



## The Types of Click Beetles Described by Otto Schwarz from Mexico, Guatemala and Panama (Coleoptera: Elateridae)

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### Abstract

The type specimens of Elateridae described by Otto Schwarz from Mesoamerica are redescribed, reassessed and lectotypes designated. *Acanthathous championi* (Schwarz), *Smiliceroides quadrilineatus* (Schwarz), *Anoplischiopsis divisus* Schwarz, *Anoplischius dorsalis* Schwarz, *Atractosomus nigerrimus* Schwarz, and *Anchastomorphus minutus* Schwarz are retained in their current status. *Monocrepidius restinctus* Schwarz is reduced to synonymy under *Monocrepidius rugicollis* Champion. *Aeolus mediofasciatus* Schwarz is transferred to *Monocrepidius* Eschscholtz. *Tomicephalus bilineatus* Schwarz is transferred to *Anchastus* LeConte, renamed *Anchastus lapsus* Fuller, and reduced to synonymy under *Anchastus seminiger* Champion. *Crepidius blepharipes* Schwarz is restricted to the lectotype and retained in its current status; the other syntypes are unidentified species of *Dipropus* Germar. *Anchastus championi* Schwarz is reduced to synonymy under *Anchastus tenuistriatus* Champion; one syntype is an unidentified species of *Dipropus* Germar. New country records are documented for *A. dorsalis*, *A. nigerrimus* and *A. minutus* (Guatemala), and *A. tenuistriatus* (United States).

**Key words:** biodiversity, Mesoamerica

### Introduction

Otto C.E. Schwarz (1861–1908) had a prolific though short career in Elateridology. A teacher by profession, he began his studies of click beetles in 1890, and was regarded as a tireless worker (Horn 1909). Unfortunately, in 1902, at the age of 41, he suffered the first of a series of debilitating strokes that led to his death six years later. In his short career, Schwarz described over 800 species of Elateridae from all parts of the world, but only 11 of these were described from Mesoamerican (Mexico to Panama) specimens. Nine species were described from specimens collected in Mexico (Schwarz 1898, 1901a, b, 1902, 1903), and one each from specimens collected in Guatemala (Schwarz 1902) and Panama (Schwarz 1906). Except for catalogues (Schenkling 1925, 1927; Blackwelder 1944; Gaedike 1985), only one of these species has been mentioned in subsequent literature; Becker (1979) transferred *Athous championi* Schwarz to *Acanthathous* Champion without examining type specimens.

One additional species described by Schwarz has been questionably reported from Mesoamerica. *Chalcolepidius viriditarsus* Schwarz was described from “San Salvador” without specifying a country (Schwarz 1906). Blackwelder (1944) listed this species as “? El Salvador”. Casari (2002) suggested *C. viriditarsus* was a synonym of *Chalcolepidius fryi* Candèze, described from Peru. I examined one syntype of *C. viriditarsus* from Schwarz’s collection in 2019. In the key of Casari (2002), the syntype keyed without difficulty to *C. fryi*, and differed only in trivial details from her description of *C. fryi*. I consider *C. viriditarsus* to be a South American species, and in the absence of Mesoamerican specimens, do not treat it further.

The last comprehensive treatment of Elateridae of Mesoamerica is that of Champion (1894–1897) as part of the *Biologia Centrali-Americana*. Schwarz’s species were described after the publication of Champion’s work, and definitive identification of most Mesoamerican species still require reference to type specimens. Through the courtesy of Dr. Stephan Blank and Mandy Schröter of the Senckenberg Deutsches Entomologisches Institut (SDEI), I borrowed the type specimens of the species described by Schwarz from Mesoamerica. As part of my studies on

the elaterid biodiversity of Guatemala (Fuller 2012, 2021), I am redescribing and illustrating the types of Schwarz's species to contribute to a better understanding of their identity and distribution.

## Methods

Genitalia were dissected and cleared using the methods of Becker (1956). After clearing, female genitalia were immersed in a solution of glycerine and ethanol, and the ethanol allowed to evaporate; this kept the bursa inflated for storage in glycerine. Dissected genitalia are stored in glycerine in microvials attached to the specimen. Illustrations were made from tracings of digital photographs. For photography, genitalia preparations were immersed in clear Purell® gel hand sanitizer (as per Otto 2012). Habitus photographs were compiled using Picolay ([www.picolay.de](http://www.picolay.de)). Non-type specimens examined are deposited in the Universidad del Valle de Guatemala, Guatemala City (UVGC, per J.C. Schuster, J. Yoshimoto), and in the author's collection (ERFC). Additional type specimens examined are deposited in the Natural History Museum, London (NHML, per M. Barkley, M. Geiser). Label data are presented verbatim, with individual labels separated by a double backslash (//). Body length is measured in dorsal aspect from the anterior margin of the head to the apex of the elytra. Body width is measured across the elytral humeri. Midlength of a structure is the length along the longitudinal axis of the body half way between the lateral margins at the midwidth. Midwidth of a structure is the length along the transverse axis of the body half way between the anterior and posterior margins at the midlength. Subfamilial and tribal classification of Elateridae is unstable and disputed. The classification used here mostly follows Johnson (2002), except I place *Smiliceroides* Schwarz in the subtribe Megapenthina rather than Pomachiliina (Fuller 2021).

Terms. The lateral surface of the mesoventrite anterad the mesocoxae is called the lateral wing after Guryeva (1974). The coxal rest (anterior articulating surface of Guryeva (1974) is described as "anterior" if it is restricted to the anterior surface of the mesoventrite, and described as "ventral" if it occupies part of the anteroventral surface of the mesoventrite. Calculation of the ocular index of the eyes follows Becker (1974); a smaller number indicates larger eyes.

Types. Schwarz did not designate types, state where his specimens were deposited, or state how many specimens he examined (Hayek 1973). Accordingly, I have designated the specimen bearing a handwritten determination label on green paper (e.g., Figure 1) as the lectotype, and other congeneric syntypes as paralectotypes; I do not know whether the determination labels were written by Otto Schwarz. I have designated lectotypes for Schwarz's species to fix the identity of Schwarz's names; even with my limited knowledge of the Mexican fauna, I have encountered undescribed species that closely resemble types of described species (see *Acanthathous championi* (Schwarz)). I have not questioned Schwarz's published type localities, since the distributions of most Mesoamerican elaterids are poorly known. Gaedike (1985) published a catalogue of types present in the SDEI collection, though this is not a complete list of all species described by Schwarz, nor is it a complete list of all elaterid types in the collection. In 2019, notes found in the SDEI collection indicated some of Schwarz's non-mesoamerican types I was searching for were missing by 1942, and the collection contains syntypes of the following species described by Champion (1894–1897): *Dipropus atricornis* (Champion), *D. yucatecus* (Champion), *D. chiriquiensis* (Champion), *Lacon aristatus* (Champion), *Rismethus squamiger* (Champion), *Aeolus hexastigma* Champion, *A. vermiculatus* Champion, *Paradonus quadrisignatus* (Champion), *Melanotus tropicalis* (Champion), *Hemicrepidius bififormis* Champion [now *Athous chicamensis* Etzler], *Glyphonyx quadraticollis* Champion, *G. cuneatus* Champion, *G. parallelus* Champion and *G. minimus* Champion.

## Results and Discussion

### *Monocrepidius mediofasciatus* (Schwarz) (Figures 1–7) New Combination

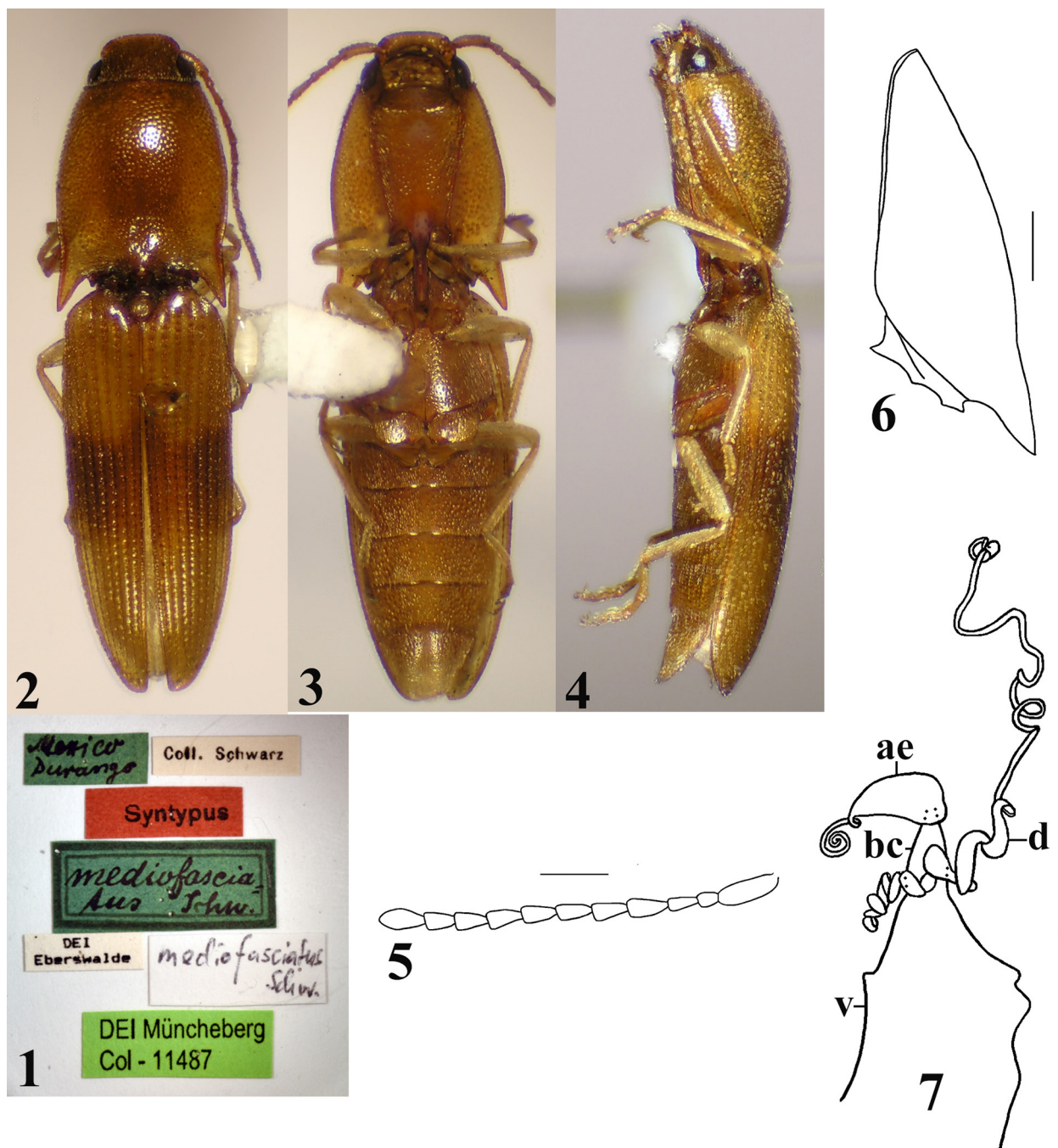
(Agrypninae, Oophorini)

*Aeolus mediofasciatus* Schwarz 1903:67–68; type locality: "Mexico: Durango"; sex not indicated.

*Aeolus mediofasciatus*, Schwarz 1906–1907:102; Schenkling 1925:123; Blackwelder 1944:290; Gaedike 1985:46.

Gaedike (1985) records one syntype, and I have examined one female syntype. This specimen is here designated the

lectotype. Labels are shown in Figure 1. The specimen has a pin hole through the right elytron and a smaller hole through the underlying metaventrite, and the curvature of the abdominal ventrites appears distorted; tibial spurs are visible only on the metatibia.



**FIGURES 1–7.** *Monocrepidius mediofasciatus* (Schwarz), lectotype; Figure 1: labels; Figure 2: habitus, dorsal; Figure 3: habitus, ventral; Figure 4: habitus, lateral; Figure 5: antenna; Fig. 6: hypomeron; Figure 7: female genitalia. Abbreviations: ae— anterior extension; bc—bursa copulatrix; d—diverticulum; v—vagina. Scale bar, Figures 5, 6: 0.5 mm, Figure 7: 0.25 mm.

Description of lectotype. General body shape (Figures 2–4) elongate, subparallel, flattened, elytra slightly narrower than pronotum. Length 6.5 mm; width 1.5 mm. Head, thorax, abdomen and antennae light yellowish brown; legs pale yellow, contrasting with body; elytra yellow, contrasting with pronotum, with broad brown transverse band at level of abdominal ventrite 1, anterior margin of band concave between striae 1–3, produced anteriorly along sutural interval to about level of metacoxa, posterior margin with short faint posterior projection along intervals 1 and 2; dorsal setae yellow on head and elytra, black to dark brown on pronotum; ventral setae pale yellow. Setae

fine, hair-like, subappressed, about three frontal puncture diameters long, directed anteriorly on head, hypomeron and prosternum, directed posteriorly elsewhere.

Head. Frons shallowly convex; cuticle smooth and shiny; punctures moderately deep, subumbilicate, moderate-sized, almost contiguous throughout; frontoclypeal carina narrowly smooth and shiny, rounded, in dorsal aspect transverse between eyes, distinctly angulate laterally, in lateral aspect slightly projecting, in anterior aspect transverse, linear between eyes. Frontoclypeal region oblique in anterodorsal-posteroventral plane, flat, about four times as wide as high between antennal sockets; cuticle and punctures as on frons. Eyes small, ocular index 60. Antenna (Figure 5) filiform, almost reaching to apex of hind angles; antennomere 3 slightly flattened; antennomeres 4–10 flattened, cuticle densely, minutely punctured, subshiny, with darker subcarinate pigment line along axis of articulation; antennomere 11 with longitudinal pigment line faint, inconspicuous.

Prothorax. Pronotum convex, longer than broad (midlength x midwidth 2.0 x 1.75 mm); hind angles bicarinate with sharp curved lateral carina close to and parallel to lateral pronotal carina extending anteriorly to level of procoxa, and short, less distinct posteromesal oblique carina extending about half distance to posterior margin of pronotum; basal sublateral incisures absent; basal declivity gradually declivous with short shallow groove along midlength; punctures and cuticle as on frons except interspaces of basal declivity with sparse, minute punctures; lateral carina complete to anterior margin. Hypomeron (Figure 6) with anteromesal angle flat; mesal margin straight, slightly thickened with indistinct submarginal groove; cuticle punctate anterad femoral groove, punctures about same size and shape as pronotal punctures, interspaces minutely punctured anterad femoral groove. Prosternum convex, sinuate; anterior lobe directed anteroventrally; margins of procoxal cavity widened and thickened but not raised anterad coxae, raised, declivous and thickened between coxae, subcarinate; punctures about half size of hypomeral punctures, separated by up to own diameters; interspaces minutely, sparsely punctured in posterior 3/4. Prosternal intercoxal process elongate, narrow, about five times as long as basal width, subtriangular in cross section, ventral surface slightly narrower than dorsal surface; ventral surface with a pair of lateral, horizontal convergent carinae in basal half, fading out about midlength; in lateral aspect ventral surface sloping dorsally in apical 1/3; apex rounded, ventral apex at same level as dorsal apex, apices separate, setose; ventral surface without punctures.

Pterothorax. Scutellar shield slightly longer than wide; surface slightly convex; slightly elevated above and more steeply angled anteroventrally than anterior margin of elytra; punctures minute, moderately dense. Elytron length 4.0 mm; elongate, convex, flattened across intervals 1–5; apices slightly dehiscent; punctatostriate, striae impressed, punctures subequal in size to pronotal punctures, variably separated by up to slightly more than own diameters; intervals flat, minutely moderately densely punctured; anterior margin subangulate, projecting anterad anterior margin of scutellum; anterior declivity almost absent. Mesoventrite with lateral wings concave; coxal rests anterior; posterior intercoxal process gradually declivous from posterior margin, very slightly elevated above mesocoxae in lateral aspect; mesoventritral cavity with lateral margins slightly convex, slightly raised, carinate, posterior margin U-shaped; anterior punctures subequal in size to prosternal punctures, contiguous, posterolateral angle sparsely minutely punctured. Mesepisternum slightly concave, posteromesal angle forming small part of margin of mesocoxal cavity; anterior margin thickened, smooth and shiny laterally; anteromesal angle with small deep submarginal pit, anterolateral angle with shallower submarginal pit; anterior punctures as on adjacent mesoventrite, posterior half very sparsely and minutely punctured. Metaventrite convex, slightly flattened along midlength; anterior intercoxal process slightly wider than long, on same plane as mesocoxae and posterior margin of mesoventritral posterior intercoxal process; meso-metaventritral suture shallowly grooved; punctures subequal in size to prosternal punctures; interspaces distinctly minutely punctured. Flight wings fully developed, not examined.

Legs. Prothorax: femur grooved for reception of tibia, margins of groove not carinate; tibia with row of either bifid stout setae or contiguous pairs of setae (details not clear on specimen) on anterior margin; tarsomere 4 with broad subtriangular ventrodiscal lobe, lobe about half length of tarsomere 5, clearly visible dorsally; pretarsal claws simple with one basal seta. Mesothorax: trochantin visible, subquadrate; tarsus as on protarsus except longer. Metathorax: coxal plates with posterior margin laterad trochanteral condyle transverse, straight, slightly diverging from anterior margin to about midwidth, then broadly rounded and steeply declivous, grading to gradually declivous until virtually absent at lateral margin; cuticle and punctures as on metaventrite.

Abdomen with ventrite 5 subtriangular, basal width slightly greater than median length, posterior margin broadly rounded; cuticle and punctures of lateral parts of ventrites 5 as on metaventrite, major punctures grading to small and dense along midlength. Female genitalia, Figure 7. Genital tract short, not extending anterad midwidth of ventrite 4; length ca. 2.0 mm; ovipositor short, broad. Gonocoxites without apical styli; cuticle posteriorly with

longer lateral and dorsal setae and shorter setae on mesal margin. Vagina (Figure 7, v) robust, without sclerites. Colleterial glands not distinguishable from vagina. Bursa copulatrix small (Figure 7, bc); with pair of anterior diverticula arising from a common dorsal duct, one diverticulum shorter, tightly irregularly coiled, one diverticulum (Figure 7, d) longer, irregularly coiled; anterior extension of bursa subreniform (Figure 7, ae), with fine, loosely coiled apical diverticulum; bursa without obvious sclerotizations.

Discussion. The lectotype lacks a carina along the anterior margin of the tibial groove on the profemur (Fuller 2012, fig. 61), and has a well developed ventrodistal lobe on tarsomere 4. These characters exclude *A. mediofasciatus* from *Aeolus* Eschscholtz, 1829, which has a sharp carina along the anterior margin of the profemoral tibial groove and either lacks, or has a very short, ventrodistal lobe on tarsomere 4. The characters are consistent with *Monocrepidius* Eschscholtz. *A. mediofasciatus* is here transferred to *Monocrepidius*, as *Monocrepidius mediofasciatus* (Schwarz), New Combination. The species can be recognized by the transverse brown band on the elytra at the level of abdominal ventrite 1 (Figures 2, 4), and the double punctures on the hypomeron, metaventrite, abdomen, posterior pronotum and prosternum.

### ***Monocrepidius rugicollis* Champion (Figures 8–16)**

(Agrypninae, Oophorini)

*Monocrepidius rugicollis* Champion 1895:349; type locality: “GUATEMALA, Cerro Zunil, Pantaleon”; two specimens, female.

*Monocrepidius restinctus* Schwarz 1902:229–230; type locality: “Guatemala”; sex not indicated. NEW SYNONYM.

*Monocrepidius restinctus*, Schwarz 1906–1907:95; Gaedike 1985:58.

*Monocrepidius rugicollis*, Schwarz 1906–1907:96.

*Conoderus restinctus*, Schenkling 1925:117; Blackwelder 1944:288.

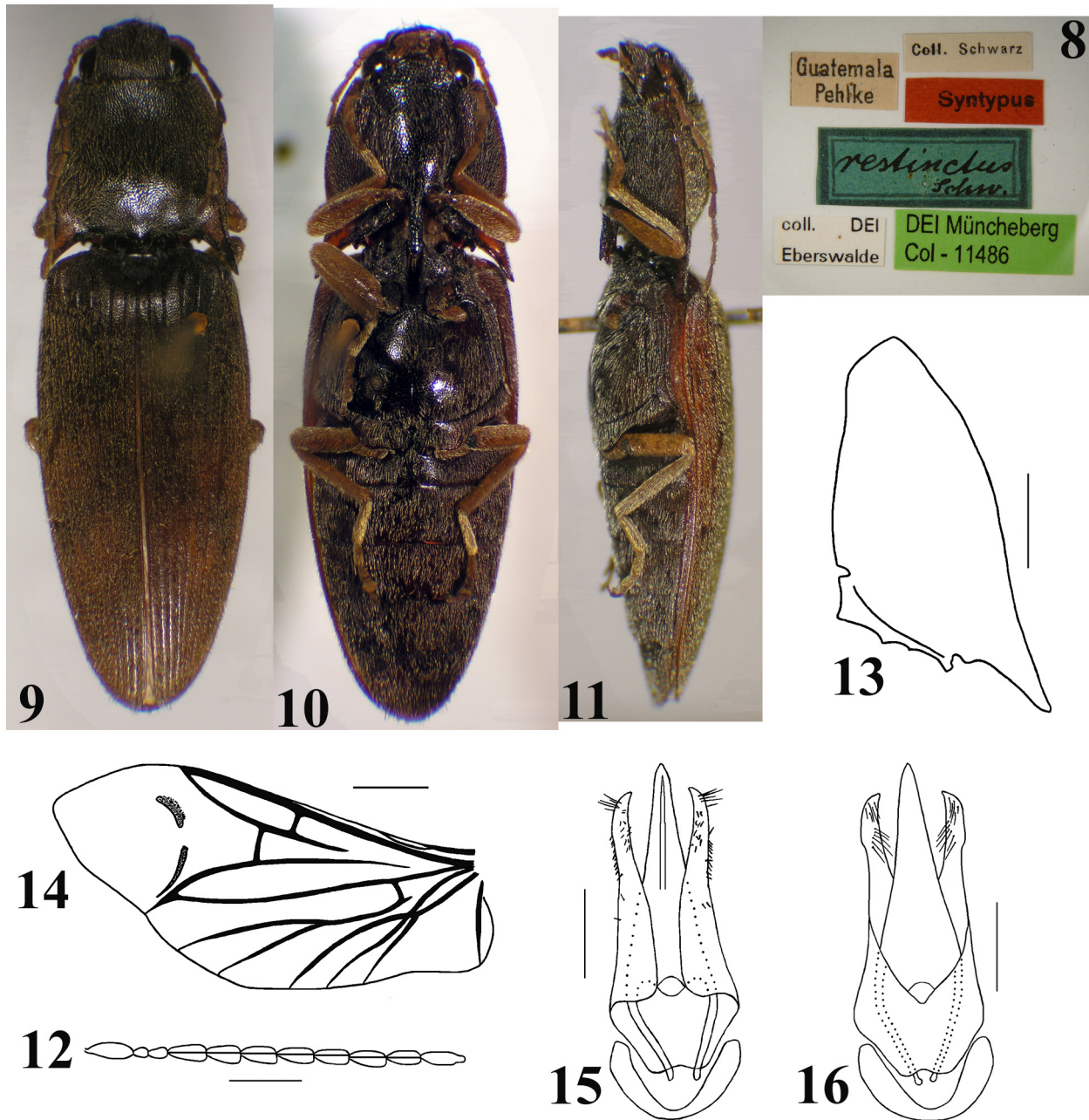
*Conoderus rugicollis*, Schenkling 1925:118; Blackwelder 1944:288; Johnson 2002:25; Fuller 2012:205.

