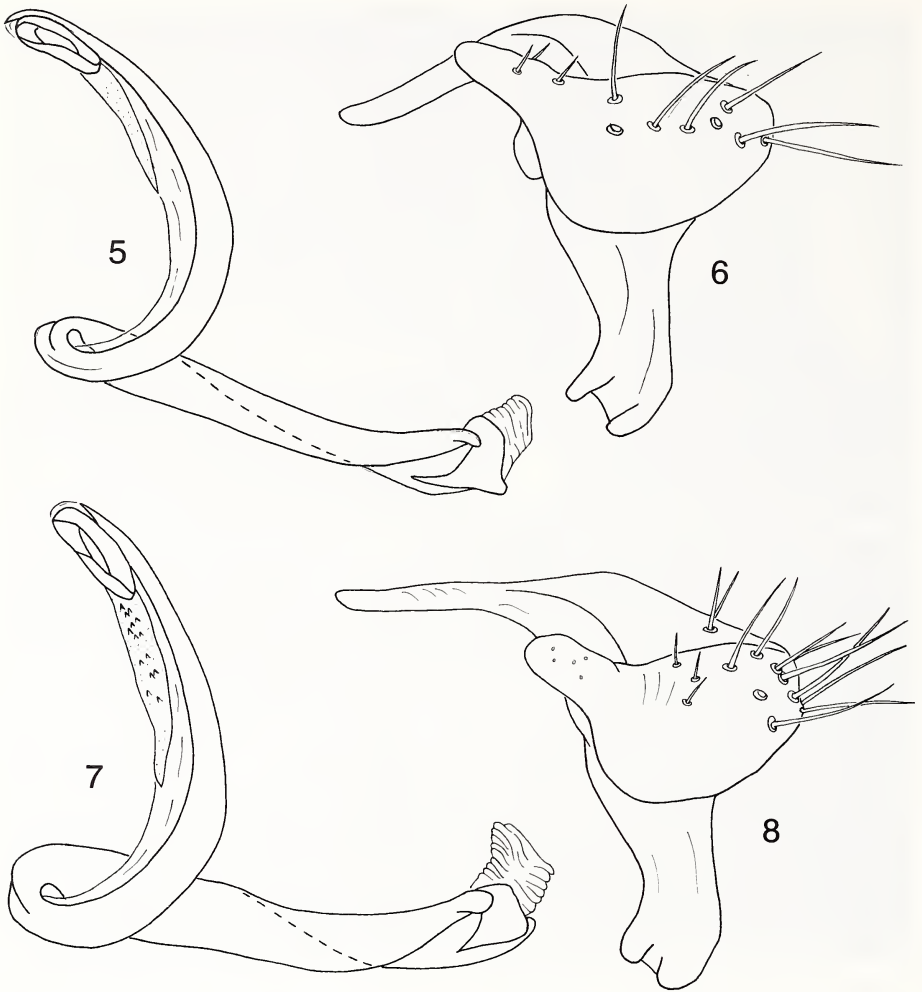
Diagnosis. This species keys to *A. oaxaca* Stonedahl in Stonedahl (1990), but is distinguished by the narrower scalelike setae (Fig. 1; cf. Stonedahl, 1990:67, fig. 69), restricted on the dorsum to the scutellum and hemelytra, and very sparsely distributed on the lateral and ventral aspects of the body; the anterior half of the pronotum paler than the posterior half; the corium and clavus bordering claval suture, and margins of cuneus narrowly pale; and especially by the elongate posterior process of the left paramere (Fig. 6) and gonopore sclerite of vesica without spines (Fig. 5).

Description. Male. Length from apex of tylus to cuneal fracture 2.19-2.39. *Dorsal aspect:* Dark brown general coloration with limited yellowish brown markings; vestiture with dark, suberect, simple setae and recumbent, silvery white, scalelike setae (Fig. 1), the latter restricted to the scutellum and hemelytra, and most densely distributed either side of the claval suture and on the paracuneus. *Head:* Pale ventrally; tylus, jugum and lorum anterior to antennal fossae shiny fuscous; darker specimens with frons and vertex uniformly brown to dark brown; paler specimens with frons mostly yellowish brown and vertex dark brown; width across eyes 0.76-0.81; width of vertex 0.34-0.36; ratio of vertex width to head width 0.42:1-0.47:1; head weakly produced anterior to antennal fossae, tylus not or only just visible in dorsal view; posterior margin straight, angulate; vertex weakly depressed medially; eyes occupying



Figs. 1–4. Scanning electron micrographs of *Atractotomus teopisca*. 1. Scalelike setae on hemelytra. 2. Dorsodistal surface of metafemur. 3. Pretarsus, posterior view. 4. Pretarsus, lateral view.