Gaedike (1985) records one syntype for *M. restinctus*, and I have examined one male syntype. Labels are shown in Figure 8. This specimen is here designated the lectotype. The specimen is pinned through the right elytron, and is missing left mesothoracic leg beyond the trochanter, and left antennomeres 10 and 11.

Description of lectotype. General body shape (Figures 9–11) elongate, flattened, elytra at level of metaventrite wider than pronotum. Length 14 mm, width 4 mm. Head reddish-brown; pronotum mostly dark brown to black, lateral margins narrowly reddish-brown; elytra reddish-brown with basal 1/3, intervals 1–3, postmedian oblique band and anteapical transverse band dark brown, pigment grading to paler and less distinct posteriorly; antennae light brown; legs and palpi yellowish-brown; venter dark reddish-brown; dorsal setae yellow, ventral setae white. Setae semierect, hair-like, 3–4 frontal puncture diameters long, directed posteriorly except as noted.

Head. Frons convex, slightly depressed anterad eyes; frontoclypeal carina in dorsal aspect transverse, thin, inconspicuous, in lateral aspect curved ventrally, not projecting, in anterior aspect transverse, linear, separated from anterior margin by diameter of one puncture; punctures simple, deep, moderately sized, dense, contiguous throughout; setae directed more or less anteriorly. Eyes: ocular index 78. Antenna (Figure 12) reaching slightly posterad hind angles; antennomeres 4–10 flattened, with pigment line along line of articulation, line indistinctly carinate on antennomeres 4–8 and basal half of antennomere 9.

Prothorax. Pronotum wider than long (midlength x midwidth 3.25 x 4mm); convex, flattened along midlength, basal declivity almost half midlength; basal sublateral incisures small, not extended anteriorly; hind angles divergent, carinate, carina sharp, sinuate, close to lateral margin, extending anteriorly to near anterior margin of basal declivity; cuticle shiny, punctures about same size, depth and density as frontal punctures, contiguous throughout; setae directed away from antescutellar notch on middle half of basal declivity. Hypomeron (Figure 13) without raised border and submarginal groove on mesal margin; anteromesal angle flat; punctures and setae as on frons except setae about two puncture diameters long, appressed. Prosternum convex, lateral margins convergent posteriorly; anterior lobe directed anteriorly; margins around procoxae raised, thickened, rounded, smooth and shiny; punctures and setae as on hypomeron. Prosternal intercoxal process elongate, four times as long as width immediately posterad procoxae, horizontal, dorsal apical tooth slightly longer than ventral apical tooth; punctures slightly smaller and sparser than prosternal punctures.



**FIGURES 8–16.** *Monocrepidius restrictus* Schwarz, lectotype except as noted; Figure 8: labels; Figure 9: habitus, dorsal; Figure 10: habitus, ventral; Figure 11: habitus, lateral; Figure 12: antenna; Figure 13: hypomeron; Figure 14: wing venation, non-type specimen; Figure 15: aedeagus, dorsal; Figure 16: aedeagus, ventral. Scale bars, Figures 12, 13: 1.0 mm, Figure 14: 2.0 mm, Figures 15, 16: 0.5 mm.

Pterothorax. Scutellar shield slightly convex; in lateral aspect, declivous on same plane as basal declivity of elytra, anterior margin slightly depressed below plane of basal declivity; punctures slightly smaller than pronotal punctures, shallow, almost contiguous, simple; setae as on posteromesal pronotum except directed posteriorly. Elytron length 9.0 mm; apices separately rounded, sutural margin with minute tooth; punctato-striate, striae shallowly impressed; punctures in striae oblong, separated by about own diameters, punctures in striae 1–4 about half width of those in striae 5–9; intervals 1–6 flat in basal half, slightly convex in apical half, intervals 7–9 slightly convex; intervals densely, minutely punctured; setae shorter than scutellar shield setae, appressed, interval setae finer. Mesoventrite with lateral wings concave; anterior margin with small anteromesal submarginal depression grading into surrounding cuticle; coxal rests anterodorsal, not visible in ventral aspect; mesoventritral cavity margins subparallel throughout, posterior margin of cavity broadly U-shaped; posterior intercoxal projection produced posteroventrally to level of

posterior margin of mesocoxa, posterior margin of projection raised above metaventrite; punctures as on scutellar shield. Mesepisternum forming small anterolateral part of margin of mesocoxal cavity; with deep conspicuous, circular, anteromesal submarginal pit; anteromesal angle projecting; anterior margin thickened, rounded, smooth and glabrous laterally; anterior half of sclerite with punctures and setae as on mesoventrite, posterior half smooth, shiny, sparsely punctate and setose. Metaventrite convex, flattened along midlength posteriorly; anterior and lateral margins with raised border and submarginal groove, border narrowing to acute point at posterolateral angle; mesoventral-metaventral suture not grooved; punctures small, dense, shallow, almost contiguous throughout. Flight wings fully developed; venation of non-type specimen illustrated (Figure 14).

Legs. Prothorax: femur grooved for reception of tibia, dorsal and ventral margins of groove not carinate; tibia with two tibial spurs, spurs thicker and darker than distal setae, but only slightly longer; tarsomere 4 with large, wide, ventrodistal lobe, pretarsal claws simple with one basoventral seta. Mesothorax: trochantin visible, transversely subrectangular; femur as on prothorax except margins parallel; tibia with stout setae. Metathorax: metacoxal plate about twice as wide mesally as laterally, posterior margin mesad and laterad medial declivity subparallel.

Abdomen with ventrite 5 semioval, basal width slightly greater than median length, posterior margin broadly convex, surface convex. Aedeagus (Figures 15, 16); median lobe bicarinate dorsally, carinae appear almost contiguous in dorsal aspect, appear widely separated in lateral aspect; lateral lobes broadly fused ventrally in anterior 1/3.

Discussion. Schwarz (1902) compares *M. restinctus* with *Monocrepidius repandus* (Erichson) from Peru and *Monocrepidius ternarius* Candèze [*sic*; *lapsus* for Germar, *vide* Candèze (1891), Schenkling (1925)] from Brazil. I have not seen types of either of these species. I have compared the lectotype of *M. restinctus* with the lectotype female and paralectotype male of *M. rugicollis* (NHML) and have not been able to identify any characters that will separate them. In Guatemala, *M. rugicollis* is most similar to *M. pilatei* Candèze and is best distinguished by the scutellar shield. In lateral aspect, the scutellar shield of *M. rugicollis* is on the same plane as the anterior declivity of the elytra and is not visible in lateral aspect. In *M. pilatei*, the scutellar shield is less inclined than the anterior declivity of the elytra and the posterior margin is raised above the elytra in lateral aspect. In side by side comparison, most specimens of *M. rugicollis* have smaller head and prothoracic punctures, narrower body and narrower hind angles than *M. pilatei*.

Additional specimens examined (all specimens UVGC except as noted): GUATEMALA. GUATEMALA: Fraijanes, km. 21.5, Carretera á El Salvador, Condado Sn. Francisco Javia, 20.v.2007, Maria Jose Larrave [1]; Carretera al Salvador, km 21.5, IV 2007, Jose Riveos [1]; Guatemala, km. 16, 8.III.1999 [1]; Guatemala, z7, Centro Espanol, IV 2003, L. Arevalo [1]; Guatemala 1–8 V 1986, R. Perez [1]; Puerta Parada, 23 III 1996, Lehnhoff M [1], Puerta Parada, 14.56630 -90.463362, bosque cipres, 20–27.iv.2013 [1], 4–11.v.2013 [1], 1–15.iii.2014 [1], 7–14.iii.2015 [1], 11–18.iv.2015 [1], 18–25.iv.2015 [2], 18–25.iii.2107 [1], all J.C. Schuster (ERFC); Santa Catarina Pinula, 20 IV 2010, A.F. Barrilas [1]; Guatemala, zona 6, Mixco, 4 V 1996, C. Marroquin [1]; Villa Canales, aldea El Obrajuelo, 14° 17.20'N 90° 34.10'W, en el pueblo, 700m, 28 IV 2006, E.B. Cano [1]; Guatemala, 13 II 1994, H Bauer [1]; Palencia, Aldea El Plan, 26 enero 2001, Rafael Sandoval [1]; Guatemala, zona 2, El Zapote, 22 V 2001, A. Guerroy, L. Macios [1]. SUCHITEPEQUEZ: Santa Barbara, Ref. Quetzal UVG, 14.5417598494 -91.197294818, 1100m, XII 2007, Camposeco y Monzon [1], 1600m, abril 2008, J. Perez y F. Camposeco [1]; Patulul, Finca Vesubio, 1450m, 10 de Febrero 2007, Monzon y Camposeco [1]; Sta. Ana, Fca. Chicanoa, 1600m, 26.iv.2000, L. Vela, J. Monzon y C. Bailey [1]; Santa Barbara, Finca Panama, 14.5323349 -91.1976111, 1127 m, Enero 2008, Perez, Camposeco, Monzon [1]. BAJA VERAPAZ: Sn. Cristobal Verapaz, Presa Pueblo Vielo, 15.294995 -90.483637, 715m, 15 de Julio 2005, Jose Monzon Sierra [1]; Sn. Jeronimo, Fca. Sibabaj, 8 VIII 1993, J. De Leon [1]. SAN MARCOS: La Reforma, 5 IV 1996, Lehnhoff, M [1]. ALTA VERAPAZ: 5 km before Coban, Orquigonía, 15-03-2019, J. Yoshimoto [1]. In comparison with recently collected specimens, pigments of the lectotype of *M. restinctus* do not appear faded.

### ***Acanthathous championi* (Schwarz) (Figures 17–27)**

(Dentrometrinae, Dendrometrini)

*Athous Championii* Schwarz 1901b:328–329; type locality: “Mexico, Durango”; male and female.

*Athous Championi*, Schwarz 1906–1907:207; Schenkling 1925:344.

*Athous championi*, Blackwelder 1944:291; Gaedike 1985:25.

*Acanthathous championi*, Becker 1979:413.

Gaedike (1985) records two syntypes, and I have examined one male and one female syntype. Labels are shown in Figures 17, 24. The male is here designated the lectotype, and the female designated the paralectotype. The male is missing left and right antennomeres 10 and 11, left and right mesotarsus and right protarsus, and right metatarsomeres 4 and 5. The female is missing left antennomeres 4–11, right protarsomeres 2–5, right mesothoracic leg beyond the trochanter, and right metatarsus. Both specimens have the prothorax glued to the mesothorax.

Description of lectotype male. General body shape (Figures 18–20) flattened, oval in cross section, somewhat elongate, more or less parallel sided. Length 7.25mm, width 2.0 mm. Head, pronotum, venter of thorax pale brown, elytra yellowish brown grading to yellow in apical 1/4; hind angles of pronotum, scutellar shield, lateral margins of hypomeron yellowish brown; epipleura yellowish orange; abdomen pale brown on ventrite 1, grading to yellowish brown on ventrite 5; antennae and legs yellow, contrasting with body; setae yellowish white dorsally, white ventrally. Setae hair-like, fine, semierect dorsally, appressed ventrally; 2–3 frontal puncture diameters long; directed posteriorly except as noted.

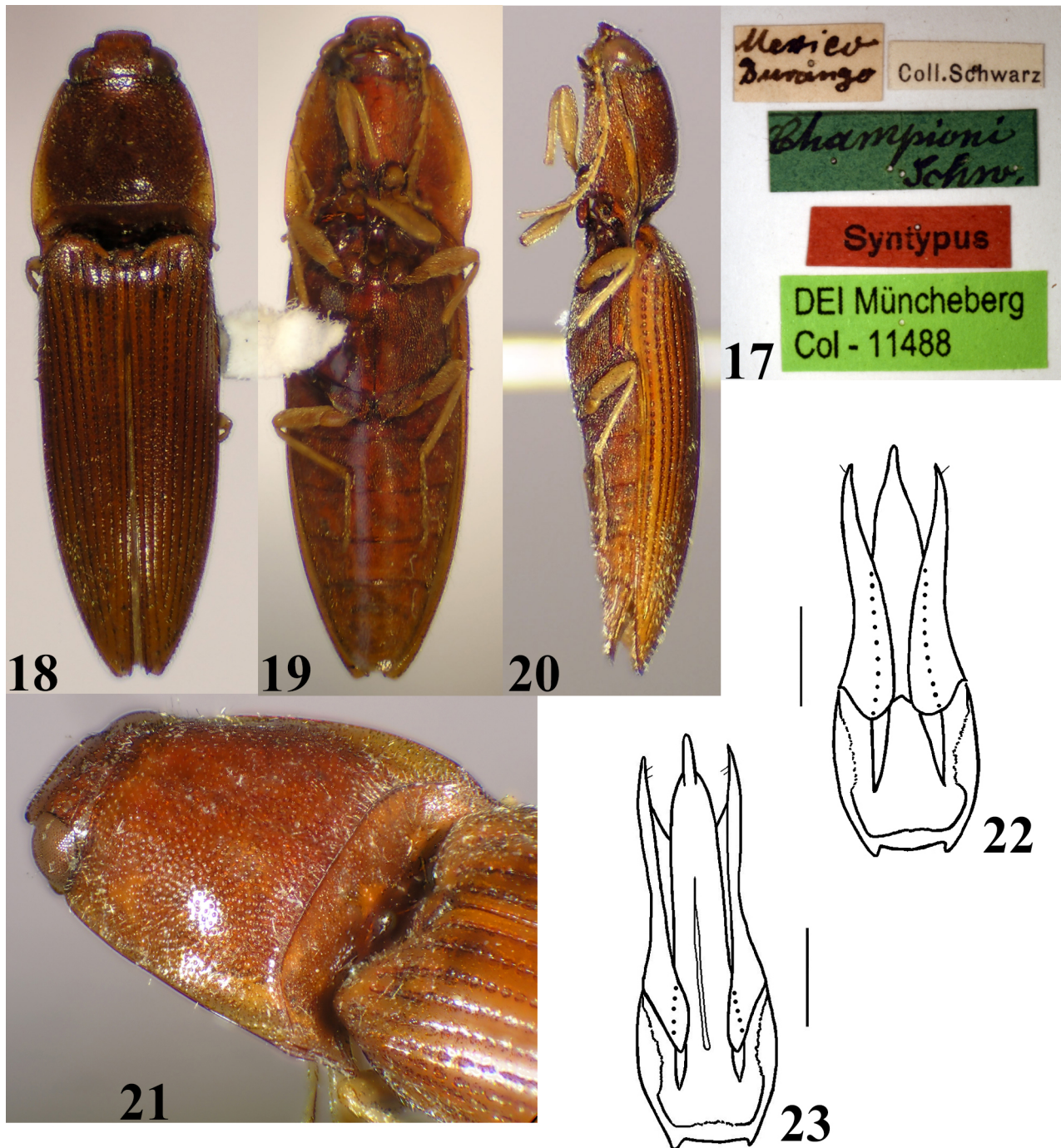
Head. Frons flat; punctures very shallow, umbilicate, moderately large, almost contiguous throughout; most setae lost, remaining setae directed more or less anteriorly; frontoclypeal carina in dorsal aspect shallowly, smoothly convex, margin smooth and shiny, in lateral aspect projecting, free margin thick, rounded, about same length as antennomere 2, in anterior aspect thickened, rounded, shallowly curved ventrally with small ventral tooth at midlength of head. Frontoclypeal region strongly oblique in anterodorsal-posteroventral plane, about twice as wide as high between antennal sockets, ventral tooth of frontoclypeal carina projecting on to dorsal half of frontoclypeal region, ventrolateral angles of frontoclypeal region with oblique subcarinate ridge directed towards tooth of frontoclypeal carina; antennal socket facing ventrally. Eyes: ocular index 33. Antennae filiform, antennomere 8 reaching apex of hind angles; antennomere 2 small, slightly longer than distal width, subglobular; antennomeres 3–9 flattened, elongate, narrow, subtriangular, with pigment line along axis of articulation, antennomere 3 longest, about 2.5 times as long as distal width, antennomeres 4–9 each slightly shorter than antennomere 3, cuticle densely minutely punctured, dull, setae dense, most setae shorter than frontal setae, appressed.

Prothorax. Pronotum (Figure 21) convex, flattened along midlength, projecting shelf-like along lateral margin; subquadrate (midlength x midwidth 2.0 x 2.0mm); basal declivity bordered anteriorly by a sharp, transverse, linear, finely crenellate carina (Figure 21); hind angles with sharp distinct carina close to and parallel with lateral margin, carina separate from posterior transverse carina, in lateral aspect lateral carina raised into small knob at apex; posteromesal margin of hind angles with fine narrow submarginal carina and sharp raised marginal carina; basal sublateral incisures absent; basal declivity very steep posterad transverse carina; punctures same size, density and structure as on frons; most setae lost, anterolateral setae directed anterolaterally, grading to laterally by hind angles, setae on and adjacent to basal declivity directed anteriorly. Hypomeron with anterior margin obliquely truncate; mesal margin straight, without smooth border and submarginal groove anterad procoxae, with well defined border and submarginal carina and groove posterad posterolateral angle of prosternum; anteromesal angle flat; posterior margin with subrectangular projection adjacent to mesepisternum; posterolateral angle projecting laterally, apex subacute; punctures anteriorly and mesally same size, structure and density as frontal punctures, grading to half that size and separated by about own diameters posterolaterally, punctures mostly absent on mesal half of femoral groove; setae directed anteriorly. Prosternum convex, flattened along midlength; lateral margins divergent anteriorly, straight; anterolateral angle at base of anterior lobe concave; anterior lobe directed anteroventrally, anterior margin narrowed laterally; sclerite between procoxae concave; margin of procoxal cavity raised, thickened, darkly pigmented, carinate; punctures as on frons; setae directed anteriorly. Prosternal intercoxal process elongate, about 3 times as long as width posterad procoxal cavities, horizontal in lateral aspect, subquadrate in cross-section, dorsal and ventral surfaces smoothly merging at apex; apex subacute, triangular; ventral punctures and setae of intercoxal process extend to apex.

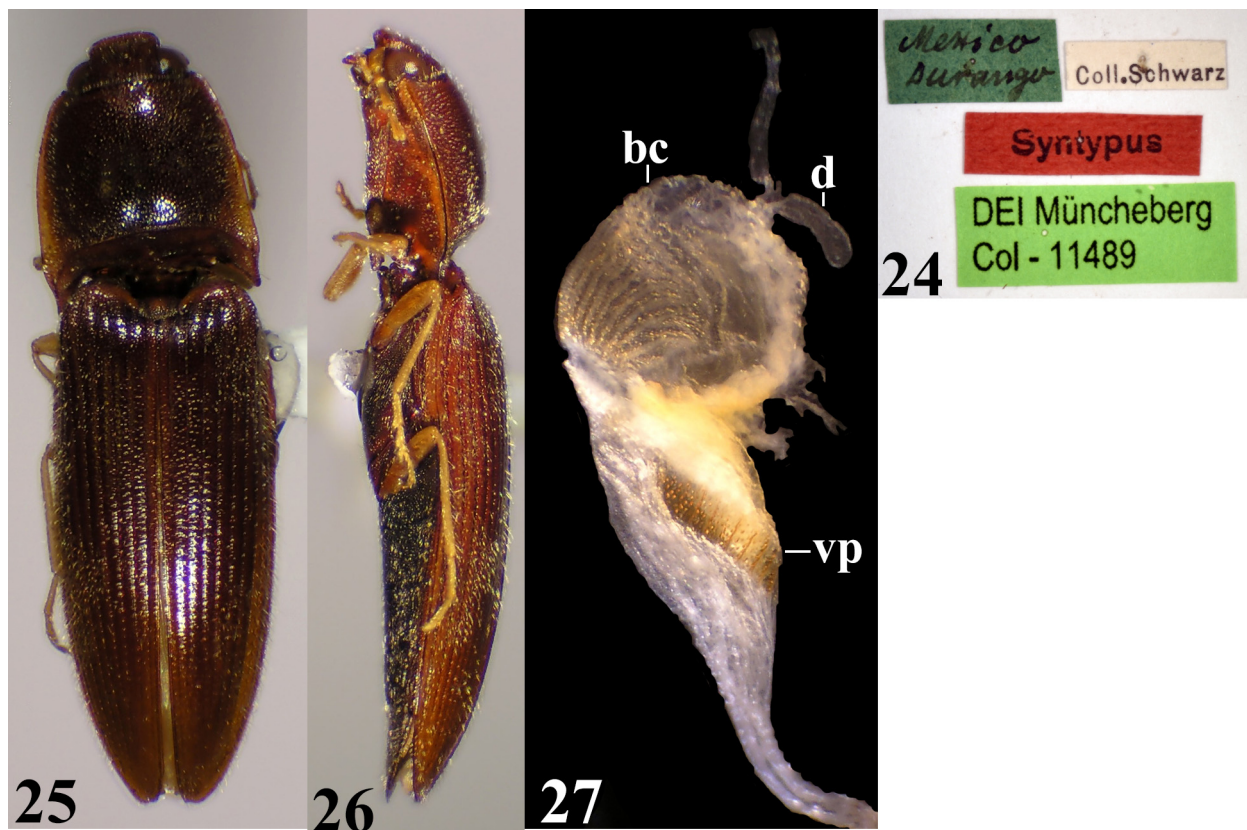
Pterothorax. Scutellar shield shallowly convex, angled almost vertically anteroventrally, at steeper angle than anterior declivity of elytra; viewed perpendicular to surface, shield subquadrate, anterior margin not raised or well defined, grading into mesonotum; punctures minute, dense; setae dense, appressed, partially obscuring cuticle. Elytra elongate, length 5.0 mm; apices separately rounded; anterior margin strongly convex, excavated mesally anterad scutellar shield, anteromesal angle carinate, right-angled; punctatostriate; striae punctures subequal in size to pronotal punctures, separated by about own diameters basally, grading to separated by 2–3 times own diameters apically; intervals flat, minutely, moderately densely punctured; most setae lost; humeral angle and anterior declivity with 18–20 stout, reddish, spine-like setae; lateral elytral carina sharp, projecting shelf-like at apex. Mesoventrite



with lateral wings concave; coxal rests anterior; posterior intercoxal process subequal in width to mesocoxa, posterior margin transverse, straight, not elevated above mesocoxae; mesoventral cavity with margins subparallel, raised, thin, declivous at about 45° angle between mesocoxae, posterior margin of cavity between mesocoxae broadly, bluntly V-shaped; punctures subequal in size and density to prosternal punctures. Mesepisternum forming very small anterolateral part of mesocoxal cavity; anterior margin angulate, thickened, smooth and shiny with large submarginal pit adjacent to apex of angle; punctures restricted to anterior and lateral cuticle, subequal in size to prosternal punctures. Metaventricle convex, flattened along midlength; anterior intercoxal process short, subequal in width to posterior mesoventral intercoxal process, not raised above mesocoxae, mesoventral-metaventricle suture grooved; punctures slightly smaller than prosternal punctures, shallow, somewhat oblong, almost contiguous throughout. Flight wings fully developed; not examined.