most of head height in lateral view; antennae dark brown, basal half of segment II sometimes lighter brown, inserted slightly above level of ventral margin of eye; antennal segment II linear, length 0.84–0.93; ratio of length of antennal segment II to width of head across eyes 1.09:1–1.18:1; genae narrow; gula obsolete; labium reaching to apex of mesosternum or slightly beyond. *Thorax*: Posterior width of pronotum 1.05–1.11; pronotum distinctly bicolored in paler specimens, with anterior half pale brownish yellow and distal half dark brown to fuscous, sometimes also with posterior angles broadly pale; anterior half of pronotum dark yellowish brown or brown in darker specimens, but always slightly paler than posterior half; propleuron pale brownish yellow, infuscated dorsally in darker specimens, sometimes with only



Figs. 5-8. Male genitalia. Figs. 5, 6. *A. teopisca*. 5. Vesica. 6. Left paramere. Figs. 7, 8. *A. bicolor*. 7. Vesica. 8. Left paramere.

apex narrowly pale; prosternum pale; mesosternum mostly fuscous; scutellum uniformly dark brown to fuscous, sometimes yellowish brown in pale specimens; pretremal disc of metathoracic scent efferent system dirty white. *Hemelytra*: Dark brown to fuscous with corium and clavus bordering claval suture, posterior margin of corium bordering cuneal fracture, anterior and inner margins of cuneus, and sometimes outer margin of cuneus narrowly pale; sometimes more broadly pale bordering claval suture and on margins of cuneus, and with outer margin of corium, sometimes inward to radial vein, pale brownish yellow. *Legs*: Coxae pale brownish yellow; femora brownish yellow with faint brown or reddish brown blotches, especially dorsally; hind femora usually more extensively darkened, especially distally, and with dark blotches more strongly developed; tibiae yellowish brown, hind pair darker distally; tibial

spines black, points of insertion on tibiae narrowly ringed with fuscous; tarsi brown or dark yellowish brown; pretarsus fuscous. *Genitalia*: Left paramere with long, narrow anterior process (Fig. 6); gonopore sclerite of vesica without spines (Fig. 5). *Female*. Length from apex of tylus to cuneal fracture 2.15–2.37; similar to male in color and structure, except second antennal segment narrower and sometimes yellowish brown on basal half to two-thirds, scutellum sometimes yellowish brown, hemelytra tending to be more extensively pale, and hemelytral membrane shorter. *Etymology*. Named for the type locality in Chiapas, Mexico.

Distribution. Chiapas, Mexico.

Discussion. Although *A. teopisca* keys to *A. oaxaca* in Stonedahl (1990), this species is more closely related to *A. prosopidis* (Knight) based on a reanalysis of character information presented in Stonedahl (1990: see tables 1 and 2). The reanalysis was executed on Hennig86 (using m* and bb* options, and the same character additivities and outgroup taxa) as follows: (1) the two new species were added to the character matrix (characters 0 to 26) with codings *A. teopisca* = 010101000111100000-0100---1 and *A. bicolor* = 010101000111100000101010001; (2) in the original analysis character 26 (development of the gonopore wall with 3 character states (0) thick, heavily sclerotized; (1) thinner, moderately sclerotized; and (2) very thin, weakly sclerotized) was incorrectly coded and was changed in the reanalysis to *A. acaciae* (0), *A. nicholi* (0), *A. oaxaca* (0), *A. prosopidis* (1), and *A. russatus* (0). This procedure resulted in 304 equally parsimonious cladograms each with length of 112, consistency index of 0.29, and retention index of 0.75. The strict consensus cladogram of the 304 cladograms maintained the *magnicornis* and *miniatus* species groups as well as node 56 of figure 185 of Stonedahl (1990); the remaining species were unresolved at node 71. We attempted to increase the resolution of the analysis by reducing some of the missing data in table 2 as follows: character 7 for *A. mitla* (state 1) and *A. nicholi* (1); character 13 for *A. prosopidis* (1); characters 14–17 for *A. albidocoxis* (0000) and *A. schwartzi* (0000); and character 18 for *A. atricolor* (0), *A. chiapas* (1), *A. rubidus* (0), and *A. teopisca* (1). Species with missing data for characters 5–7 and 23–25 were not recoded. The results yielded two cladograms (length 112, ci = 29, and ri = 76) with the identical topology as reported in Stonedahl (1990) and with the two new species, *A. bicolor* and *A. teopisca*, taken together as sister taxa to *A. prosopidis* and all three species forming the sister clade to the *miniatus* species group. Only the highly homoplasious character, labial length (character 12, ci = 14, ri = 40), supports the clade containing *A. prosopidis* and the two new species. Weakly converging surface ridges of the scalelike setae (character 6) and the length of antennal segment II greater than the width of the head across the eyes in males (character 13) support the close relationship of *A. bicolor* and *A. teopisca*. Further characters indicating a relationship between *A. teopisca*, *A. bicolor*, and *A. prosopidis* are as follows: antennal fossa located slightly above level of ventral margin of eye (character 10); posterior margin of head angulate (character 11); antennal segment II pale at least on basal half (character 18) [The color of the second antennal segment is variable in *A. teopisca*, tending to be dark more often than pale, but is consistently pale in the related species *A. bicolor*]; wall of secondary gonopore of male vesica thin (character 26); and except for *A. teopisca*, spines on gonopore sclerite fine (character 24).