**FIGURES 17–23.** *Acanthathous championi* (Schwarz), lectotype. Figure 17: labels; Figure 18: habitus, dorsal; Figure 19: habitus, ventral; Figure 20: habitus, lateral; Figure 21: pronotum, dorsolateral; Figure 22: aedeagus, dorsal; Figure 23: aedeagus, ventral. Scale bar, 0.25 mm.



**FIGURES 24–27.** *Acanthathous championi* (Schwarz), paralectotype. Figure 24: labels; Figure 25: habitus, dorsal; Figure 26: habitus, lateral; Figure 27: female genitalia. Abbreviations: bc—bursa copulatrix; d—diverticulum; vp—vaginal plate.

Legs. Prothorax: femur with surface opposing tibia flattened, not grooved; tibia flattened, anterior margin subcarinate, with two short tibial spurs; tarsomere 3 with ventrodiscal lobe, lobe indistinctly visible in dorsal aspect; tarsomere 4 short, inconspicuous. Mesothorax: trochantin visible, subrectangular; femur with tibial groove, ventral margin subcarinate. Metathorax: coxal plate subtriangular; posterior margin gradually, slightly sinuately narrowed laterad trochanteral insertion, almost absent at lateral margin; femur narrow, dorsal margin of tibial groove subcarinate; tarsomere 3 excluding ventrodiscal lobe less than half length of tarsomere 2, tarsomere 4 small, shorter than ventrodiscal lobe of tarsomere 3.

Abdomen with ventrite 5 subtriangular, slightly shorter than basal width, posterior margin broadly, evenly rounded, apical half of sclerite flattened; punctures as on metaventrite. Sternite 9 shoe-sole shaped, with cluster of 3–4 stouter setae at apex. Aedeagus (Figures 22, 23): lateral lobe with apex bearing 2 small, fine dorsal setae and 1 small, fine ventral seta, anteroventral margin produced to about midwidth of basal piece, apex acute, lightly pigmented; basal struts foliaceous with mesal surface very lightly pigmented, lateral surface darkly pigmented.

Paralectotype female (Figures 25, 26). Length 7.25 mm, width 2.0 mm. Colour as in male except most of body and elytra darker brown; scutellar shield, base of elytra, sutural interval and apical 1/4 of elytra more orange brown. Characters as in male, except as noted; antenna: antennomeres 9 & 10 subequal in size and structure; antennomere 11 subequal in length to antennomere 10, with longitudinal pigment line in basal half, constricted in apical 1/3, apex rounded; cuticle, punctures and setae of antennomeres 10 & 11 as on antennomeres 4–9. Eyes: ocular index 33. Pronotum in dorsal aspect slightly less convergent anteriorly (Figure 25); setae on disk directed anteriorly, grading to laterally posterolaterally. Elytron with spines on anterior declivity and humerus less conspicuous due to darker underlying cuticle. Ovipositor with gonocoxites lightly pigmented throughout, lateral margins bearing two visible setae; apical styli not present, but shape of apex suggests styli have been lost (see Discussion); vagina with elongate, undulating, subelliptical spiny plate (Figure 27, vp); bursa copulatrix subcircular (Figure 27, bc), with large subcircular, lightly pigmented, undulating spiny plate basally; anterior end of bursa with short, elongate, closed diverticulum (Figure 27, d), diverticulum arising at base of, but separate from, spermathecal duct; spermathecal duct broken on specimen.

Discussion. The species can be recognized by the relatively broad body (Figures 18, 25), transverse pronotal carina (Figure 21), and rounded apex of the elytra. Most species of *Acanthathous* I have examined are longer and narrower than *A. championi*. I have examined one undescribed species from Mexico that is almost identical externally to *A. championi*, but has the apex of the elytra notched. Etzler (2020) has used characters of the female genitalia to redefine the related genera *Hemicrepidius* Germar and *Athous* Eschscholtz in Mesoamerica. Female genitalia of *A. championi* were compared with *Acanthathous pachyderoides* Champion, *A. campanulatus* (Champion), *A. rugipennis* (Champion) and two undescribed species. All species have an undulating, obliquely longitudinal spiny plate on vagina (Figure 27, vp); details of size and shape vary between species, but the presence of this plate may be diagnostic of *Acanthathous*. All specimens examined with an intact ovipositor have long apical styli bearing apical setae.

***Smiliceroides quadrilineatus* (Schwarz) (Figures 28–34)**  
(Elaterinae, Ampedini, Megapenthina)

*Psiloniscus quadrilineatus* Schwarz 1901a:328–329; type locality: “Mexico, Durango (Colonia)”; sex not stated.

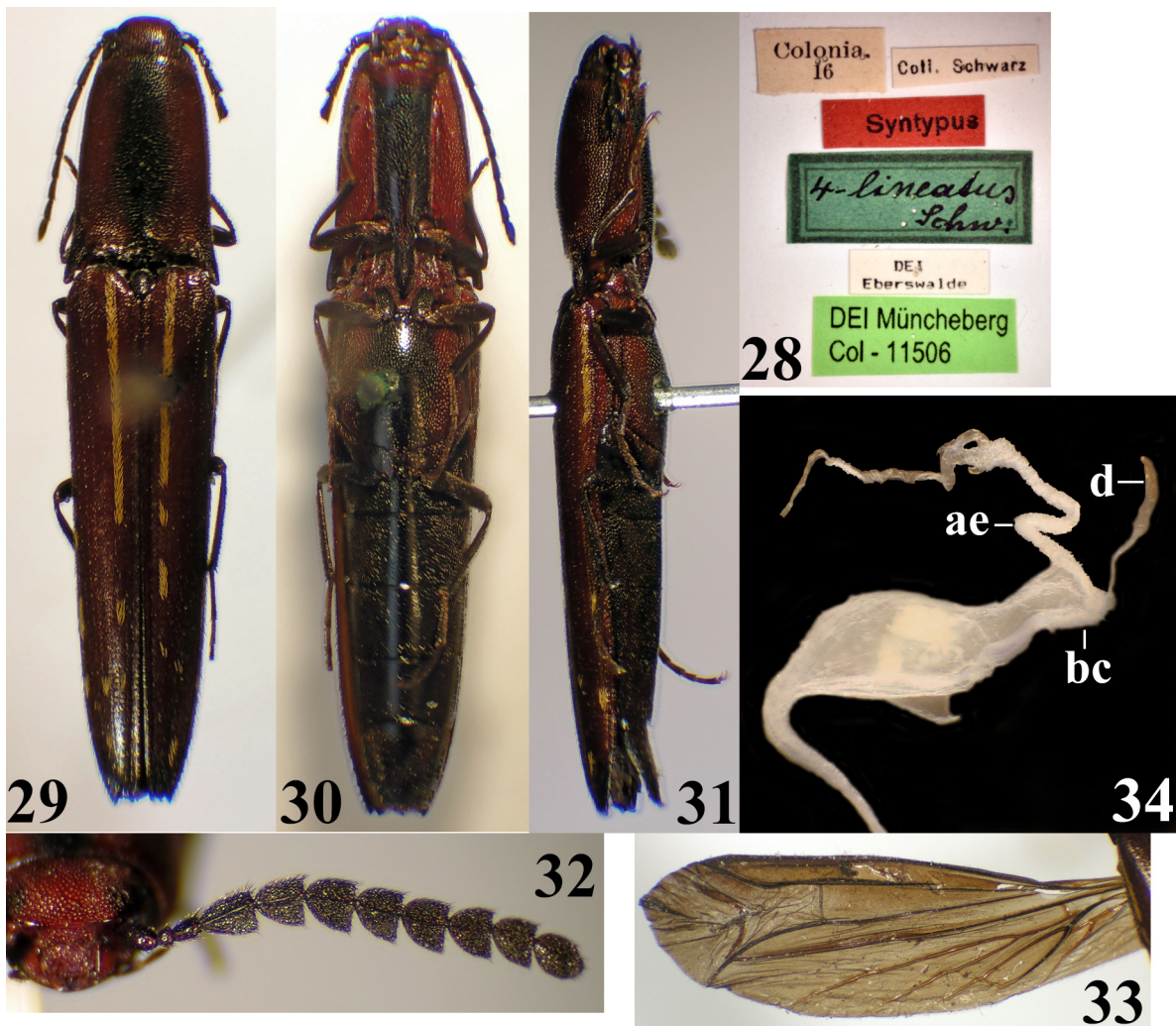
*Smiliceroides quadrilineatus*, Schwarz 1906–1907:139, plate 5, figure 5; Schenkling 1925:190; Blackwelder 1944:1407.

*Psiloniscus quadrilineatus*, Gaedike 1985:57.

Gaedike (1985) records one syntype, and I have examined one female syntype. Labels are shown in Figure 28. This syntype is here designated the lectotype. The specimen is pinned through the right elytron, and is missing right antennomeres 6–11, left protarsomeres 4 and 5 and right metatarsomeres 4 and 5. Verdigris is present around the pin.

Description of lectotype. General body shape (Figures 29–31) elongate, narrow, parallel-sided, somewhat oval in cross-section. Length 15.0 mm; width 3.0 mm. Cuticle dark reddish; anterolateral angle of frons, a median vitta and hind angles of pronotum, apex of elytra, prosternum between anterior lobe and prosternal intercoxal process, a median vitta on metaventricle, coxa, femur, tibia and to a lesser extent trochanter, and antennomeres 4–11, black; tarsus brown; setae of labrum and antennomeres 4–11 black, other head and most pronotal setae grayish light brown, setae on basal declivity of pronotum and mesal margin of hind angles yellow; most elytral setae black; both elytra (Figure 29) with linear rows of yellow, narrowly scale-like setae not intermixed with black hair-like setae, pattern on each elytron not symmetrical with other elytron, position of patches not transversely linear across both elytra; right elytron: interval 3 with long patch of yellow setae in anterior half, broken into two shorter patches at midwidth, and 3–4 setae at posterior 1/3; interval 5 with patches of 3–4 and 11–12 yellow setae in apical 1/3 and 5–6 single yellow setae on anterior declivity; interval 9 with row of yellow setae in anterior 1/4 and two small patches in posterior half; left elytron: interval 3 with long patch of yellow setae from basal declivity to midwidth, and two smaller patches in posterior half; interval 5 with one yellow seta in anterior 1/4, two patches of yellow setae in posterior 1/4; interval 7 with three yellow setae in posterior 1/4; interval 9 with long broken patch of setae in anterior 1/4, setae becoming sparse at posterior end, a single yellow seta at midwidth, three patches of yellow setae and a single posterior seta in posterior half; setae of ventral surface pale yellowish. Cuticle smooth and shiny. Setae hair-like, inconspicuous (except as noted above), fine, appressed, about 3 frontal puncture diameters long; directed posteriorly on pterothorax and elytra, otherwise as noted.

Head. Frons evenly convex; frontoclypeal carina in dorsal aspect convex, curvature broadly flattened around midlength of head, in lateral aspect slightly projecting (Figure 31), directed anteroventrally, in anterior aspect (Figure 32) transverse between antennal sockets; punctures shallow, umbilicate, moderately large, contiguous throughout; setae directed more or less anterolaterally. Frontoclypeal region about 2.5 times as wide as high; antennal socket not sharply defined, dorsal margin thickly carinate; punctures as on frons; setae directed mesally. Eyes small; ocular index 71. Antenna (Figure 32) robust, falling short of apex of hind angles by about length of antennomere 11; antennomeres 1, 2 and 3 shiny, rounded; antennomeres 4–11 dull, flat, with sharp longitudinal carina along axis of articulation on outer surface, and broadly rounded carina along axis of articulation on inner surface.



**FIGURES 28–34.** *Smiliceroides quadrilineatus* (Schwarz), lectotype. Figure 28: labels; Figure 29: habitus, dorsal; Figure 30: habitus, ventral; Figure 31: habitus, lateral; Figure 32: antenna; Figure 33: metathoracic wing; Figure 34: female genitalia. Abbreviations: ae—anterior extension; bc—bursa copulatrix; d—diverticulum.

Prothorax. Pronotum convex, slightly flattened along midlength, elongate (midlength x midwidth 4.0 x 2.5 mm); hind angles divergent, without carina; posterior 1/4 of midlength shallowly, broadly canaliculate; basal sublateral incisures short, subquadrate, on mesal margin of hind angles; basal declivity steeply declivous; lateral pronotal punctures same size, shape and density as frontal punctures, grading to slightly smaller and separated by about own diameters along midlength; setae directed posteriorly on anterior 1/3 of pronotal vitta, directed laterally laterad pronotal vitta, grading from directed posterolaterally to posteriorly at anterior margin of basal declivity, directed mesally on basal declivity; lateral pronotal carina sharp, complete from apex of hind angles to anterior margin. Hypomeron with femoral groove very shallow; anterior margin truncate; mesal margin with sparsely punctate marginal ridge and submarginal groove, anteromesal angle flat; posteromesal angle closing lateral half of procoxal cavity; posterolateral angle projecting; anterior punctures same size and density as lateral pronotal punctures, grading to less dense at level of procoxal cavities; setae directed anteriorly. Prosternum convex, narrow; cuticle with short, longitudinal narrow glabrous and impunctate patch anterad procoxae; anterior lobe short, directed anteriorly; anterior punctures slightly smaller than hypomeral punctures, separated by less than own diameters, posterior punctures distinctly smaller than hypomeral punctures, separated by about own diameters; setae directed posteromesally; sclerite flat between procoxae; anterior margin of procoxal cavity thickened, smooth and shiny. Prosternal intercoxal process about three times as long as width posterad procoxae in lateral aspect; ventral surface concave with lateral margins sharply carinate in anterior half, convex and grading into dorsal apex in posterior half;

in ventral aspect, ventral surface about half width of dorsal surface, lateral margins of dorsal surface produced shelf-like laterally, carinate; ventral punctures small, dense; setae directed anteriorly.

Pterothorax. Scutellar shield convex, somewhat gibbous in lateral aspect, about twice as long as broad; angled anteroventrally more steeply than anterior declivity of elytra; viewed perpendicular to surface, anterior margin convex, posterior margin truncate; punctures minute, shallow, moderately dense. Elytron convex laterally, flattened across intervals 1–4, length 10.0 mm; apex notched, sutural and lateral angles of notch projecting tooth-like, acute, sutural tooth small, lateral tooth about twice size of sutural tooth; punctatostriate, sutural stria impressed to apex, stria 2 impressed in anterior 2/3, stria 3 impressed in anterior half, other striae shallowly and indistinctly impressed in anterior 1/4, distinction between strial and interval punctures not obvious in posterior 1/3; strial punctures subequal in size to lateral pronotal punctures, irregularly spaced; intervals flat, densely minutely punctured; epipleuron with dorsal carina forming broad, flat lateral shelf around lateral apical tooth. Mesoventrite with lateral wings angled dorsolaterally with shallow anterolateral depression; coxal rests anterior; mesoventral-mesepisternal suture grooved anteriorly, anterior end notched; posterior intercoxal process about as wide as mesocoxa, elevated above coxa, posterior margin elevated above metaventrite, truncate; mesoventral cavity oval, slightly narrowed between mesocoxae, posterior margin U-shaped; in lateral aspect, posterior intercoxal projection gradually declivous anteriorly, slightly angled at anterior margin of mesocoxal cavity; punctures shallow, umbilicate, almost contiguous, about same size as lateral prosternal punctures. Mesepisternum not forming part of margin of mesocoxal cavity; convex; punctures as on mesoventrite. Metaventrite convex, flattened along midlength; anterior intercoxal process short, about 2.5 times as wide as long, below level of mesocoxa; punctures same size and density as on prosternum; setae appressed. Flight wings (Figure 33) translucent black.

Legs. Prothorax: femur with shallow tibial groove, margins not carinate; tibia with two tibial spurs; tarsus with dense ventral setae on all tarsomeres. Mesothorax: trochantin visible, subtriangular; tarsus longer than protarsus. Metathorax: coxal plate with posterior margin toothed at level of trochanter-femur joint, tooth slightly shorter than basal width, margin steeply declivous laterad tooth then subparallel in lateral 1/3; tarsus longer than mesotarsus.

Abdomen with ventrite 5 subtrapezoidal, less convex than ventrites 1–4, median length slightly longer than basal width, posterior margin broadly truncate; punctures almost contiguous laterally and posteriorly, grading to separated by about own diameters anteromesally; setae forming marginal fringe along posterior margin. Female genitalia (Figure 34); gonocoxites more heavily pigmented anteroventrally and laterally, with a pair of lateral setae and 2–3 apical setae; apical styli light brown, about 3 times as long as wide, 2–3 apical setae present. Genital tract (Figure 34) linear, bursa copulatrix not well differentiated from vagina; colleterial glands not differentiated from vagina; bursa copulatrix (Figure 34, bc) without spines, truncate anteriorly, with narrow tubular diverticulum ending in elongate, lightly pigmented receptacle (Figure 34, d); anterior extension (Figure 34, ae) with at least two rows of minute spines, extension terminating in small tight coil and lightly pigmented subreniform receptacle.

Discussion. Schwarz (1906–07) proposed the genus *Smiliceroides* for this species based on the widened, flattened antennomeres 4–11 (Figure 32). I have examined the described species of *Psiloniscus*, including female genitalia, and found no characters that conflict with Schwarz's conclusion. *S. quadrilineatus* can be recognized by the broad antennomeres (Figure 32) and the rows of yellow, scale-like setae on the elytra (Figure 29).

### ***Anoplischiopsis divisus* Schwarz (Figures 35–46)**

(Elaterinae, Ampedini, Dicrepidiina)

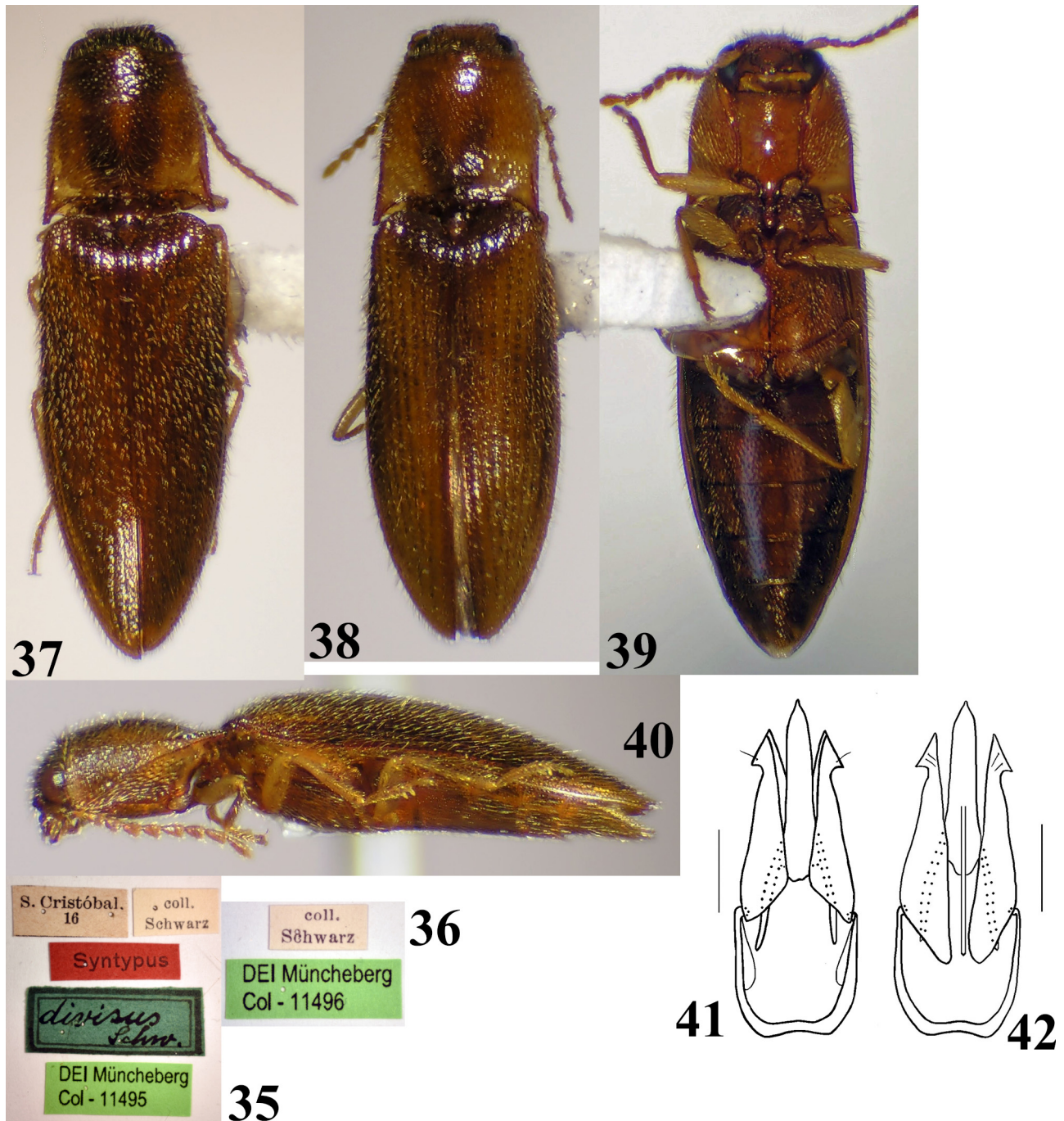
*Anoplischiopsis divisus* Schwarz 1898:141; type locality: “Mexico, S. Cristobal”; more than one specimen indicated, sex not stated.

*Anoplischiopsis divisus*, Schwarz 1906–1907:69; Schenkling 1925:81; Gaedike 1985:31.

*Anoplischiopsis divisa*, Blackwelder 1944:299.

Schwarz (1898) did not state how many specimens he had, but in his description he states [in translation] “(In one specimen available to me this divided longitudinal band is shortened towards the front)”, which indicates more than one specimen. Gaedike (1985) records one syntype. I have examined one male and one female from the Schwarz collection. The male specimen bears a syntype label (Figure 35) and is here designated the lectotype. The female lacks a locality label (Figure 36). In the male, the longitudinal narrowly U-shaped dark band on the pronotum extends to the anterior margin (Figure 37), while in the female, this longitudinal band is distinct on the posterior

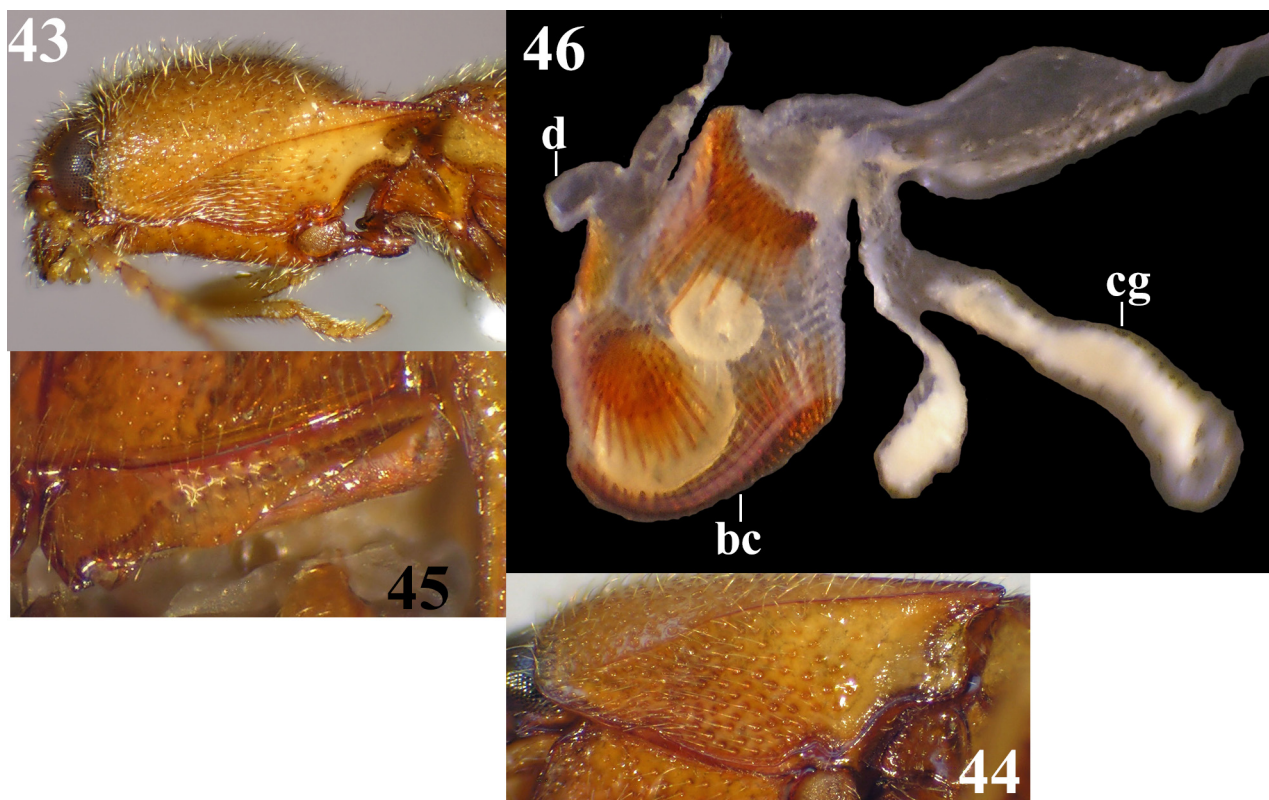
half and fades out anteriorly (Figure 38). I believe the female corresponds to the specimen Schwarz mentions in the original description and is here designated a paralectotype. The lectotype lacks obvious damage. The paralectotype is missing the left prothoracic leg beyond the coxa and the left mesothoracic leg beyond the femur, and the left metathoracic leg is detached at the trochanter.



**FIGURES 35–42.** *Anoplischipsis divisus* Schwarz. Figure 35: lectotype labels; Figure 36: paralectotype labels; Figure 37: lectotype habitus, dorsal; Figure 38: paralectotype habitus, dorsal; Figure 39: paralectotype habitus, ventral; Figure 40: paralectotype habitus, lateral; Figure 41: aedeagus, dorsal; Figure 42: aedeagus, ventral. Scale bar, 0.25 mm.

Description of lectotype. General body shape (Figure 37) elongate, convex, tapered posteriorly. Length 6.0 mm, width 1.75 mm. Cuticle yellowish brown; vertex of head dark brown; pronotum with a pair of longitudinal dark brown bands astride midlength, together covering about half of pronotum, fused on basal declivity, narrowly separated along midlength anterad basal declivity, widened anteriorly on left side of pronotum; elytral intervals 6–8 from humerus to about level of abdominal ventrite 4, and less distinctly anterior declivity of elytra, dark brown;

antennae yellowish brown; legs yellow; setae yellowish brown, slightly paler ventrally. Setae hair-like, semierect dorsally, appressed ventrally, about three frontal puncture diameters long, directed posteriorly except as noted.



**FIGURES 43–46.** *Anoplischiopsis divisus* Schwarz, paralectotype. Figure 43: head and pronotum, lateral; Figure 44: hypomerite, anterior to the left; Figure 45: metacoxal plate; Figure 46: female genitalia. Abbreviations: bc—bursa copulatrix; cg—colleterial gland; d—diverticulum.

**Head.** Frons evenly convex, punctures shallow, circular, umbilicate, contiguous throughout; frontoclypeal carina in dorsal aspect transverse, linear, not prominent at midlength, in lateral aspect carina not visible between antennal sockets, in anterior aspect carina directed ventromesally above antennal sockets, transverse and linear, weakened and not projecting between antennal sockets; setae directed anteriorly. Frontoclypeal region narrow, one puncture diameter high at midlength of head, punctures and setae as on frons. Eyes small; ocular index 60. Antenna filiform, reaching to about level of mesocoxal cavity; secondary sexual setae present on antennomeres 4–11; antennomere 2 short, globular; antennomere 3 short, subtriangular; antennomeres 3–11 flattened; antennomeres 4–10 subtriangular, cuticle densely punctured, subshiny.

**Prothorax.** Pronotum convex, slightly longer than wide (midlength x midwidth 1.75 x 1.25 mm); hind angles divergent, with sharp carina diverging from lateral margin, extending from apex to anterior margin of basal declivity; basal sublateral incisures absent; lateral punctures as on frons, grading to half that size and separated by about own diameters posteromesally; lateral pronotal carina reaching anterior margin. Hypomerite (as in Figure 44) with femoral groove deep; mesal margin with smooth raised border and submarginal groove; anteromesal angle raised, excavate, ventral surface projecting over excavation, carinate, lateral pronotal carina and anteromesal carina meeting anterior margin at same point; posterior margin with broadly rounded projection; cuticle punctate anterad anterior margin of procoxal cavities, anterior punctures as on lateral pronotum, grading to less dense posteriorly; setae directed anteriorly. Prosternum convex; anterior lobe directed anteroventrally, distinctly limited posteriorly by transverse groove; anterior and mesal margins of procoxal cavity raised, thickened, smooth and shiny; punctures and setae as on hypomerite except punctures smaller posteriorly. Prosternal intercoxal process dorsoventrally flattened, subcircular in cross section, ventral surface concave posterad procoxae (as in Figure 43); ventral surface slightly narrower and shorter than dorsal surface, apex rounded; dorsal surface slightly projecting laterally; punctures same size as posterior prosternal punctures, almost contiguous, setae directed anteriorly.

**Pterothorax.** Scutellar shield slightly concave, angled anteroventrally on same plane as anterior declivity of

elytra; anterior margin convex in dorsal aspect, projecting shelf-like anteriorly; posterior margin truncate; punctures, cuticle and setae as on adjacent pronotum. Elytron length 4.0 mm; convex; apex probably conjointly rounded, but elytra asymmetrical: right elytron shorter than left; in dorsal aspect, apex of elytron serrate; anterior margin convex, slightly projecting; punctatostriate; strial punctures same size as scutellar punctures, separated by about own diameters basally, grading to separated by 2–3 times own diameters apically; intervals flat, roughened, punctures minute, moderately dense. Mesoventrite concave; coxal rests anterior; posterior intercoxal process declivous at 35–45° angle, ventral margin on same plane as mesocoxae and metaventrital anterior intercoxal process; in ventral aspect, lateral margins of mesoventrital cavity subparallel with low carina, posterior margin of cavity with secondary V-shaped notch at midlength of body; punctures subequal in size to midwidth hypomeral punctures, separated by less than half own diameters. Mesepisternum forming at best a very small part of anterolateral margin of mesocoxal cavity; flat; anterior margin with shallow marginal groove; punctures about same size as midwidth hypomeral punctures, almost contiguous, posterior cuticle glabrous and impunctate. Metaventrite convex; anterior intercoxal process flat; meso-metaventrital suture grooved; lateral punctures slightly smaller than midwidth hypomeral punctures, almost contiguous, grading to minute and separated by at least own diameters along midlength. Flight wings fully developed, not examined.

Legs. Prothorax: femur with shallow distal tibial groove; tibia with two tibial spurs and a few stout but inconspicuous setae on anterior margin; tarsus: tarsomere 2 with conspicuous, narrow ventrodiscal lobe, lobe not visible dorsally; tarsomere 3 with conspicuous wide ventrodiscal lobe, lobe visible dorsally; tarsomere 4 with posterior margin oblique. Mesothorax: trochantin visible, subglobular. Metathorax: metacoxal plate (as in Figure 45) widest mesad trochanteral condyle, slightly widened and rounded at trochanter-femur joint, then slightly narrowed laterally, relatively narrow laterad trochanteral condyle.

Abdomen with ventrite 5 triangular, slightly wider than long, apex bluntly pointed; punctures same size as lateral punctures of metaventrite, contiguous throughout. Aedeagus (Figures 41, 42); lateral lobes lightly pigmented anteriorly, not meeting along midlength.

Paralectotype. Colour paler and body slightly more robust than male (Figures 38–40). Length 6.0 mm, width 1.75 mm. Characters as in lectotype except as noted. Pronotum slightly more robust, less convergent anteriorly; arms of U-shaped pronotal vitta more widely separated along midlength, fading out in anterior half; carina of hind angles less divergent from lateral margin than in male. Left and right elytron same length, apex not serrate. Coxal rests of mesoventrite ventral. Mesepisternum forming small but distinct part of margin of mesocoxal cavity. Female genitalia (Figure 46). Ovipositor lightly pigmented, pigmentation restricted to lateral and anterior bar sclerites; apical styli present, elongate. Colleterial glands elongate (Figure 46, cg), subequal in length to bursa copulatrix; bursa copulatrix (Figure 46, bc); two globular spermatophores present; cuticle heavily spined with one posterior U-shaped cluster of long spines, an anterolateral pair of fan-shaped cluster of long spines, an anterior frond-shaped cluster of long spines, and a smaller dorsal longitudinal cluster of shorter spines at base of spermathecal duct; spines of U-shaped, fan-shaped and longitudinal clusters directed anteriorly, spines of frond-shaped cluster directed posteriorly; spermathecal duct arising dorsally, extending to posterior end of U-shaped cluster, but appears broken, with short, globular diverticulum at base (Figure 46, d).

Discussion. Schwarz (1898) compares *A. divisus* with *Anoplischiopsis flavovittatus* Champion. In comparison with my reference female of *A. flavovittatus* (compared with type), *A. divisus* has the antennae yellow, the pronotal vitta U-shaped, and the elytra yellow with parts of intervals 8 and 9 black. *A. flavovittatus* has the antennae black, the pronotal vitta goblet-shaped and widened anteriorly, and the elytra with intervals 1–3, 7–9 and the apex black. The bursa copulatrix of *A. divisus* probably is not distinguishable from *A. flavovittatus*.

### ***Anoplischius dorsalis* Schwarz (Figures 47–60)**

(Elaterinae, Ampedini, Dicrepidiina)

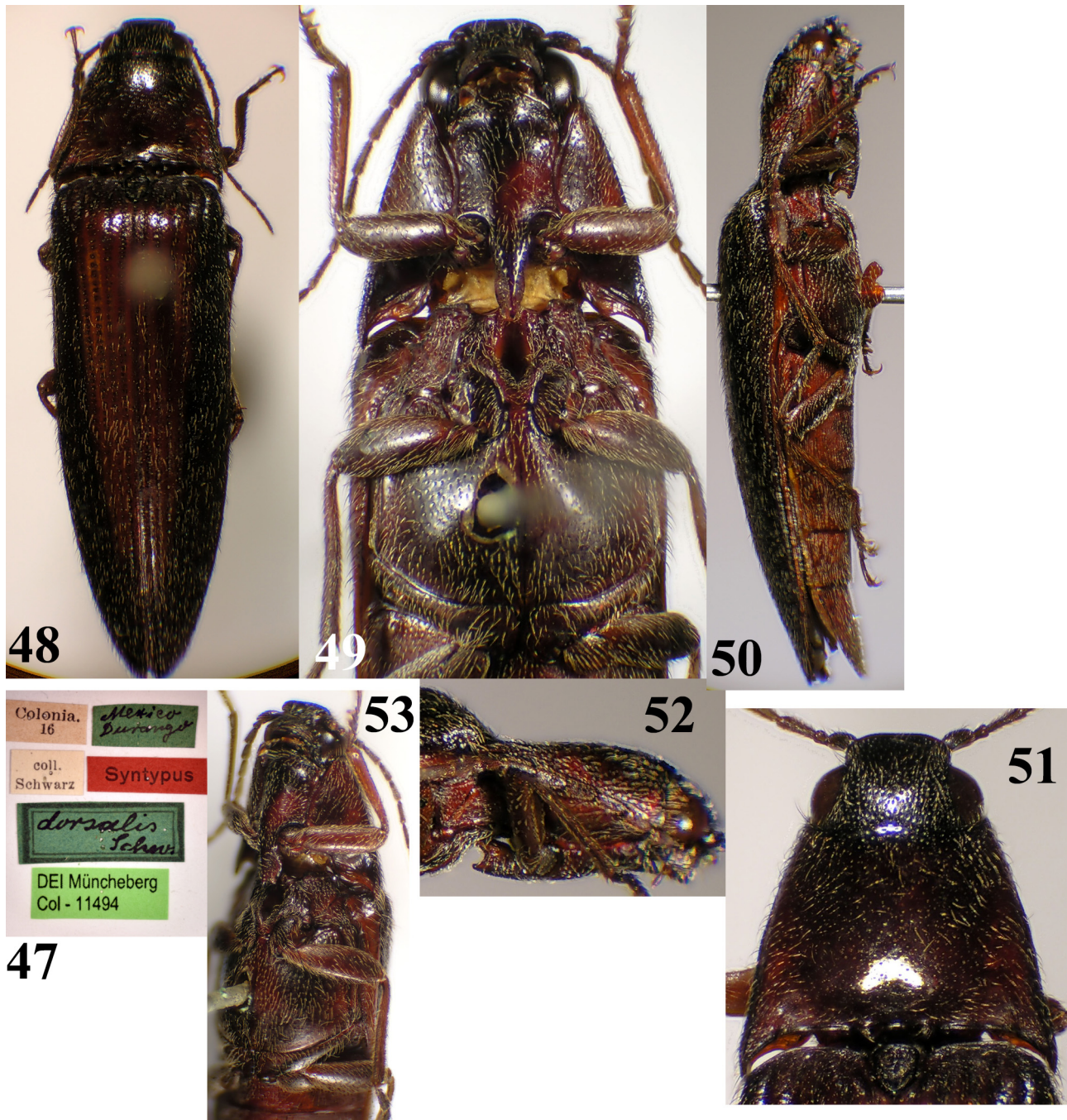
*Anoplischius dorsalis* Schwarz 1901a:310; type locality “Mexico, Durango”; male.

*Anoplischius dorsalis*, Schwarz 1906–1907:67; Schenkling 1925:79; Blackwelder 1944:297; Gaedike 1985:31.

Gaedike (1985) records one syntype, and I have examined one male syntype. Labels are shown in Figure 47. This specimen is here designated the lectotype. The lectotype is pinned through the right elytron and the underlying metaventrite is broken by the pin; verdigris is present around the pin. In the male genitalia, the posterior half of the



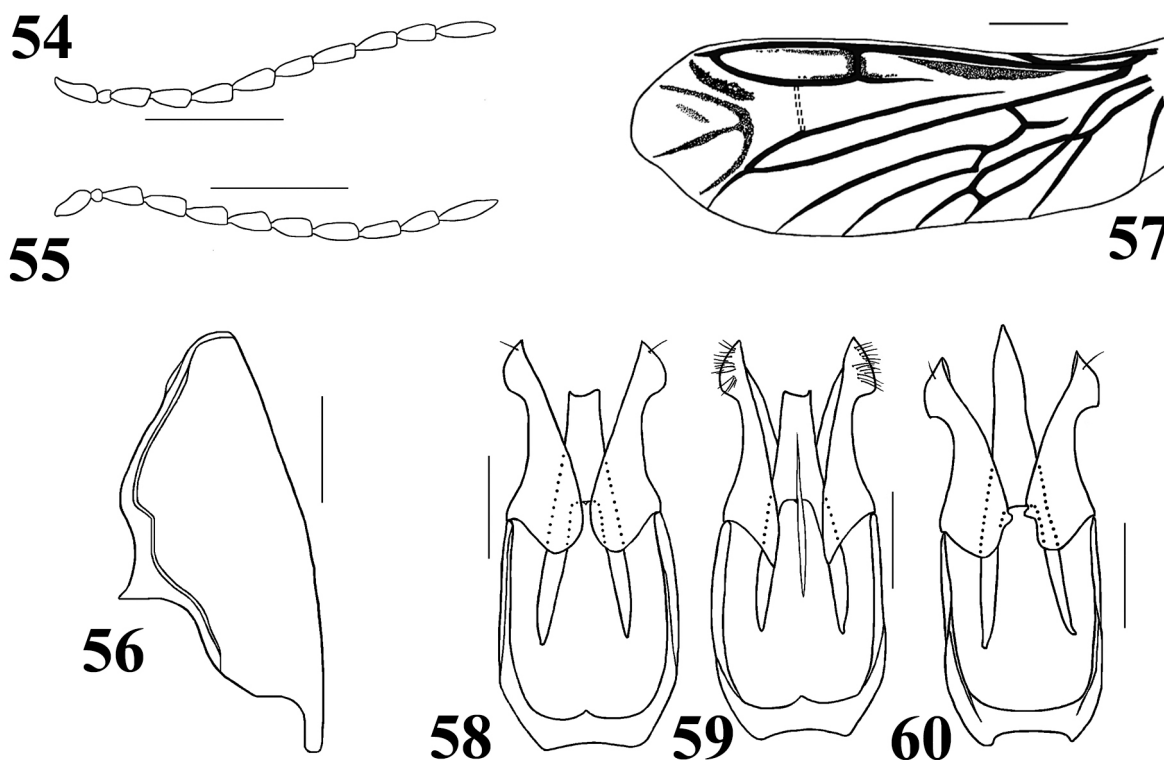
median lobe is missing (Figures 58, 59), and the dorsal and ventral surfaces of the right lateral lobe are separated at the apex.



**FIGURES 47–53.** *Anoplishius dorsalis* Schwarz, lectotype. Figure 47: labels; Figure 48: habitus, dorsal; Figure 49: head and thorax, ventral; Figure 50: habitus, lateral; Figure 51: head and pronotum, dorsal; Figure 52: head and pronotum, lateral; Figure 53: head and thorax, ventrolateral.

Description of Lectotype. General body shape (Figures 48, 50) elongate, robust, tapered anteriorly and posteriorly. Length 17.5 mm, width 4.5 mm. Head black; pronotum, antennomeres 1 and 2, ventral surface of thorax, and legs reddish suffused with black, abdomen paler; elytra reddish with anterior declivity, intervals 5–9 and apex heavily suffused with black; epipleuron yellowish red; antennomeres 3–11 brown; head setae pale yellowish-white, pronotal and elytral setae mixture of pale yellowish and black setae; leg setae mostly pale yellow with scattered black setae; ventral setae pale yellowish; cuticle smooth and shiny except as noted. Setae hair-like, about three midwidth frontal puncture diameters long, subappressed.

Head. Frons convex; punctures small posteriorly, anterior punctures about twice diameter of posterior punctures, circular, umbilicate, moderately deep, separated by about own diameters posteriorly, almost contiguous anteriorly; setae directed anteriorly; frontoclypeal carina in dorsal aspect subtruncate, thickened, smooth and shiny, in lateral aspect slightly projecting, directed anteriorly, in anterior aspect slightly curved ventrally, curvature flattened along midlength. Frontoclypeal region about 1.5 times as wide as high, slightly concave. Eyes slightly projecting laterad anterolateral pronotal angle (Figure 51); ocular index 50. Antenna (Figures 54, 55) slightly asymmetrical, reaching about midwidth of metaventrete; antennomeres 1 and 2 smooth and shiny; antennomeres 3–11 densely punctured, subshiny, flattened, with vague dark pigment line along line of articulation.



**FIGURES 54–60.** *Anoplischius dorsalis* Schwarz. Figure 54: lectotype left antenna; Figure 55: lectotype right antenna; Figure 56: hypomeron. Figure 57: wing venation; Figure 58: lectotype aedeagus, dorsal; Figure 59: lectotype aedeagus, ventral; Figure 60: aedeagus, dorsal, Guatemala specimen. Scale bar, Figures 54, 55, 57: 2.0 mm; Figure 56: 1.0 mm; Figures 58–60: 0.5 mm.

Prothorax. Pronotum convex, broadly flattened; in dorsal aspect (Figure 51) wider than long, cuneiform, lateral margins strongly convergent anteriorly; basal declivity poorly defined, vaguely canaliculate along midlength; hind angles divergent, apices inturned, with low sharp lateral carina subparallel to lateral margin, carina not extending anterad basal declivity; basal sublateral incisures deep, short, subquadrate; lateral and anterior punctures same size and density as posterior frontal punctures, grading to minute and separated by two or more times own diameters along midlength; setae directed posterolaterally; lateral pronotal carina not connected to anterior margin of pronotum or apex of hind angles. Hypomeron (Figure 56) with femoral groove broad, shallow; mesal margin convex with glabrous and impunctate marginal border and submarginal groove; anteromesal angle narrowly excavate, ventral surface convex, thickened, projecting over excavation; anterior punctures same size and density as adjacent pronotal punctures, grading posteriorly to same size and density as midlength pronotal punctures; setae directed anteriorly. Prosternum convex, oblique and flat anterad procoxae; anterior lobe directed anteroventrally; margin of procoxal cavity thickened, smooth and shiny, with submarginal groove; punctures as on adjacent hypomeron. Prosternal intercoxal process (Figure 52) with ventral surface shallowly convex; robust, height posterad procoxae greater than midlength posterad procoxae, ventral apex projecting, smooth and shiny; in ventral aspect, ventral surface tapered posteriorly, dorsal surface slightly wider, lateral margins of dorsal surface projecting laterally; in lateral aspect, dorsal and ventral surfaces subequal in length; ventral surface with punctures grading to sparse posteriorly; setae directed anteriorly.