Holotype. Male. MEXICO, Chiapas, Teopisca, 31.VII.69, L. A. Kelton, CNC Type No. 21923 (CNC).

Paratypes. MEXICO: Chiapas: 8 males, 10 females, same data as holotype (CNC);

12 males, 8 females, Comitan, 20.VII.69, ex *Acacia*, L. A. Kelton (AMNH, CNC, NHM); 7 males, 3 females, 14 mi W Comitan, 15.VII.69, L. A. Kelton (CNC); 2 females, 14 km NW Comitan, 5,500 ft, 15.VIII.67, H. R. Burke & J. Hafernik (TA&M); 2 females, Puerto Arista, 4.VIII.69, L. A. Kelton (CNC).

***Atractotomus bicolor*, new species**

Figs. 7-9

Diagnosis. This species is very similar to *A. teopisca*, but is readily distinguished by the smaller average size; lorum and jugum uniformly pale; second antennal segment pale basally, with distal fourth to third fuscous (Fig. 9); and by the structure of the male genitalia, especially the shorter anterior process of the left paramere (Fig. 8) and the vesica with longer, spinose gonopore sclerite (Fig. 7).

Description. Male. Length from apex of tylus to cuneal fracture 1.93-2.33. *Dorsal aspect:* General coloration and vestiture as described for *A. teopisca*. *Head:* Structure as described for *A. teopisca*; pale brownish yellow, slightly darker dorsally; vertex often infuscated; tylus shiny fuscous; width across eyes 0.72-0.82; width of vertex 0.29-0.34; ratio of vertex width to head width 0.38:1-0.44:1; antennal segment I shiny fuscous, narrowly pale at base and apex; segment II yellowish brown, apical fourth to third fuscous, length 0.69-0.89; ratio of length of antennal segment II to width of head across eyes 0.93:1-1.13:1; segments III and IV brown or dark brown; labium reaching to apex of mesosternum. *Thorax:* Posterior width of pronotum 0.88-1.08; pronotum always distinctly bicolored, anterior half pale brownish yellow, distal half dark brown to fuscous; propleuron mostly pale, dorsal margin infuscated, especially posteriorly; scutellum brown to dark brown, sometimes yellowish brown anteriorly in pale specimens. *Hemelytra:* Color pattern as described for *A. teopisca*, except usually broadly pale bordering claval suture. *Legs:* Color as described for *A. teopisca*. *Genitalia:* Similar to *A. teopisca* except left paramere with shorter anterior process (Fig. 8) and vesica with longer, spinose gonopore sclerite (Fig. 7).

Female. Length from apex of tylus to cuneal fracture 1.90-2.17; similar to male in color and structure, except sometimes more broadly pale dorsally especially on pronotum, scutellum, cuneus and along outer margin of corium; second antennal segment narrower; and hemelytral membrane shorter.

Etymology. Named for the distinctly bicolored pronotum.

Distribution. Chiapas, Mexico.

Discussion. This species keys to couplet 16 (*A. pallidus* and *A. prosopidis*) in Stonedahl (1990), based primarily on the mostly pale second antennal segment, but is easily separated from these species by the darker general coloration, with bicolored pronotum, and especially by the long, thin posterior process of the left paramere (Fig. 8).

The relationship of *A. bicolor* and *A. teopisca* to *A. prosopidis* is further supported by the occurrence of the two species on *Acacia*. *A. prosopidis* is found on the woody legume *Prosopis* throughout the American Southwest.

Holotype. Male. MEXICO, Chiapas, Puerto Arista, 4.VIII.69, L. A. Kelton, CNC Type No. 21924 (CNC).

Paratypes. MEXICO: Chiapas: 21 males, 7 females, same data as holotype (AMNH, CNC, NHM); 9 males, 15 females, Comitan, 20.VII.69, ex *Acacia*, L. A. Kelton (CNC); 5 males, 3 females, 31 mi SE Comitan, 18.VI.65, at light, Burke, Meyer &



Fig. 9. *Atractotomus bicolor*, dorsal habitus, male.

Schaffner (TA&M); 4 males, 3 females, 28 mi W Cintalapa, 25.VI.65, H. R. Burke, J. R. Meyer & J. C. Schaffner (TA&M).

ACKNOWLEDGMENTS

The Canadian National Collection, Ottawa (CNC) provided the bulk of the material on which this study was based. Specimens also were received from Dr. J. C. Schaffner, Texas A&M University, College Station (TA&M). Voucher specimens have been deposited in the collections of the American Museum of Natural History, New York (AMNH) and The Natural History

Museum, London (NHM). G. J. duHeaume, International Institute of Entomology, London prepared the habitus illustration of *A. bicolor*, and I. Boler, International Institute of Entomology, London assisted with the preparation of the scanning electron micrographs.

LITERATURE CITED

- Stonedahl, G. M. 1990. Revision and cladistic analysis of the Holarctic genus *Atractotomus* Fieber (Heteroptera: Miridae: Phylinae). Bull. Am. Mus. Nat. Hist. 198:1-88.

Received 2 May 1994; accepted 8 September 1994.