Pterothorax. Scutellar shield triangular, concave, angled anteroventrally on same plane as anterior declivity of elytra; anterior margin raised, thickened, projecting anteriorly; punctures same size and slightly denser than midlength pronotal punctures. Elytra long relative to pronotum (Figure 48), length 12.5 mm; apices dehiscent with small sutural tooth; convex, flattened along suture; punctato-striate, striae shallow, deeper and wider on anterior declivity; striae punctures separated by about own diameters; intervals flat, minutely, sparsely punctured; epipleuron with dorsal margin carinate and projecting laterally at apex. Mesoventrite with lateral wings shallowly concave; coxal rests anterior, bordered posteriorly by rounded carina; in lateral aspect, posterior intercoxal process slightly elevated above mesocoxae, ventral surface shallowly declivous anteriorly between mesocoxae, gradually and shallowly (about 45°) declivous at anterior margin of mesocoxal cavity; in ventral aspect, posterior intercoxal process with lateral margins convergent posteriorly, posterior margin on same level as metaventrital anterior intercoxal process; meso-metaventrital suture grooved; mesoventrital cavity with lateral margins slightly convex, posterior end broadly V-shaped; punctures variable in size and density, up to twice size of prosternal punctures and separated by up to own diameters. Mesepisternum forming anterolateral margin of mesocoxal cavity; anterior margin with narrow, transverse, shallow groove; lateral margin with deeper longitudinal groove. Metaventrite convex, flattened along midlength, depressed around mesocoxal cavities; anterior intercoxal process flat; anterolateral punctures subequal in size to prosternal punctures, grading to minute posteromesally, separated by 2–3 times own diameter throughout. Flight wing (Figure 57).

Legs. Prothorax: femur with tibial groove, dorsal and ventral margins of groove carinate distally, dorsal carina longer than ventral carina; tibia with two robust tibial spurs, cuticle with row of stout reddish setae; tarsus: tarsomeres 1, 2, 3 with ventrodistal lobe, lobe of tarsomere 1 short, narrow, lobes of tarsomeres 2 and 3 wider and longer, lobes of tarsomeres 2 and 3 visible in dorsal aspect, tarsomere 4 small, narrow, oblique distally, without obvious lobe. Mesothorax: trochantin visible, relatively large, subquadrate; tibia without stout spines; tarsus longer than protarsus. Metathorax: coxal plate with posterior margin gradually narrowing laterad trochanteral condyle (Figure 53), very slightly sinuate, almost obliterated laterally; punctures minute, separated by 1–3 times own diameter; tibia and tarsus as on mesothorax, except slightly longer.

Abdomen with ventrite 5 subtriangular, anterolateral cuticle depressed, basal width slightly greater than midlength, posterior margin broadly rounded, flat; punctures anteriorly same size and density as on metaventrite, grading to separated by about half own diameters posteriorly. Aedeagus (Figures 58, 59); lateral lobes with ventral anterior margin lightly pigmented; lateral lobes not meeting along midlength of aedeagus, ventral surface of lateral lobes narrower than dorsal surface; apical expansion of lateral lobes with one dorsal seta, 14 ventral setae.

Additional specimens examined: GUAT. BAJA VERAPAZ: 3 km s. Purulhá, 1677m; lt./lt. trap: montane forest, 31.v.–2.vi.2015, E. Fuller, W.Tyson//15° 12.951'N 90° 13.145'W 15-1 [16]. [same locality], 1650–1800m, beating: montane forest, 31.v.–2.vi.2015, E. Fuller, W.Tyson //15° 12.951'N 90° 13.145'W 15-2 [1]. [same locality], 1650–1800m, lt./lt. trap montane forest, 4–6.vi.2017; E. Fuller//[same latitude and longitude]; 17–18 [10]. [same data except:] beating: montane forest, 17–19A [1]. [same locality], 1658m, light: montane forest, 27–30.vi.2012; E. Fuller//15° 12.985'N 90° 13.142' W, 12–19 [2]. [same locality], 1658m, light trap: montane forest, 27–30.vi.2012; E. Fuller//15° 12.985'N 90° 13.142' W, 12–20 [1]. [same locality], 1676m, light/lt. trap, 12–14.vi.2013; E. Fuller//15° 12.96'N 90° 13.15' W, 13–12 [3]. GUAT. BAJA VERAPAZ: 5 km s. Purulhá, 1645m, lt./lt.trap: montane forest, 25–26.v.2017; E. Fuller//15° 12.539'N 90° 12.328' W, 17–12 [2]. These specimens represent a new country record for Guatemala.

Discussion. Schwarz (1901a) does not compare *A. dorsalis* with other species, stating only that it belongs in Section I of Candèze. In the key to *Anoplischius* species in Candèze (1859), *A. dorsalis* keys more or less to *A. castaneipennis* Candèze, 1859. I have examined the probable lectotype of this species in the Natural History Museum, London, and do not believe it is conspecific with *A. dorsalis*. In the key to *Anoplischius* species in Champion (1895), *A. dorsalis* keys to couplet b''' [character state interpretations: antennomeres 3 and 4 subequal in length; antennomeres densely punctate throughout; anteromesal angle of hypomeron excavate; prothorax partly rufous], but does not satisfy either part of couplet c4/d4. The elytral setae are a mixture of black and yellowish setae in *A. dorsalis*, not uniform in colour (c4) and not paler laterally and mesally (d4). *A. dorsalis* can be recognized by the cuneiform pronotum and mixed black and yellowish dorsal setae.

The series from Guatemala exhibits pronounced variation in several characters. Only one specimen has an elytral colour pattern like the lectotype. The other specimens grade from uniformly shiny black to light brown. One specimen has the pronotum dark red. The length of antennomeres 3, 4 and 5 are variable. Most female specimens

have antennomeres 3–5 each subequal in length to antennomere 6; male specimens vary from antennomere 3 shorter than antennomere 6 to antennomeres 3–5 each distinctly longer than antennomere 6. On the lectotype, antennomeres 3–5 are each subequal to antennomere 6 on the left antenna (Figure 54), and each slightly longer than antennomere 6 on the right antenna (Figure 55). Antennae are shorter in most female specimens, but the absolute length is variable in both sexes. The prosternal intercoxal process is robust in all specimens, but the posterior notch between the dorsal and ventral apices varies from V-shaped to U-shaped, and the ventral surface grades from convex to horizontal (the lectotype is about mid-range in the grade, Figure 52). The mesoventral posterior intercoxal process grades from horizontal to gradually declivous anteriorly, and from slightly raised above the mesocoxae to slightly depressed below the mesocoxae in lateral aspect. When I sorted specimens to morphospecies for identification, specimens of *A. dorsalis* were placed with specimens of *Atractosomus* Lacordaire if the posterior intercoxal process was horizontal, and with specimens of *Anoplischius* Candèze if the posterior intercoxal process was declivous. As I accumulated more specimens, these character states intergraded, and it was not possible to distinguish *Atractosomus* from *Anoplischius* based on this species. The lateral lobes of the aedeagus are variable in shape: the mesal margin is straight or angled; the dorsal anterior margin is variably produced, straight or angled; the apex of the apicolateral expansion is variably produced posteriorly and variably convex laterally; the intact aedeagus of a specimen from Guatemala is illustrated (Figure 60).

### ***Atractosomus nigerrimus* Schwarz (Figures 61–70)**

(Elaterinae, Ampedini, Dicrepidina)

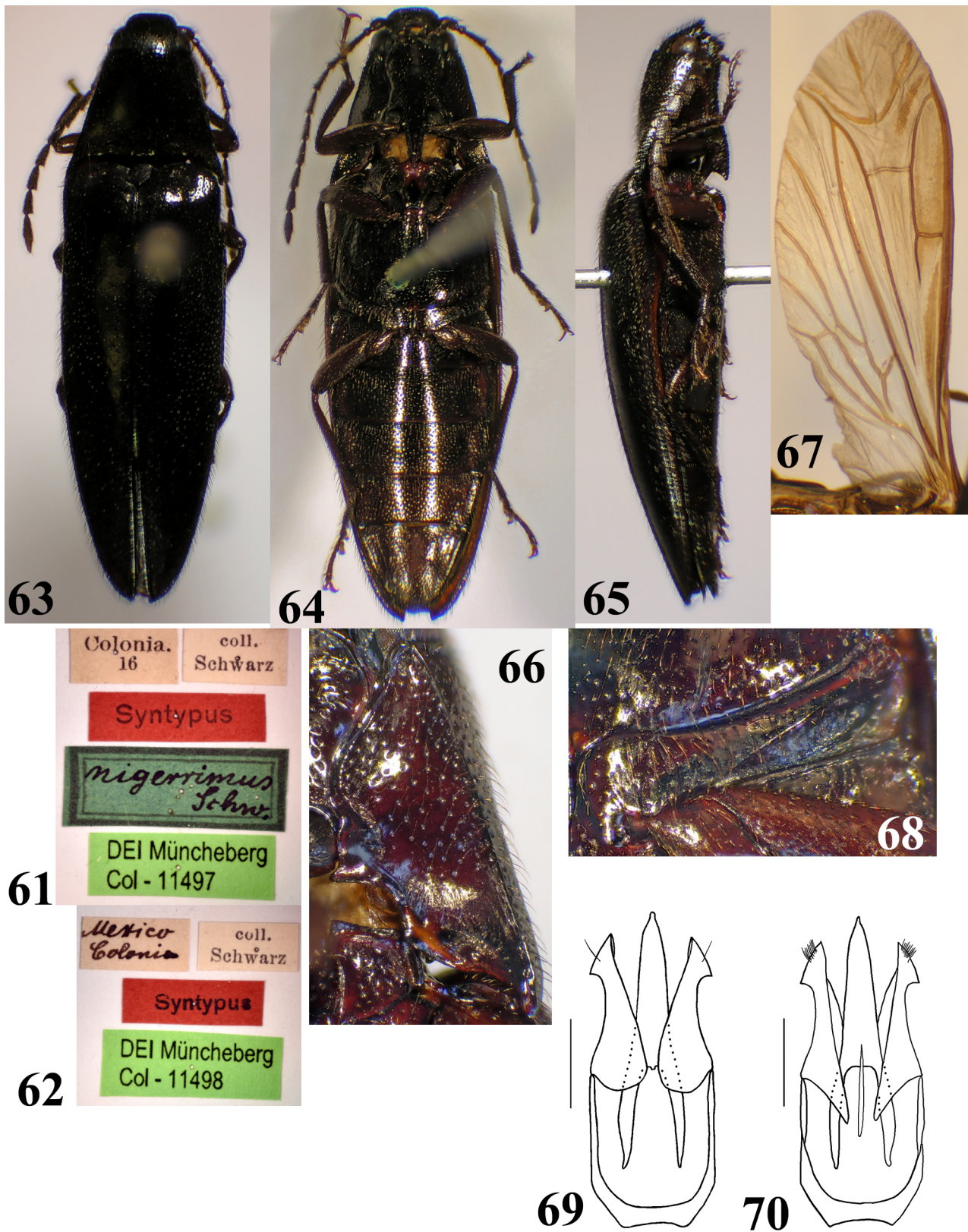
*Atractosomus nigerrimus* Schwarz 1901a:312; type locality: “Mexico, Colonia”; sex not indicated.

*Atractosomus nigerrimus*, Schwarz 1906–1907:76; Schenkling 1925:86; Blackwelder 1944:299; Gaedike 1985:50.

Gaedike (1985) records two syntypes, and I have examined two male syntypes. Labels are shown in Figures 61, 62. These specimens are here designated the lectotype (Figure 61) and paralectotype (Figure 62). From the description of *Smiliceroides quadrilineatus* (Schwarz) and the labels of *Anoplischius dorsalis* (Figure 47), the type locality, “Colonia”, is inferred to be in the State of Durango. Both syntypes are pinned through the right elytron with a secondary pin hole in the right elytron and verdigris. In the lectotype, left protarsomeres 4 and 5 are missing.

Description of lectotype. General body shape (Figures 63–65) elongate, robust, tapered anteriorly and posteriorly. Length 13.0 mm, width 3.5 mm. Head, pronotum and elytra reddish black; ventral surface including legs dark red; epipleuron red; antennomeres 3–11 dark brown; dorsal setae black, ventral setae light yellowish brown; cuticle smooth and shiny except as noted. Setae hair-like, about four frontal puncture diameters long except as noted, semierect on dorsal surface, more appressed on ventral surface, directed posteriorly except as noted.

Head. Frons convex between eyes, broadly transversely concave anterad eyes; punctures small, circular, umbilicate, moderately deep, separated by about own diameters, in anterior concavity of frons punctures closer and arranged in five to six diagonal rows; setae directed anteriorly; frontoclypeal carina in dorsal aspect subtruncate, thickened, smooth and shiny, in lateral aspect slightly projecting, directed anteroventrally, in anterior aspect slightly curved ventrally, curvature flattened along midlength. Frontoclypeal region about 1.5 times as wide as high, slightly concave; punctures same size and shape as frontal punctures, not as obviously umbilicate, almost contiguous; setae as on frons, directed anteroventrally. Eyes: ocular index 63. Antenna at rest reaching about posterior margin of metaventrite; filiform; antennomeres 1 and 2 smooth and shiny; antennomeres 3–11 densely punctured, subshiny, flattened, with vague dark pigment line along line of articulation; antennomere 2 small, subglobular; antennomere 3 subtriangular, about 1.5 times as long as distal width, longer and wider than antennomere 4; antennomeres 4–6 subrectangular, about 1.5 times as long as distal width; antennomeres 7–10 subtriangular, about 1.5 times as long as distal width.



FIGURES 61–70. *Atractosomus nigerrimus* Schwarz, Figures 61, 63–68: lectotype, Figures 62, 69, 70: paralectotype. Figures 61, 62: labels; Figure 63: habitus, dorsal; Figure 64: habitus, ventral; Figure 65: habitus, lateral; Figure 66: hypomeron; Figure 67: metathoracic wing; Figure 68: metacoxal plate; Figure 69: aedeagus, dorsal; Figure 70: aedeagus, ventral. Scale bar, 0.5 mm.

Prothorax. Pronotum convex, broadly flattened; in dorsal aspect, slightly wider than long (midwidth x midlength 2.75 x 2.25 mm), cuneiform; basal declivity poorly defined, vaguely canaliculate along midlength; hind angles divergent, apices inturned, sharply carinate, carina lateral, subparallel to lateral margin, length about half midlength of pronotum from posterior margin; basal sublateral incisures deep, short, subquadrate; lateral punctures same size and density as frontal punctures, grading to minute and separated by two or more times own diameters along midlength; lateral pronotal carina meeting anterior margin. Hypomeron (Figure 66) weakly convex, femoral groove broad, shallow; mesal margin with glabrous and impunctate marginal border and submarginal groove, smooth border becoming about three times wider around procoxal cavities; anteromesal angle narrowly excavate, lateral margin of excavation convex, thickened, projecting over excavation; posterior margin with posterolateral angle projecting; anterior punctures same size and density as adjacent pronotal punctures, grading posteriorly to same size and density as midlength pronotal punctures; setae directed anteriorly. Prosternum convex, flattened along midlength, concave anterad procoxae; anterior lobe directed anteriorly; margin of procoxal cavity thickened, smooth and shiny, with submarginal groove; punctures as on adjacent hypomeron. Prosternal intercoxal process with ventral surface shallowly convex (Figure 65); robust, height posterad procoxae greater than midlength posterad procoxae, ventral apex projecting, smooth and shiny; in ventral aspect, ventral surface tapered posteriorly, dorsal surface slightly wider, lateral margins of dorsal surface projecting laterally, carinate; in lateral aspect, dorsal surface slightly longer than ventral surface; ventral surface with punctures grading to sparse posteriorly, setae directed anteriorly.

Pterothorax. Scutellar shield triangular, concave, angled anteroventrally on same plane as anterior declivity of elytra; anterior margin slightly convex, projecting anteriorly; posterior end bluntly pointed; punctures same size and slightly denser than midlength pronotal punctures. Elytra long relative to pronotum (Figures 63, 65), length 10.0 mm; apices dehiscent with small sutural tooth; convex, flattened along suture; minutely, moderately densely punctate, sutural and stria 9 impressed to apex, other striae not impressed, anterior declivity with two anteriorly convergent longitudinal shallow grooves; strial and interval punctures subequal in size; intervals flat; epipleuron with dorsal margin projecting laterally at apex. Mesoventrite with lateral wings shallowly concave; coxal rests ventral, bordered posteriorly by rounded carina; in lateral aspect, posterior intercoxal process thickened, distinctly elevated above mesocoxae, ventral surface shallowly declivous anteriorly between mesocoxae, abruptly and steeply (about 80°) declivous at anterior margin of mesocoxal cavity; in ventral aspect, posterior intercoxal process with lateral margins convergent posteriorly, posterior margin on same level as metaventrital anterior intercoxal process; meso-metaventrital suture visible, not grooved; mesoventrital cavity with lateral margins slightly convex, posterior end broadly V-shaped; punctures variable in size and density, up to twice size of prosternal punctures and separated by up to own diameters. Mesepisternum forming anterolateral margin of mesocoxal cavity; anterior margin with narrow, transverse, shallow groove; lateral margin with deeper longitudinal groove; punctures, cuticle and setae as on mesoventrite. Metaventrite convex, flattened along midlength, depressed around mesocoxal cavities; anterior intercoxal process angled anteroventrally; punctures minute, separated by 3–4 times own diameter throughout. Flight wing (Figure 67).

Legs. Prothorax: femur with dorsal and ventral margins of tibial groove carinate distally, dorsal carina longer than ventral carina; tibia with two robust tibial spurs, anterior margin with row of shorter, stouter setae; tarsus: tarsomeres 1, 2, 3, and 4 with ventrodiscal lobe, lobe of tarsomere 1 short, narrow, lobes of tarsomeres 2 and 3 wider and longer, lobe of tarsomere 2 not visible in dorsal aspect, lobe of tarsomere 3 visible in dorsal aspect, lobe of tarsomere 4 very small, narrow. Mesothorax: trochantin visible, transversely subrectangular; femur as on profemur; tibia as on protibia except slightly longer; tarsus as on protarsus except longer. Metathorax: coxal plate (Figure 68) widest mesad trochanteral condyle, posterior margin gradually narrowing laterad trochanteral condyle, very slightly sinuate, almost obliterated laterally; femur, tibia and tarsus as on mesothorax, except slightly longer.

Abdomen with ventrite 5 subtriangular, anterolateral cuticle depressed; basal width slightly greater than midlength; posterior margin broadly rounded, flat; punctures anteriorly same size and density as on metaventrite, grading to separated by about half own diameters posteriorly. Genitalia not cleared.

Paralectotype: length 13.0 mm, width 3.5 mm. Characters as in lectotype. Aedeagus (Figures 69, 70); lateral lobes with ventral anterior margin lightly pigmented; ventral surface of lateral lobes narrower than dorsal surface, dorsomesal margin visible in ventral aspect; apical expansion of lateral lobes acute anterolaterally, with one dorsal seta, 11 ventral setae, dorsal seta about twice as long as ventral setae.

The species can be recognized by its shiny, black cuticle, black dorsal setae and cuneiform pronotum.

Additional specimen examined: GUATEMALA: HUEHUETENANGO: vic. Yulchen, 16° 02.212'N, 91°

27.896'W, 1600m, under bark, 10 Oct. 2017, E. Fuller [1 female, ERFC]. This female is larger and more robust than the lectotype and paralectotype males, with the dorsal margin of the pronotum on the same level as that of the elytra in lateral aspect (*c.f.* Fig. 65), but otherwise does not differ structurally from the syntypes. This specimen represents a new country record for this species. In comparison with the recently collected specimen, pigments of the type series of *A. nigerrimus* do not appear faded.

### ***Crepidius blepharipes* Schwarz (Figures 71–81)**

(Elaterinae, Ampedini, Dicrepidiniina)

*Crepidius blepharipes* Schwarz 1901a:311; type locality “Mexico, Durango”; male and female.

*Crepidius blepharipes*, Schwarz 1906–1907:64; Schenkling 1925:76; Blackwelder 1944:297; Gaedike 1985:22.

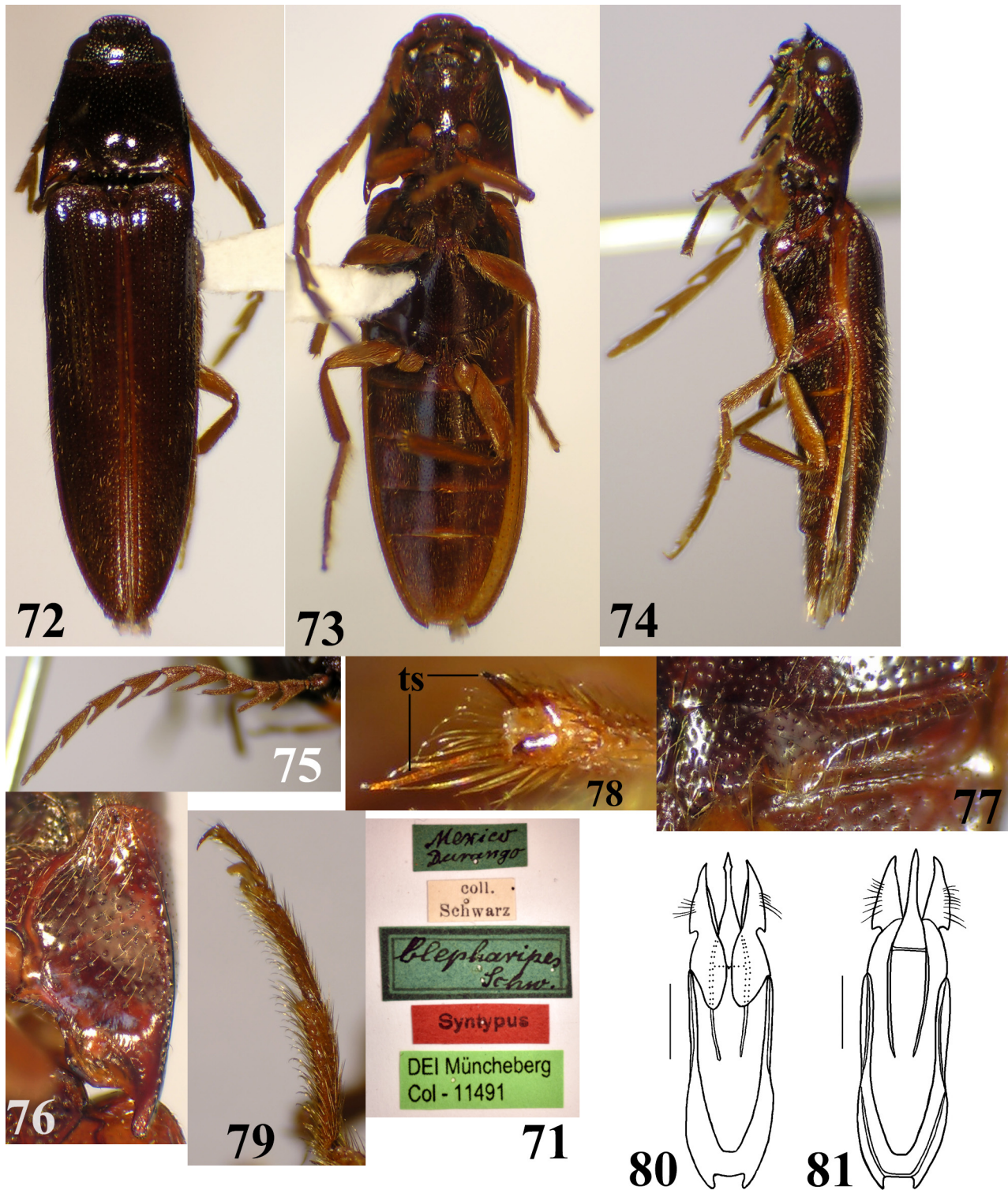
Gaedike (1985) records three syntypes, which I have examined. Schwarz (1901a) believed he had males and females of one species, but he misinterpreted the sex of his specimens. All three syntypes are males, and they are neither conspecific nor congeneric. *Crepidius* Candèze is defined by the presence of flabellate antennomeres in the male (Candèze 1891) and lack of diagonal carinae on the frontoclypeal region. The syntype with the determination label has these characters, and is designated the lectotype of *C. blepharipes*. Labels of the lectotype are shown in Figure 71. Left antennomeres 7–11, right protarsus, right mesotarsus, left mesotarsomeres 4 and 5, left metatarsus and the anterior margin of abdominal sternite 9 are missing. The prothorax is glued to the mesothorax.

Description of lectotype. General body shape (Figures 72–74) elongate, narrow, subparallel. Length 11.5 mm, width 3.0 mm. Head, thorax and abdominal ventrites brown, abdomen slightly paler; palpi, antennae, legs, medial surface of pronotal hind angles, elytral epipleura, mesepimeron and apex of abdominal ventrite 5 brownish-yellow; elytra brown grading to yellowish brown apically, sutural interval paler, cuticle with faint metallic green lustre; setae pale yellow throughout; cuticle smooth and shiny except as noted. Setae hair-like, length as noted, directed posteriorly except as noted.

Head. Frons flat posterad midwidth of eye, shallowly longitudinally concave and slightly sinuate anterad midwidth of eye, with transverse crest at anterior margin of eye; frontoclypeal carina with margin thin, in dorsal aspect unevenly convex, mesal 3/5 more convex than each lateral 1/5, in lateral aspect projecting anteroventrally (Figure 74), in anterior aspect slightly curved ventrally; punctures shallow, umbilicate, moderate-sized, separated by about own diameters except slightly larger, linear and almost contiguous along frontoclypeal carina; most setae lost, remaining setae of two sizes: smaller, finer setae about three puncture diameters long, and larger, thicker setae about 4–5 puncture diameters long, setae semierect. Frontoclypeal region slightly higher than wide, surface flat; punctures subequal in size to anterior row of frontal punctures, shallow, not obviously umbilicate, almost contiguous; antennal sockets large, each about 1/3 total width between eyes in anterior aspect, bordered on all sides by distinct groove. Eyes: ocular index 56. Antenna (Figure 75) at rest reaching almost to posterior margin of abdominal ventrite 4; antennomeres 1 and 2 shiny, antennomeres 3–11 dull; antennomeres 3–11 flattened, finely densely punctured; antennomeres 3–10 with secondary sexual setae and scattered black setae.

Prothorax. Pronotum convex, broadly flattened; in dorsal aspect, wider than long (midwidth x midlength 2.75 x 2.0 mm), subcuneiform; hind angles divergent, incurved at apex, carinate, carina sharp, directed anteromesally, divergent from lateral pronotal carina, extending anteriorly to anterior margin of basal declivity; basal sublateral incisures deep, subquadrate; basal declivity shallowly canaliculate along midlength, posterior surface of pronotum concave from apex of hind angles to antescutellar notch; punctures subequal in size and shape to frontal punctures, separated by about own diameters laterally, grading to separated by 2–3 times own diameters at midlength; most setae lost, remaining setae as on frons; lateral pronotal carina strongly convex dorsally, reaching anterior margin. Hypomeron (Figure 76) with femoral groove broad, deep; mesal margin with broad smooth marginal border and submarginal groove, smooth border with 2–3 punctures and setae; anteromesal angle shallowly excavated, margin slightly raised with short carina; punctures about same size and shape as pronotal punctures, separated by about own diameters anteriorly, grading to about twice own diameters posteriorly; setae same size and shape as long frontal setae, directed more or less anterolaterally. Prosternum convex, longitudinally sinuate; anterior lobe directed anteroventrally; anterior and mesal margins of procoxal cavity thickened, smooth and shiny; cuticle between procoxae concave; punctures same size as hypomeran punctures, separated by about half own diameters; setae same size as hypomeran setae. Prosternal intercoxal process elongate, about three times as long as width posterad

procoxae; more or less T-shaped in cross section, dorsal surface about four times as wide as ventral surface; ventral surface reduced to narrow rounded ridge; ventral surface about 3/4 length of dorsal surface, apex rounded, not projecting; ventral surface punctate and setose to apex, setae as on prosternum.



**FIGURES 71–81.** *Crepidius blepharipes* Schwarz, lectotype. Figure 71: labels; Figure 72: habitus, dorsal; Figure 73: habitus, ventral; Figure 74: habitus, lateral; Figure 75: antenna; Figure 76: hypomeron; Figure 77: metacoxal plate; Figure 78: metatibial spurs; Figure 79: metatarsus; Figure 80: aedeagus dorsal; Figure 81: aedeagus, ventral. Abbreviation: ts—tibial spur. Scale bar, 0.5 mm.



Pterothorax. Scutellar shield flat; angled anteroventrally at same angle as anterior declivity of elytra; anterior margin directed anteriorly, elevated above adjacent elytron, slightly convex in dorsal aspect; posterior margin rounded; punctures and setae as on adjacent pronotum. Elytra long relative to body (Figure 72), length 8.5 mm; apices dehiscent, with very small tooth at level of sutural interval; asymmetrical: right elytron longer than left; convex; punctate, shallowly striate basally, indistinctly striate apically, only sutural and stria 8 reaching apex; stria punctures small, separated by 2–4 times own diameters; sutural interval flat in anterior half, angled dorsomesally in posterior half, other intervals flat; interval punctures minute, moderately dense; about half of setae lost, remaining setae as in remaining pronotal setae. Mesoventrite with lateral wings angled dorsolaterally, shallowly concave; coxal rests anterior, open laterally; posterior intercoxal projection subquadrate, gradually declivous (ca. 30°), posterior margin elevated above mesocoxae in lateral aspect, on about same level as metaventrital anterior intercoxal projection, posterior margin rounded with small V-shaped median notch; margins of mesoventrital cavity convex, not raised, narrowed between mesocoxae, posterior margin narrowly U-shaped; punctures about twice size of prosternal punctures, deeper than prosternal punctures, almost contiguous; setae same size as prosternal setae. Mesepisternum forming small anterolateral part of margin of mesocoxal cavity; anterior margin shallowly transversely grooved in mesal half, obliquely grooved in lateral third, grooves separated by thickened, smooth and shiny cuticle, lateral groove punctate and setose, mesal groove glabrous and impunctate, cuticle more or less punctured throughout, punctures and setae as on mesoventrite. Metaventrite convex, flattened along midlength; anterior intercoxal projection convex ventrally, elevated above mesocoxae; meso-metaventrital suture deeply grooved; anterolateral punctures same size and structure as on prosternum, grading to minute posteromesally; setae as on prosternum. Flight wings fully developed, not examined.

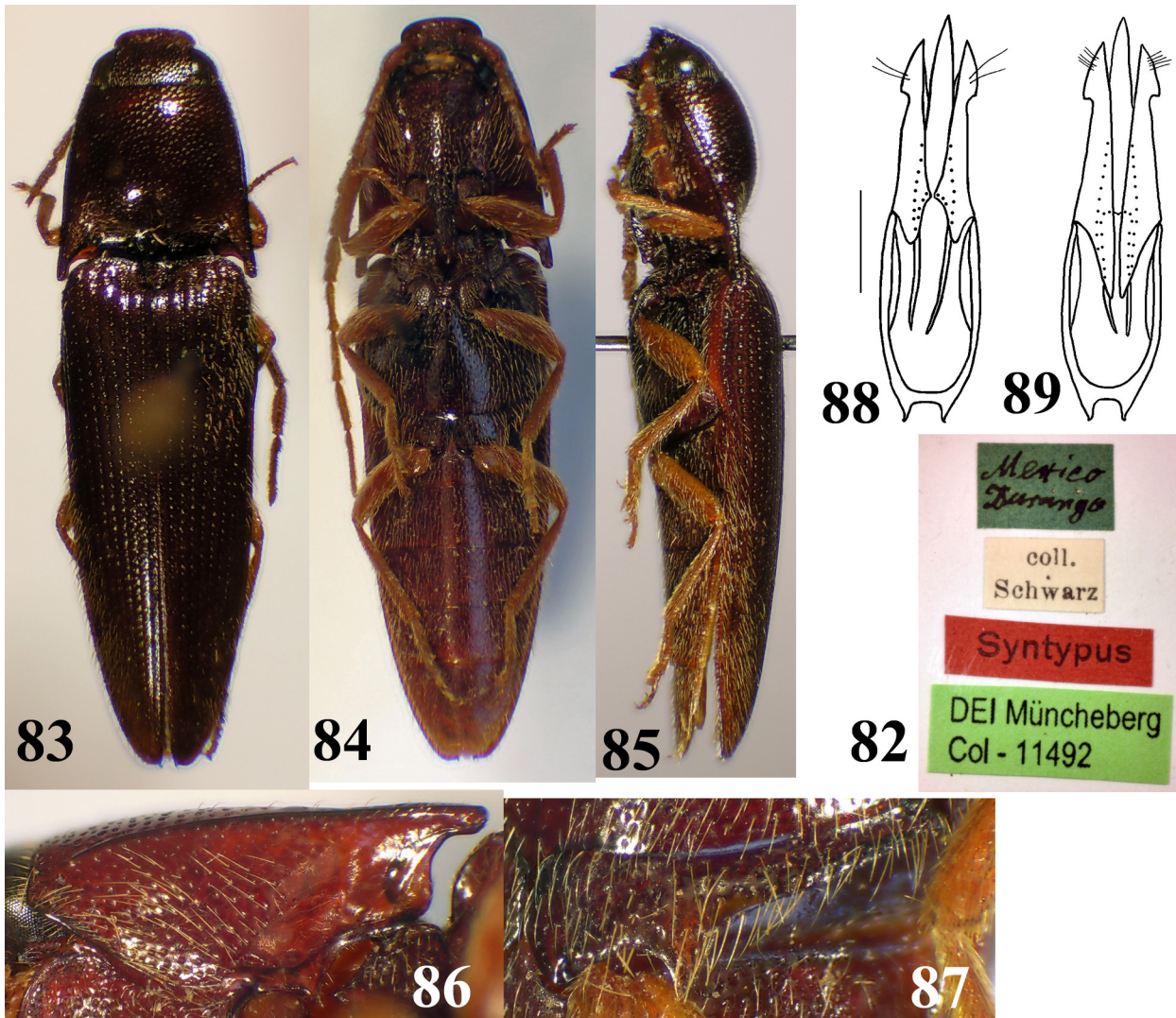
Legs. Prothorax: tibia tapered proximally with two stout, acute tibial spurs, inner spur slightly finer, anterior margin with row of stout reddish spines; tarsus: tarsomere 1 with very small ventrodiscal lobe; tarsomere 2 with large narrow ventrodiscal lobe, lobe only vaguely visible in dorsal aspect; tarsomere 3 with large wide ventrodiscal lobe, lobe visible in dorsal aspect, extending under tarsomere 4 and base of tarsomere 5; tarsomere 4 oblique and extending under base of tarsomere 5. Mesothorax: trochantin visible, somewhat T-shaped, wider laterally; tibia as on protibia except slightly longer; tarsus as on protarsus except longer, tarsomere 1 without ventrodiscal lobe. Metathorax: metacoxal plate (Figure 77) wider than long in mesal 1/3, posterior margin with small broad rounded tooth laterad trochanteral condyle, tooth with basal width longer than length, posterior margin gradually declivous laterad posterior tooth, slightly projecting posteriorly at lateral margin; tibial spurs asymmetrical, outer spur as on mesotibia, inner spur long, needle-like, about 2.5 times longer than outer spur (Figure 78); tarsus elongated: tarsomeres 1 and 2 each about twice as long as corresponding mesotarsomeres, with fringe of long ventral setae (Figure 79), setae about twice as long as body setae, curved at tip; tarsomere 1 without lobe; tarsomere 4 with very small ventrodiscal lobe.

Abdomen with ventrite 5 semielliptical, about as long as basal width, posterior margin rounded, slightly recurved dorsally, punctures same size as on metaventrite but denser, separated by about half own diameters anteriorly, grading to almost contiguous posteriorly; setae same size and shape as on metaventrite, denser at apex. Aedeagus (Figures 80, 81); lateral lobes with long apical expansion bearing five dorsal and eight ventral setae; ventral surface of lateral lobes unpigmented anterad apical expansion.

Discussion. I have not seen any other specimens. The long, needle-like metatibial spur (Figure 78) and long fringe of ventral setae on metatarsomeres 1 and 2 (Figure 79) are distinctive in *Crepidius*. *Dipropus denticornis* (Champion) from Guatemala also has a long needle-like metatibial spur; the ventral fringe of setae on metatarsomeres 1 and 2 are long in this species, but not as long as *C. blepharipes*.

The other two syntypes are unknown species of *Dipropus* Germar (Ampedini, Dicrepidini). Labels of syntype 2 are shown in Figure 82. The specimen is pinned through the right elytron; left antennomeres 6–11, distal end of left protarsomere 3, left protarsomeres 4 and 5, right mesotarsal claws and one left metatarsal claw are missing; left antennomeres 3–5, right antennomeres 3, 4, 7 and 11, protarsal ventrodiscal lobes and left mesotarsal ventrodiscal lobes and claws show dermestid damage.

Description of syntype 2. General body shape (Figures 83–85) elongate, narrow, tapered posteriorly. Length 11.0 mm, width 3.0 mm. Body and elytra uniformly reddish-brown; antennae and legs yellowish-brown, contrasting with body; setae pale yellowish-white except as noted; cuticle smooth and shiny except as noted. Setae hair-like, about 3–4 frontal puncture diameters long except as noted; setae directed posteriorly except as noted.



**FIGURES 82–89.** *Crepidius blepharipes* Schwarz, syntype 2. Figure 82: labels; Figure 83: habitus, dorsal; Figure 84: habitus, ventral; Figure 85: habitus, lateral; Figure 86: hypomerite, anterior to the left; Figure 87: metacoxal plate; Figure 88: aedeagus, dorsal; Figure 89: aedeagus, ventral. Scale bar, 0.5 mm.

**Head.** Frons convex between eyes, shallowly concave anterad eyes; frontoclypeal carina in dorsal aspect convex, in lateral aspect projecting, thin, directed anteroventrally, in anterior aspect slightly curved ventrally; punctures shallow, umbilicate, moderate sized, separated by less than half own diameters throughout; most setae lost, remaining setae of two sizes: fine, curved, about two puncture diameters long, and more robust, straight, 3–4 puncture diameters long; setae directed anteriorly. Frontoclypeal region subquadrate, punctures and setae as on frons except punctures contiguous; antennal sockets large, bordered by shallow groove on all sides, each socket about 1/3 width between eyes. Eyes: ocular index 56. Antenna at rest reaching posterior margin of abdominal ventrite 2; antennomere 2 small, wider than long, oval; antennomeres 3–11 flattened, cuticle densely, finely punctate with black setae mixed with white setae, line of articulation with dark pigment line; shape of antennomeres unknown.

**Prothorax.** Pronotum evenly convex, flattened along midlength, basal declivity shallowly canaliculate along midlength; slightly wider than long (midwidth x midlength 3.0 x 2.5 mm); hind angles weakly divergent, with lateral carina extending from apex of hind angles almost to anterior margin of basal declivity, subparallel to lateral pronotal carina; basal sublateral incisures deep, subquadrate; most setae lost; punctures as on frons except grading to minute on basal declivity; lateral pronotal carina weakly curved dorsally, separated from anterior margin by 2–3 punctures. Hypomerite (Figure 86); femoral groove broad, shallow; mesal margin with broad, smooth, mostly glabrous and impunctate border; anteromesal angle raised, excavate, carinate; anterior punctures as on adjacent

pronotum, grading to minute at anterior margin of femoral groove; setae directed anteriorly. Prosternum convex, longitudinally sinuate; anterior lobe directed anteroventrally; margin of procoxal cavity thickened, slightly raised; cuticle between procoxae slightly concave; punctures as on adjacent hypomeron. Prosternal intercoxal process elongate, length slightly more than twice width between procoxae; subtriangular in cross section; dorsal surface expanded laterally, in ventral aspect about three times wider than ventral surface; ventral surface rounded; in lateral aspect, ventral apex weakly knob-like, rounded, posterior margin stepped, ventral surface about 3/4 length of dorsal surface; ventral surface with punctures as on prosternum in anterior half, microstriate in posterior half.

Pterothorax. Scutellar shield subelliptical, flat; angled anteroventrally at slightly less angle than basal declivity of elytra, anterior margin slightly raised above adjacent elytra; anterior margin evenly convex, slightly projecting; posterior margin broadly rounded; punctures small, subumbilicate, separated by about own diameters. Elytra elongate, length 8.0 mm; apex subtruncate with very small sutural tooth; punctatostriate, sutural stria impressed for whole length, other striae impressed on basal declivity; strial punctures deep, circular, separated by about own diameters; intervals flat, punctures small, relatively sparse; most setae lost; epipleuron with dorsal carina projecting adjacent to abdominal ventrite 5. Mesoventrite with lateral wings slightly concave; coxal rests anterior; in lateral aspect posterior intercoxal process angled at about 45°, elevated above mesocoxae and metaventrite; in ventral aspect, posterior intercoxal process subequal in width to posterior margin of mesocoxa; lateral margins of mesoventral cavity convex, tapered posteriorly, posterior margin narrowly U-shaped; margins of cavity not raised posteriorly, slightly raised and carinate anteriorly; punctures and setae as on prosternum. Mesepisternum not forming part of margin of mesocoxal cavity; anterior margin with transverse marginal groove, groove divided at midlength by oblique carina arising from posterior margin of groove; sclerite punctate throughout, punctures and setae as on prosternum except setae directed more or less laterally. Metaventrite convex, flattened along midlength; meso-metaventral suture grooved; anterior intercoxal process convex; lateral punctures same size and structure as on prosternum, grading to minute posteromesally. Flight wings fully developed, not examined.

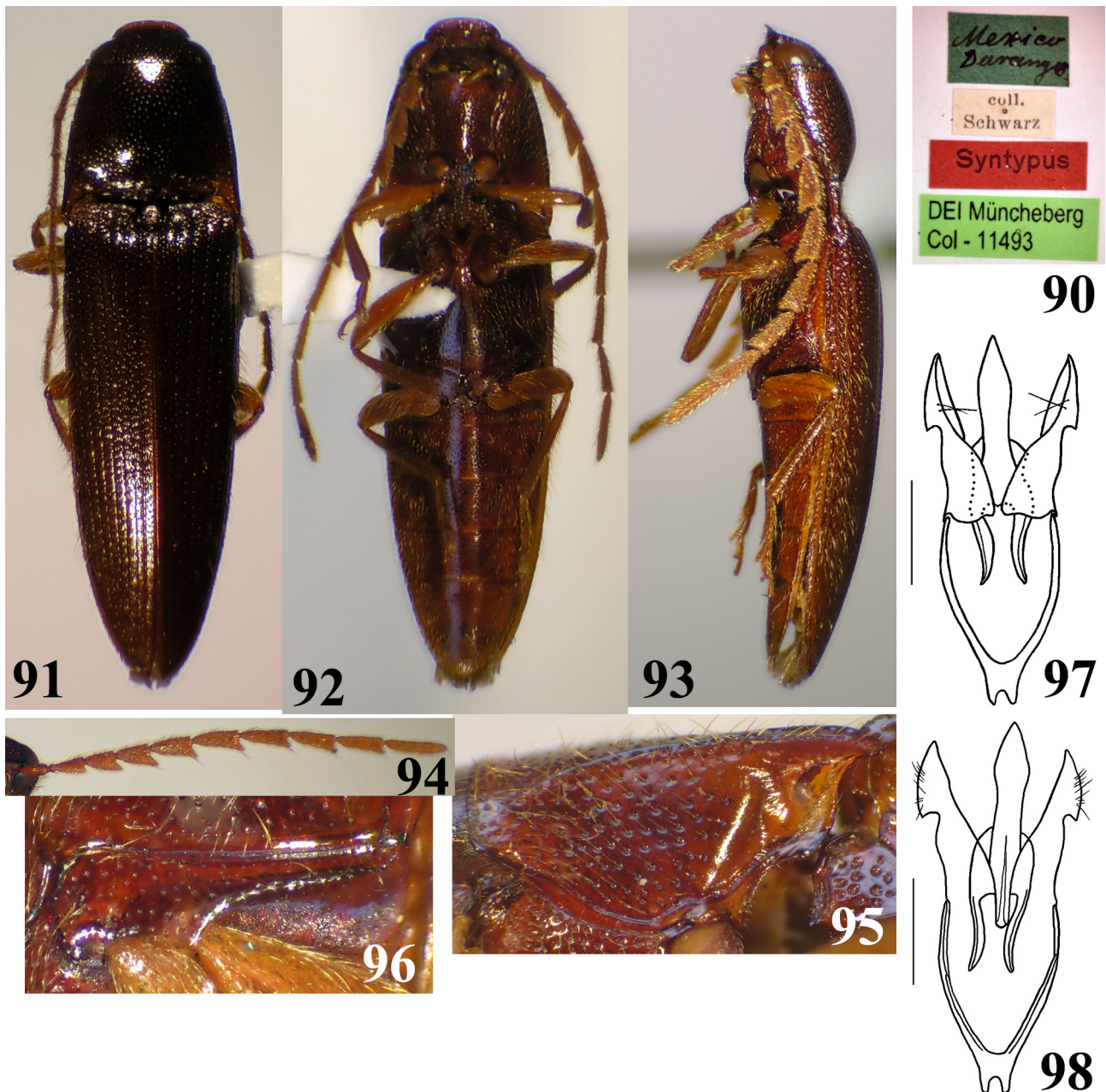
Legs. Prothorax: femur with dorsal and ventral margins of tibial groove carinate distally; tibia with two stout tibial spurs, surface opposite femoral groove with row of stout reddish setae; tarsus: ventrodiscal lobes not visible on tarsomeres 1, 2 and 3; tarsomere 4 with small ventrodiscal lobe. Mesothorax: trochantin visible, irregular in shape, wider laterally; tibia as on prothorax; tarsus longer than protarsus, tarsomeres 2, 3, and 4 with ventrodiscal lobes, lobes on tarsomeres 2 and 3 long and conspicuous in ventral aspect, lobe on tarsomere 4 very small, lobe on tarsomere 2 not visible dorsally, lobe on tarsomere 3 slightly visible dorsally. Metathorax: coxal plate (Figure 87) with mesal third slightly wider than long, posterior margin concave adjacent to trochanter and toothed adjacent to base of femur, tooth about as long as basal width, apex rounded, lateral 2/3 gradually narrowing until very narrow at lateral margin; tibia and tarsus as on mesothorax except longer.

Abdomen with ventrite 5 semioval, slightly shorter than basal width, posterior margin broadly rounded, very slightly recurved; punctures of ventrite 5 small, separated by about own diameters anteriorly, grading to almost contiguous posteriorly, setae more dense than ventrites 1–4. Aedeagus (Figures 88, 89); lateral lobes with apical expansion bearing three long dorsal setae and five shorter ventral setae; dorsal and ventral anterior extensions of lateral lobes lightly pigmented.

Labels of syntype 3 are shown in Figure 90. Left protarsus and mesotarsi are missing.

Description of syntype 3. General body shape (Figures 91–93) elongate, narrow, tapered posteriorly. Length 10.0 mm, width 2.5 mm. Head, thorax and elytra brown, elytra slightly paler apically; antennae, legs and abdominal ventrites yellowish-brown; setae pale yellowish throughout; cuticle smooth and shiny except as noted. Most dorsal setae lost; most remaining setae long, about four pronotal puncture diameters long, hair-like, directed posteriorly except as noted.

Head. Frons convex between eyes, shallowly concave anterad eyes; frontoclypeal carina in dorsal aspect convex, projecting, anterior margin thin and broad, in lateral aspect projecting anteroventrally, in anterior aspect transverse, linear; punctures shallow, moderate sized, umbilicate, separated by up to own diameters, lateral punctures in linear row adjacent to eye; remaining setae fine, erect, curved, about three puncture diameters long. Frontoclypeal region large, subquadrate, oblique, punctures same size and structure as frontal punctures, almost contiguous throughout; antennal sockets bordered by moderately deep grooves on all sides. Eyes: ocular index 50. Antennae (Figure 94) at rest reaching to about posterior margin of abdominal ventrite 2; antennomeres 3–11 flattened, cuticle densely, minutely punctured, dull, short secondary sexual setae present along distal and dorsal margins.



**FIGURES 90–98.** *Crepidius blepharipes* Schwarz, syntype 3. Figure 90: labels; Figure 91: habitus, dorsal; Figure 92: habitus, ventral; Figure 93: habitus, lateral; Figure 94: antenna; Figure 95: hypomeron, anterior to left; Figure 96: metacoxal plate; Figure 97: aedeagus, dorsal; Figure 98: aedeagus, ventral. Scale bar, 0.5 mm.

Prothorax. Pronotum convex, high point of pronotal curvature at anterior margin of basal declivity (Figure 93); slightly wider than long (midlength x midwidth 2.0 x 2.5 mm), subcuneiform, basal declivity very shallowly canaliculate along midlength; hind angles weakly divergent, apices inturned, with high, sharp, anteromesally directed lateral carina, carina not extending anterad basal declivity of pronotum; basal sublateral incisures deep, slightly longer than wide, bordered laterally by low carina; punctures subequal in size and structure to frontal punctures, separated by about own diameters on disc, slightly closer laterally; remaining setae thicker and longer than remaining frontal setae; lateral pronotal carina slightly curved dorsally, not reaching anterior margin by less than length of antennomere 3. Hypomeron (Figure 95) with anteromesal angle raised, excavate, carinate, carina overhanging excavation; mesal margin with smooth, glabrous and impunctate border and submarginal groove; femoral groove broad; posterolateral angle produced, apex inturned; punctures shallow, umbilicate, slightly larger than lateral

pronotal punctures, separated by about own diameters; setae about two puncture diameters long posteriorly, grading to about three puncture diameters long anteriorly, directed anteriorly. Prosternum convex; anterior lobe directed anteroventrally; margin of procoxal cavity raised, thickened, smooth and shiny; cuticle between procoxae concave; punctures and setae same size, structure and density as on hypomeron. Prosternal intercoxal process in ventral aspect with ventral surface about 1/3 width of dorsal surface; lateral margins of dorsal surface subparallel, darkly pigmented; apex of ventral surface bluntly pointed; in lateral aspect ventral surface terminating in small knob; punctures of ventral surface present to apex, setae as on prosternum except directed anteriorly.

Pterothorax. Scutellar shield angled anteroventrally at less of an angle than anterior declivity of elytra, anterior margin elevated above level of anterior declivity; anterior margin projecting anteriorly; posterior margin broadly rounded; punctures slightly smaller than discal pronotal punctures, separated by about own diameters; setae as in remaining pronotal setae. Elytra length 7.0 mm; apices dehiscent, rounded, with small tooth at level of sutural stria; convex, flattened along suture; punctato-striate, striae shallowly impressed; strial punctures about same size as pronotal punctures, separated by about own diameters; intervals flat, with small punctures separated by 2–3 times own diameters; most setae lost, remaining setae slightly longer than remaining pronotal setae. Mesoventrite with lateral wings concave; coxal rests anterior; posterior intercoxal process elevated above mesocoxae, declivous at about 45° to anterior margin of mesocoxal cavities; mesoventral cavity with lateral margins convex, slightly raised, posterior margin rounded; punctures and setae as on prosternum except setae longer. Mesepisternum forming small anterolateral part of mesocoxal cavity; anterior margin with narrow transverse groove, bordered posteriorly by low, rounded carina; cuticle punctured throughout, punctures larger than on prosternum, almost contiguous; setae as on prosternum. Metaventrite convex, flattened along midlength; meso-metaventral suture grooved; anterior intercoxal process on same level as mesocoxae; anterolateral punctures large, shallow, umbilicate, grading to minute along midlength and posterior margin, separated by about half own diameters anterolaterally, 1–2 times own diameters posteromesally; setae same size and structure as on mesoventrite. Flight wings fully developed, not examined.

Legs. Prothorax: femur with margins of tibial groove carinate distally; tibia with one stout tibial spur visible, margin opposite femur with row of short, stout, reddish setae; tarsus: tarsomere 2 with narrow ventrodiscal lobe, lobe not visible in dorsal aspect; tarsomere 3 with wide ventrodiscal lobe, lobe visible in dorsal aspect. Mesothorax: trochantin visible, irregular in shape, widened laterally; femur as on prothorax except flatter, anterior and posterior margins more convex; tibia with two stout tibial spurs, spurs subequal in size and structure, posterior row of stout setae more hair-like, less obvious; tarsus as on protarsus except tarsomere 1 longer. Metathorax: metacoxal plate (Figure 96) narrow and slightly tapering laterally in lateral half, abruptly widened at base of femur to bluntly pointed tooth, concave adjacent to trochanter; femur as on profemur, except slightly curved, anterior and posterior margins subparallel; tibia and tarsus as on mesothorax except longer.

Abdomen with ventrite 5 subtriangular, midlength subequal to basal width; posterior margin broadly rounded; punctures same size and structure as on midlength of metaventrite, separated by 1–2 times own diameters anteriorly, grading to almost contiguous posteriorly. Aedeagus (Figures 97, 98); basal struts foliaceous; lateral lobes with apical expansion bearing two long dorsal setae and nine long and short ventral setae, ventral surface of lateral lobes very lightly pigmented.

Discussion. I have not seen specimens that are conspecific with the syntypes. In Champion's (1895) key to *Ischiodontus* Candèze, 1859 (now a synonym of *Dipropus*), the two syntypes key to couplet g''' [character state interpretations: 3<sup>rd</sup> and 4<sup>th</sup> antennomeres subequal in length; mesosternum raised and obliquely declivous, pronotosternal sutures grooved], which leads to *Dipropus erythroderus* (Candèze), *D. melas* (Champion) and *D. rufiventris* (Champion). I have examined types of all three of these species, and the syntypes are not conspecific with any of them.

### ***Anchastomorphus minutus* Schwarz (Figures 99–106)**

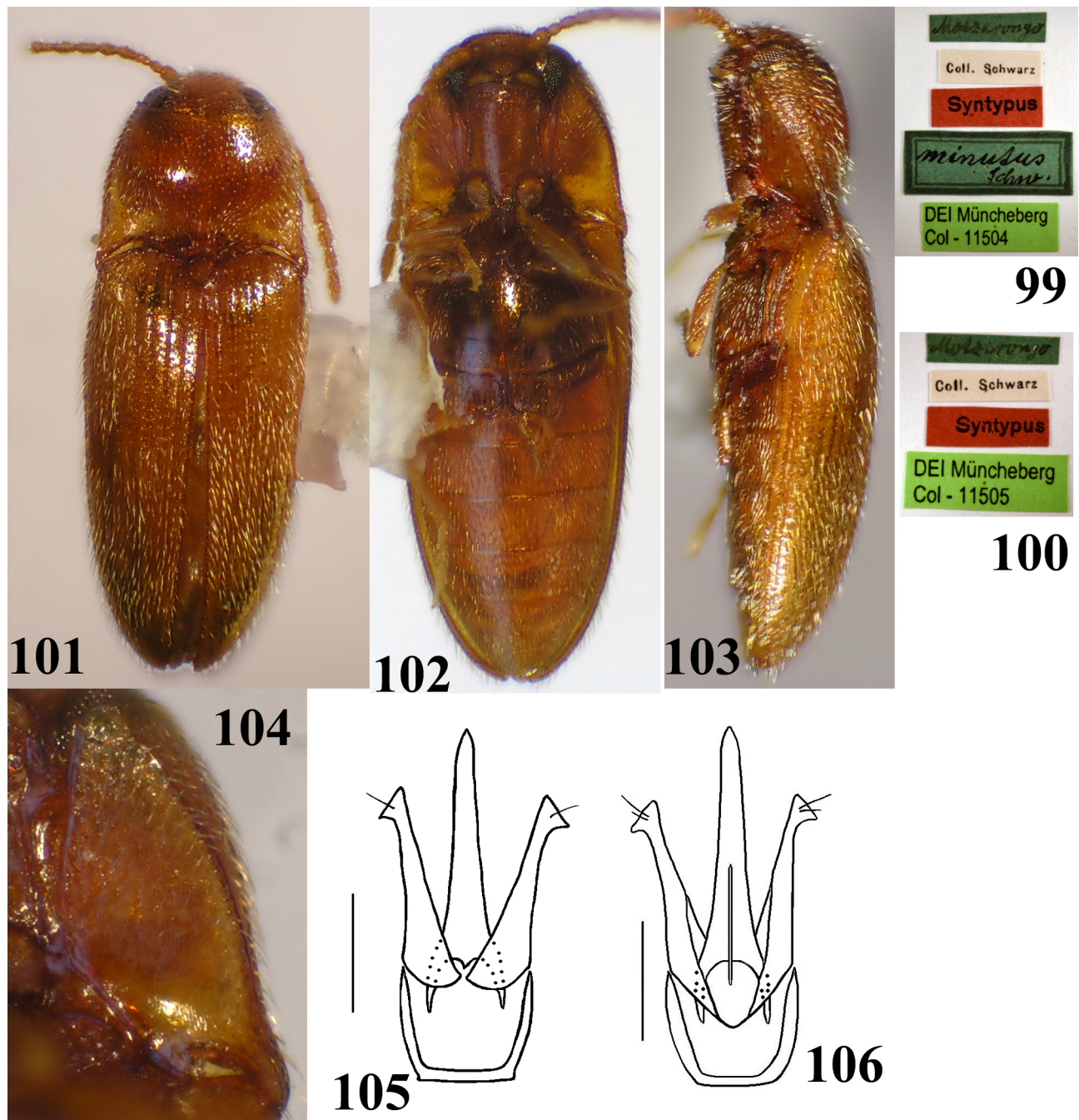
(Elaterinae, Ampedini, Physorhinina)

*Anchastomorphus minutus* Schwarz 1902:254–255; type locality “Mexico, Motzerongo”; sex not indicated.

*Anchastomorphus minutus*, Schwarz 1906–1907:136; Schenkling 1925:188; Blackwelder 1944:301; Gaedike 1985:47.

Gaedike (1985) recorded two syntypes. I have examined two male syntypes which are here designed the lectotype and paralectotype. Lectotype and paralectotype labels are shown in Figures 99 and 100, respectively. The lectotype

lacks the left metathoracic leg beyond the trochanter, left antennomeres 10 and 11, and right and left mesotarsomeres 4 and 5. The paralectotype is missing the left protarsus and right metatarsus.



**FIGURES 99–106.** *Anchastomorphus minutus* Schwarz, lectotype except as noted. Figure 99: labels; Figure 100: paralectotype labels; Figure 101: habitus, dorsal; Figure 102: habitus, ventral; Figure 103: habitus, lateral; Figure 104: hypomeron; Figure 105: aedeagus, dorsal, Guatemala specimen; Figure 106: aedeagus, ventral, Guatemala specimen. Scale bar, 0.1 mm.

Description of lectotype. General body shape (Figures 101–103) small, elongate, parallel-sided, somewhat robust. Length 2.75 mm, width 1.0 mm. Head and thorax light yellowish-brown; elytra, abdomen, antennae and legs more yellowish; setae pale yellowish-white throughout; cuticle smooth and shiny. Setae hair-like, about three frontal puncture diameters long, directed posteriorly except as noted.

Head. Frons evenly convex; punctures dense, shallow, umbilicate, contiguous throughout; setae directed more-or-less away from midpoint of frons; frontoclypeal carina in dorsal aspect smoothly curved, in lateral aspect slightly projecting, in anterior aspect smoothly sinuate, curved ventrally towards midlength of frons, thickened, smooth

and shiny. Frontoclypeal area about twice as wide as high, punctures and setae as on frons. Eyes: ocular index 50. Antenna extending length of antennomere 11 posterad apex of hind angles, reaching about midlength of metaventrite; antennomere 2 small, about as long as wide, globular; antennomere 3 small, subtriangular, slightly shorter than antennomere 4; antennomeres 4–11 more densely setose than antennomeres 1–3, less shiny; antennomeres 4 & 5 about as long as distal width, subtrapezoidal; antennomeres 6–10 wider than long, each subequal in length to antennomere 4; antennomere 11 oval, slightly shorter than antennomeres 9+10.

Prothorax. Pronotum convex, flattened along midlength; distinctly wider than long; hind angles divergent, slightly inturned, carinate, carina long, lateral, reaching half way to anterior margin; basal sublateral incisures vague, shallow, not breaking posterior margin, bordered mesally by low, indistinct carina; lateral punctures as on frons, discal punctures about half size of frontal punctures, separated by about own diameters anteriorly and up to twice own diameters posteriorly; setae directed posterolaterally on most of surface, directed posteromesally on basal declivity; lateral pronotal carina slightly convex, reaching anterior margin. Hypomeron (Figure 104) with femoral groove broad, shallow; anterior margin subtruncate; mesal margin with submarginal carina; anteromesal angle excavate, not raised; mesal margin with elongate tear-drop shaped antennal groove from anteromesal excavation to procoxal cavity, groove tapering posteriorly, with curved, laterally directed carina at anterior end, without punctures or setae; posterior margin with subrectangular projection, posterolateral angle produced; anterior punctures as on lateral pronotum, grading to minute and sparse punctures at femoral groove, with linear row of contiguous punctures adjacent to lateral pronotal carina; setae same size and shape as pronotal setae, directed anteriorly. Prosternum subrectangular, convex, flattened along midlength; anterior lobe directed anteroventrally; lateral margin with angulate carina from anterior margin to procoxal cavities forming mesal margin of antennal groove; punctures and setae same size and shape as on hypomeron. Prosternal intercoxal process narrowly triangular in cross-section, ventral surface reduced to rounded carina, carina divided at posterior margin of procoxal cavities and extended anterolaterally about 1/4 length of prosternum between procoxal cavities and anterior lobe; dorsal surface slightly wider than ventral surface; ventral apex acute.

Pterothorax. Scutellar shield subpentagonal, angled on same plane as anterior declivity of elytra; surface flat; anterior margin transverse, projecting anteriorly; posterior end acute; cuticle, punctures and setae as on pronotum. Elytra slightly convex, length 2.0 mm; conjointly rounded at apex; humerus with low, short, indistinct longitudinal carina; punctatostriate, striae shallowly impressed in basal half, only sutural stria reaching apex in apical half; intervals flat, sutural interval slightly angled dorsomesally, sutural margin carinate; cuticle, punctures and setae as on disc of pronotum. Mesoventrite with lateral wings sinuate; coxal rests anterior; posterior intercoxal process relatively broad and short, steeply declivous from posterior margin; mesoventral cavity elongate-elliptical, intercoxal portion broadly V-shaped, margins slightly raised and carinate; punctures, cuticle and setae as on prosternum. Mesepisternum forming anterolateral margin of mesocoxal cavity; punctures and setae as on prosternum. Metaventrite convex; meso-metaventral suture grooved; anterior intercoxal process rounded anteriorly; anterior and lateral margins with marginal ridge and submarginal groove, ridge abruptly 3–4 times wider adjacent to mesepimeron, then gradually narrowing to posterolateral angle; cuticle, punctures and setae as on prosternum. Flight wings fully developed, not examined.

Legs. Prothorax: tibial spurs short, inconspicuous, densely setose except at apex; tarsus: tarsomere 3 with elongate ventrodistal lobe, lobe narrow, visible in dorsal aspect, extending under tarsomere 4 and base of tarsomere 5. Mesothorax: mesotrochantin visible, subglobular; tibia as on prothorax except tibial spurs about twice as long. Metathorax: coxal plate enlarged in mesal half, with rounded projection at level of femur-trochanter joint, gradually narrowing to virtually absent laterally; tarsus: tarsomere 1 longer than tarsomeres 2–5 combined, tarsomere 3 with ventrodistal lobe as on prothorax.

Abdomen with ventrite 5 convex, subtriangular, about half as long as basal width, posterior margin broadly rounded, recurved dorsally, punctures and setae as on metaventrite. Aedeagus damaged, basal piece and sternite 9 broken.

Description of paralectotype. Characters as in lectotype, except aedeagus looks slightly deformed: median lobe broken, lateral lobes curved medially.

Discussion. The species was described from specimens taken at “Motzerongo” in Mexico, which Radcliffe (1976:125) believes is a misspelling of “Motzorongo”. Selander and Vaurie (1962) place this locality in the state of Veracruz, 17 km southeast of Cordoba, 800ft. [ca. 244m] (18° 39'N, 96° 44'W). The species can be recognized in *Anchastomorpha* by its uniform yellowish colour (Figure 101).

Additional specimens examined (all ERFC): GUATEMALA. PETEN: 5 km S. Santa Elena, 200–300m; lt./lt. trap; 16° 52.350'N 89° 48.899'W; 3–6.vi.2015; E. Fuller, W. Tyson [1 female]. SUCHITEPEQUEZ: 11 km N. Patulul, 750–850m; lt./lt. trap; 18–23.v.2017; E. Fuller//14° 31.39'N 91° 08.19'W [1 female]; [same locality], 770–800m; light trap: coffee plantation; 10–13.vi.2012; E. Fuller [1 male, 1 female]. These specimens represent new country records for this species. The aedeagus of the male from Suchitepequez is illustrated (Figures 105, 106). In comparison with recently collected specimens, the pigments of the type specimens do not appear faded.

### ***Anchastus seminiger* Champion (Figures 107–115)**

(Elaterinae, Ampedini, Physorhinina)

*Anchastus seminiger* Champion 1895:394–95, plate 17, figure 21; type locality “Panama, Bugaba”; two ?male specimens.

*Anchastus lapsus* Fuller, new name for *Tomocephalus* [*sic*] *bilineatus* Schwarz 1906:150–151, preoccupied in *Anchastus* by

*Anchastus bilineatus* Champion 1895:395–396; type locality: “Chiriqui”; sex not stated. NEW SYNONYM.

*Anchastus seminiger*, Schwarz 1906–1907:135; Schenkling, 1925:188; Blackwelder 1944:301; Johnson 2002:21.

*Tomocephalus* [*sic*] *bilineatus*, Schwarz 1906–1907:256; Gaedike 1985:21.

*Tomicephalus bilineatus*, Schenkling 1927:424; Blackwelder 1944:294.

Schwarz (1906) described this species as *Tomocephalus bilineatus*. Gaedike (1985) records one syntype of *T. bilineatus*, and I have examined one male syntype. Labels are shown in Figure 107. The specimen is pinned through the right elytron with the pin hole larger than the pin, and the metatarsomeres are missing. The syntype agrees well with the original description, except under diffuse light the frons and pronotum are densely punctured rather than sparsely punctured as in the description; it is here designated the lectotype.

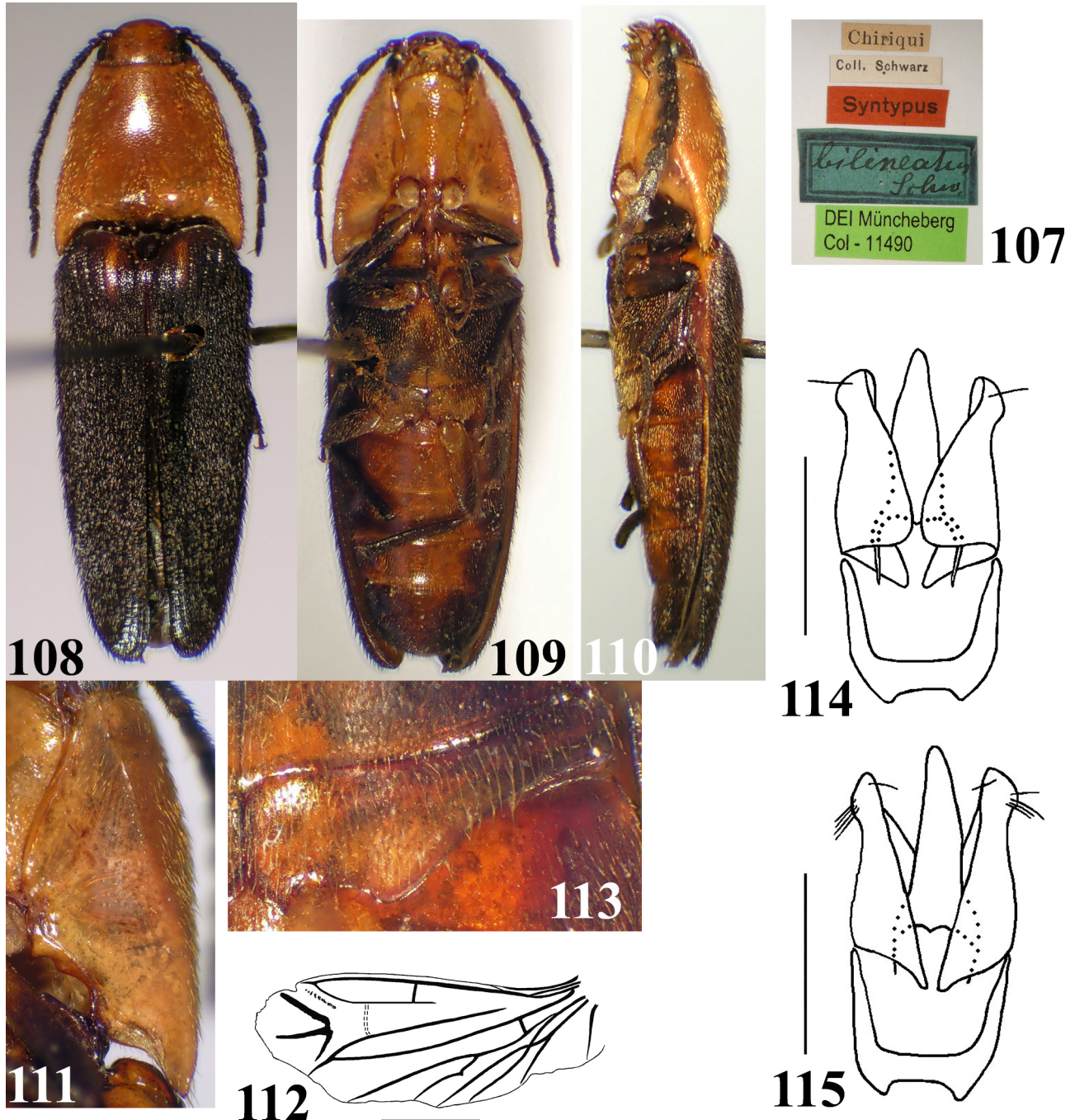
Description of lectotype of *T. bilineatus*. General body shape (Figures 108–110) semielongate, slightly elliptical, flattened. Length 9.0 mm, width 3.0 mm. Head, prothorax, mouthparts yellowish red; eyes and antennae black; elytra black with base of interval 3 bearing yellowish red vitta, vitta about twice length of scutellum, grading to black posteriorly, epipleuron adjacent to pterothorax yellowish red suffused with black; mesoventrite yellowish red; mesepisternum, mesepimeron, metaventrite red suffused with black; procoxa yellowish-white, meso- and metacoxa reddish suffused with black; trochanter reddish-yellow; base of femur variously reddish grading to black distally; tibia and tarsomeres 1–4 black, tarsomere 5 reddish; ventrites 1–4 yellowish red, suffused with black in lateral 1/4, ventrite 5 yellowish red anteromesally, grading to black laterally and posteriorly; setae of head, prothorax and venter yellowish, setae of elytra clear brown posterad vitta, black anteriorly; setae on antennae brownish black. Setae hair-like, about 4–5 frontal puncture diameters long, directed anteriorly on head and hypomeron, directed posteriorly elsewhere, except as noted.

Head. Frons evenly convex; cuticle smooth and shiny; punctures small to minute, separated by up to own diameters throughout; frontoclypeal carina in dorsal aspect strongly convex, in lateral aspect directed ventromesally, not projecting, in anterior aspect curved ventrally, sharply carinate above antennal sockets, thickened and rounded but indistinct between antennal sockets. Frontoclypeal region narrowed to 1–2 puncture diameters width at midlength. Eyes: ocular index 60. Antenna extending to level of mesocoxa; antennomeres 3–11 flattened; antennomeres 1 and 2 subshiny, antennomeres 3–11 minutely densely punctured, dull, dorsal setae robust, setae along line of articulation fine, ventral setae short, fine; antennomere 2 short, globular; antennomere 3 subtriangular, slightly longer than antennomere 4; antennomeres 4–9 slightly longer than distal width, distal angle not produced on antennomere 4, becoming slightly more produced on antennomeres 6–9; antennomere 10 slightly longer than broad, distal angle more produced than antennomere 9; antennomere 11 elongate-elliptical, slightly constricted in apical 1/3, apex bluntly pointed.

Prothorax. Pronotum convex, cuneiform, flattened along midlength, midlength shallowly canaliculate; pronotum slightly wider than long (midlength x maximum width 2.25 mm x 2.5 mm), finely densely punctured throughout; hind angles subparallel, finely carinate on mesal side, carina not extending anterad posterior margin of pronotum; basal sublateral incisures minute, not extending anterad posterior margin; punctures as on frons, slightly more dense laterally; lateral pronotal carina straight, reaching anterior margin. Hypomeron (Figure 111) with anterior margin obliquely truncate; anteromesal angle flat; mesal margin with a narrow smooth, glabrous and mostly impunctate border and submarginal groove; posterolateral angle produced; punctures minute, lateral margin with linear row of oblong punctures, other punctures circular, grading from separated by about own diameters laterally to up to



twice own diameters mesally. Prosternum convex, flattened along midlength; anterior lobe directed anteroventrally; punctures subequal in size to lateral hypomeral punctures, almost contiguous laterally, grading to separated by about own diameters along midlength; cuticle between procoxae flat, lateral margins smooth and shiny, abruptly narrowing to prosternal intercoxal process. Prosternal intercoxal process in ventral aspect elongate, dorsal surface slightly wider than ventral surface, dorsal surface widest at base; in lateral aspect, ventral surface steeply declivous posterad procoxae at about 45° angle, ventral apex very steeply declivous (almost vertical), not projecting, ventral surface about 3/4 length of dorsal surface; ventral apex smooth and shiny; punctures as on midlength of prosternum.



**FIGURES 107–115.** *Tomicephalus bilineatus* Schwarz, lectotype. Figure 107: labels; Figure 108: habitus, dorsal; Figure 109: habitus, ventral; Figure 110: habitus, lateral; Figure 111: hypomeron; Figure 112: wing venation; Figure 113: metacoxal plate; Figure 114: aedeagus, dorsal; Figure 115: aedeagus, ventral. Scale bars, Figure 112: 2.0 mm, Figures 114, 115: 0.5 mm.

Pterothorax. Scutellar shield subtriangular, flat, declivous on same plane as anterior declivity of elytra; anterior margin carinate, slightly projecting, anterolateral angles declivous, posterior margin broadly rounded; punctures

as on pronotum. Elytron length 6.5 mm; slightly convex, broadly flattened across intervals 1–6; apices separately subtruncate, dehiscent; punctatostriate; striae slightly impressed, punctures separated by about own diameters; intervals flat, densely minutely punctured; anterior margin broadly, bluntly angulate, carinate; without lateral carina between stria 9 and epipleuron. Mesoventrite with lateral wings slightly concave; coxal rests anterior; mesoventral cavity with margins subparallel anterad mesocoxae, slightly raised, tapered between mesocoxae, posterior margin of cavity narrowly U-shaped; posterior intercoxal process transverse, truncate, about posterior half of mesoventrite lying between mesocoxae; punctures shallow, almost contiguous, about same size as lateral prosternal punctures. Mesepisternum forming small part of margin of mesocoxal cavity; anterior margin with shallow submarginal groove; anterior margin transversely microstriate mesally, smooth and shiny laterally, with minute punctures and setae; punctures and setae as on mesoventrite except fewer in number and setae directed more or less laterally, cuticle shiny. Metaventrite convex, flattened along midlength; meso-metaventral suture grooved; anterior and lateral margins with marginal ridge and submarginal groove; punctures laterally same size as lateral hypomeral punctures, grading to minute along posterior midlength, separated by about own diameters throughout.

Legs. Prothorax: femur with groove in distal 2/3, margins of groove carinate; tibia with two tibial spurs, cuticle with scattered black spine-like setae; tarsus: tarsomere 3 with ventrodiscal lobe, lobe wider and longer than tarsomere 4, extending under basal half of tarsomere 5. Mesothorax: trochantin visible, subquadrate; tibia as on prothorax except longer and distal fringe of stout spine-like setae forming pallisade (*i.e.*, setae in contact); tarsus as on prothorax except longer. Metathorax: metacoxal plate (Figure 113) about twice as wide at base of trochanter as at lateral margin, produced into posteriorly directed rounded tooth on either side of trochanter, posterior margin gradually narrowing laterally; tibia as on mesothorax except longer. Flight wings (Figure 112) translucent black.

Abdomen with ventrite 5 semielliptical, basal width about twice median length, posterior margin subtruncate, recurved dorsally; punctures, cuticle and setae as on metaventrite, except setae denser and darker. Aedeagus (Figures 114, 115); basal struts foliaceous, lateral margin narrowly darkly pigmented, mesal cuticle very lightly pigmented, inconspicuous, slightly expanded laterally; apex of lateral lobe with one dorsal seta and five ventral setae.

Discussion. Schwarz appears to have overlooked the ventrodiscal lobe on tarsomere 3, and perhaps was misled by the frontoclypeal carina, which is complete but inconspicuous; neither of these character states are present in species of *Tomicephalus* Latreille. The specimen is in fact a species of *Anchastus* LeConte (Ampedini, Physorhinina), and is here transferred to *Anchastus*. *Anchastus bilineatus* (Schwarz), new combination, is a junior secondary homonym of *Anchastus bilineatus* Champion, and is here renamed *Anchastus lapsus* Fuller, new name. I have examined the lectotype and paralectotype males of *A. seminiger* (NHML), and compared the lectotype of *T. bilineatus* with the paralectotype of *A. seminiger*; I have not been able to identify any characters that will separate them. The species can be recognized by the yellowish red head and pronotum which contrasts with the eyes and elytra, and the short longitudinal vitta on elytral interval 3.

### ***Anchastus tenuistriatus* Champion (Figures 116–127)**

(Elaterinae, Ampedini, Physorhinina)

*Anchastus tenuistriatus* Champion 1895:399; type locality: “Mexico, Oaxaca”; one ?female.

*Anchastus Championi* Schwarz 1898:147–148; type locality “Mexico”; more than one specimen indicated, sex not indicated.

NEW SYNONYM.

*Anchastus tenuistriatus*, Schwarz 1906–1907:135; Schenkling 1925:188; Blackwelder 1944:301; Johnson 2002, Figure 17.

*Anchastus Championi*, Schwarz 1906–1907:135; Schenkling 1925:186.

*Anchastus championi*, Blackwelder 1944:301; Gaedike 1985:25.

Schwarz (1898) gives a size range of 4 ¾ –5 mm in his description of *A. championi*, indicating more than one specimen was examined by him. Gaedike (1985) records six syntypes, and I have examined five syntypes. I did not locate the sixth syntype. Four of the syntypes, one male and three females, are a species of *Anchastus*; the fifth syntype belongs in the Ampedini, Dicrepidiina.

The male syntype with the determination label is here designated the lectotype; labels are shown in Figure 122. The other three *Anchastus* syntypes are here designated paralectotypes 1–3. The labels of the paralectotypes are the same as syntype 5 (Figure 128) except the DEI curatorial numbers run from 11500–11502. The lectotype is missing right antennomeres 8–11, left protarsomeres 2–5, left mesotarsomeres 3–5, left metatarsomeres 4 and 5,

right protarsomeres 4 and 5, right mesotarsus, and right metathoracic leg beyond the trochanter; the right protibia and tarsus are detached together. Paralectotype 1 is missing left antennomeres 8–11, right antennomeres 9–11, left protarsomeres 2–5, left mesotarsomere 3–5, left metatarsus, right prothoracic leg beyond the trochanter, right meso- and metathoracic legs beyond the femur. Paralectotype 2 is missing left antennomere 11, left pro- and mesothoracic legs beyond the femur, left metatarsus, right protarsus, and right mesotarsomeres 4 and 5; the right mesothoracic leg is detached. Paralectotype 3 is missing left antennomeres 6–11, right antennomeres 10 and 11, left mesothoracic leg beyond the femur, left metatarsus, right protarsomeres 4 and 5, right mesotarsus, and right metathoracic leg beyond coxa.

Description of lectotype. General body shape (Figures 116, 121) short, stout, elongate oval. Length 5.0 mm, width 1.75 mm. Body and elytra medium brown, anterior declivity of elytra slightly paler with yellowish pigments; antennomere 1 yellow, other antennomeres light brown; leg segments except coxa yellow, metacoxa medium brown, pro- and mesocoxa light brown grading to yellow; frons anterad eyes, nasale and mouthparts yellowish-brown; setae pale yellowish throughout. Cuticle smooth and shiny, except as noted. Setae hair-like, apex tapered and acute, 3–4 frontal puncture diameters long, semierect, directed posteriorly except as noted.

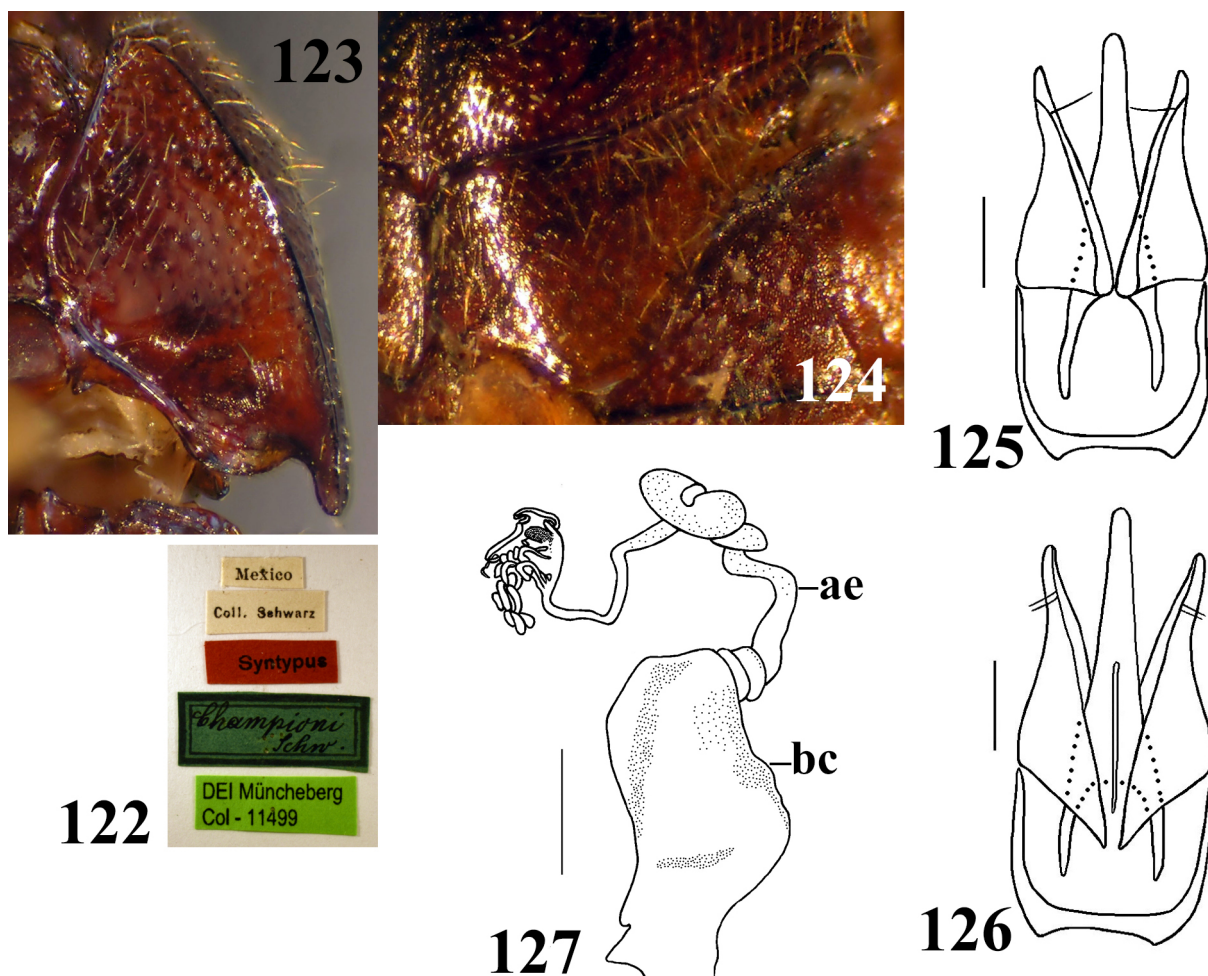
Head. Frons evenly convex, carinate adjacent to eye; frontoclypeal carina evenly convex in dorsal aspect, curved ventrally in anterior aspect, weakened in middle third on either side of midlength of head, margin thin, sharp, not projecting; punctures shallow, umbilicate, almost contiguous throughout, interspaces with sparse, minute punctures; most setae lost. Frontoclypeal region flat, ventral margin carinate, raised above labrum; punctures shallow, inconspicuous. Eyes: small; ocular index 75. Antenna with antennomeres 9–11 extending past apex of hind angles, reaching metacoxa; antennomeres 4–11 with longitudinal dark pigment line on axis of articulation; antennomere 2 small, goblet-shaped; antennomere 3 subtriangular, subequal in length to antennomere 2; antennomere 4 elongate-subrectangular, about twice as long as antennomere 3, widened distally, setae longer and denser than on antennomere 3; antennomeres 5–10 about 2/3 length of antennomere 4, subtriangular with ventrodorsal angle more rounded than on antennomere 4; antennomere 11 elongate, slightly longer than antennomere 10, apex produced, bluntly pointed.

Prothorax. Pronotum convex, wider than long (midwidth x midlength 2.0 x 1.75 mm), cuneiform; basal sublateral incisures absent; hind angles relatively stout, short, bicarinate, mesal carina directed towards midpoint of head, reaching half way up basal declivity of pronotum, lateral carina reaching midwidth of pronotum; punctures same size, structure and density as frontal punctures, grading to minute on basal declivity, lateral punctures slightly larger with raised margins, in profile lateral cuticle granulate (Figure 121); discal setae lost; lateral pronotal carina reaching anterior margin. Hypomeron (as in Figure 123) with anterior margin subtruncate; mesal margin convex with narrow raised ridge and submarginal groove without obvious punctures or setae; anteromesal angle raised, excavate, carinate; femoral groove broadly concave; anterior punctures same size, density and structure as pronotal punctures, grading to minute and sparse at anterior margin of femoral groove; setae same size and structure as pronotal setae, directed more-or-less away from procoxa. Prosternum strongly convex with two shallow, transverse grooves in anterior 1/4; anterior lobe directed anteroventrally; punctures, cuticle and setae as on anterior hypomeron except setae directed posteriorly; margin of procoxal cavities carinate. Prosternal intercoxal process in ventral aspect narrow, elongate, triangular in cross section, with ventral surface reduced to a carina, lateral margins of dorsal surface expanded laterally and carinate; in lateral aspect, ventral margin steeply declivous immediately posterad procoxa, margin directed posterodorsally (Figure 121).

Pterothorax. Scutellar shield slightly convex, angled anteroventrally on same plane as anterior declivity of elytra; anterior margin transverse, slightly raised; posterior margin broadly rounded; cuticle, punctures and setae as on pronotum. Elytra convex, length 4.0 mm; apices separately rounded; punctatostriate, only sutural stria reaching apex, others fading out in apical 1/4, stria 9 deeper and wider than others; intervals flat, densely, coarsely punctured, punctures about half size of pronotal punctures, separated by about own diameters; stria punctures about same size as interval punctures but indistinct and visible only in basal third; setae as on pronotum but appear denser. Mesoventrite with lateral wings shallowly concave; posterior intercoxal process elongate, narrow, gradually declivous anteriorly, posterior margin truncate, slightly raised above metaventrite; margins of mesoventral cavity subparallel anterad coxa, V-shaped between coxae, not raised; cuticle, punctures and setae as on prosternum, posterolateral angle glabrous and impunctate. Mesepisternum forming anterolateral margin of mesocoxal cavity; cuticle with sparse, minute punctures and fine setae on anterior half, glabrous and impunctate on posterior half. Metaventrite convex, flattened along midlength; anterior and lateral margins with marginal ridge and submarginal groove, ridge 3–4 times wider anterolaterally; meso-metaventrite suture grooved; punctures subequal in size and structure to prosternal punctures, almost contiguous throughout; cuticle and setae as on prosternum.



**FIGURES 116–121.** *Anchastus championi* Schwarz. Figures 116–119: habitus, dorsal; Figure 116: lectotype; Figure 117: paralectotype 1; Figure 118: paralectotype 2; Figure 119: paralectotype 3. Figure 120: paralectotype 3 habitus, ventral; Figure 121: lectotype head and pronotum, lateral.



**FIGURES 122–127.** *Anchastus championi* Schwarz. Figure 122: lectotype labels; Figure 123: paralectotype 3 hypomeron; Figure 124: paralectotype 3 metacoxal plate; Figure 125: lectotype aedeagus, dorsal; Figure 126: lectotype aedeagus, ventral; Figure 127: paralectotype 1, female genitalia. Abbreviations: ae—anterior extension; bc—bursa copulatrix. Scale bar, Figures 125, 126: 0.1 mm, Figure 127: 0.25 mm.

**Legs.** Prothorax: femur with tibial groove in distal half, margins of groove not carinate; tibia with cuticle bearing scattered thicker reddish setae, with two tibial spurs, outer spur longer, spurs covered with dense short setae except at apex. Mesothorax: trochantin visible, subquadrate; femur and tibia including spurs as on prothorax except longer. Metathorax: coxal plate (as in Figure 124) very broad mesally, gradually narrowing to virtually absent laterally, posterior margin produced and broadly rounded at trochanter-femur joint, projection slightly longer than length mesad trochanteral condyle; tibia including spurs as on mesotibia.

**Abdomen** with ventrite 5 semielliptical, posterior margin broadly rounded, basal width about twice as long as midlength, punctures, cuticle and setae as on metaventrite. Aedeagus (Figures 125, 126); lateral lobes with one long dorsal subapical seta and two shorter ventral subapical setae; in lateral aspect, apex of median lobe slightly curved ventrally, apex rounded.

**Additional characters and variation from paralectotypes:**

**Paralectotype 1 female** (Figure 117): Length 5.5 mm, width 1.75 mm. Antenna with antennomere 8 reaching posterior margin of pronotum; lateral carina of hind angles extending to anterior margin of basal declivity, slightly diverging from lateral pronotal carina; abdomen distorted; genitalia (Figure 127); ovipositor with coxites lightly pigmented basally, not obviously pigmented apically, styli elongate, apical, lightly pigmented, with apical setae. Bursa copulatrix sac-like (Figure 127, bc); spermatophore present; with three lightly pigmented plates bearing very short spines, plates covering most of surface; anterior extension (Figure 127, ae) with scattered, minute, inconspicuous spines on basal coils; spermathecal gland with lightly pigmented reservoir.

Paralectotype 2 female (Figure 118): length 6.0 mm, width 1.75 mm; elytral basal declivity without yellowish pigment, same colour as rest of elytra; antenna extends two antennomeres past apex of hind angles; ventral surface of prosternal intercoxal process slightly shorter than dorsal surface, ventral apex very slightly projecting, bluntly pointed; mesoventrite with margins of cavity convex and convergent anteriorly, coxal rests ventral; anterior margin of mesepisternum thickened, with shallow submarginal transverse groove, groove slightly deeper laterally; metaventrite forming posterolateral margin of mesocoxal cavity; metatarsus: tarsomere 1 longer than tarsomeres 2–5 combined, tarsomere 3 with ventrodiscal lobe, lobe barely visible in dorsal aspect, extending under tarsomere 4 and basal half of tarsomere 5.

Paralectotype 3 female (Figures 119, 120): length 6.0 mm, width 1.75 mm; abdomen not cleared, yellowish-brown; antennomere 9 reaches apex of hind angle; anterolateral angle of metaventrite produced anteriorly, rounded, forming posterolateral margin of mesocoxal cavity; protarsus: tarsomere 3 with ventrodiscal lobe extending under tarsomere 4 and basal half of tarsomere 5.

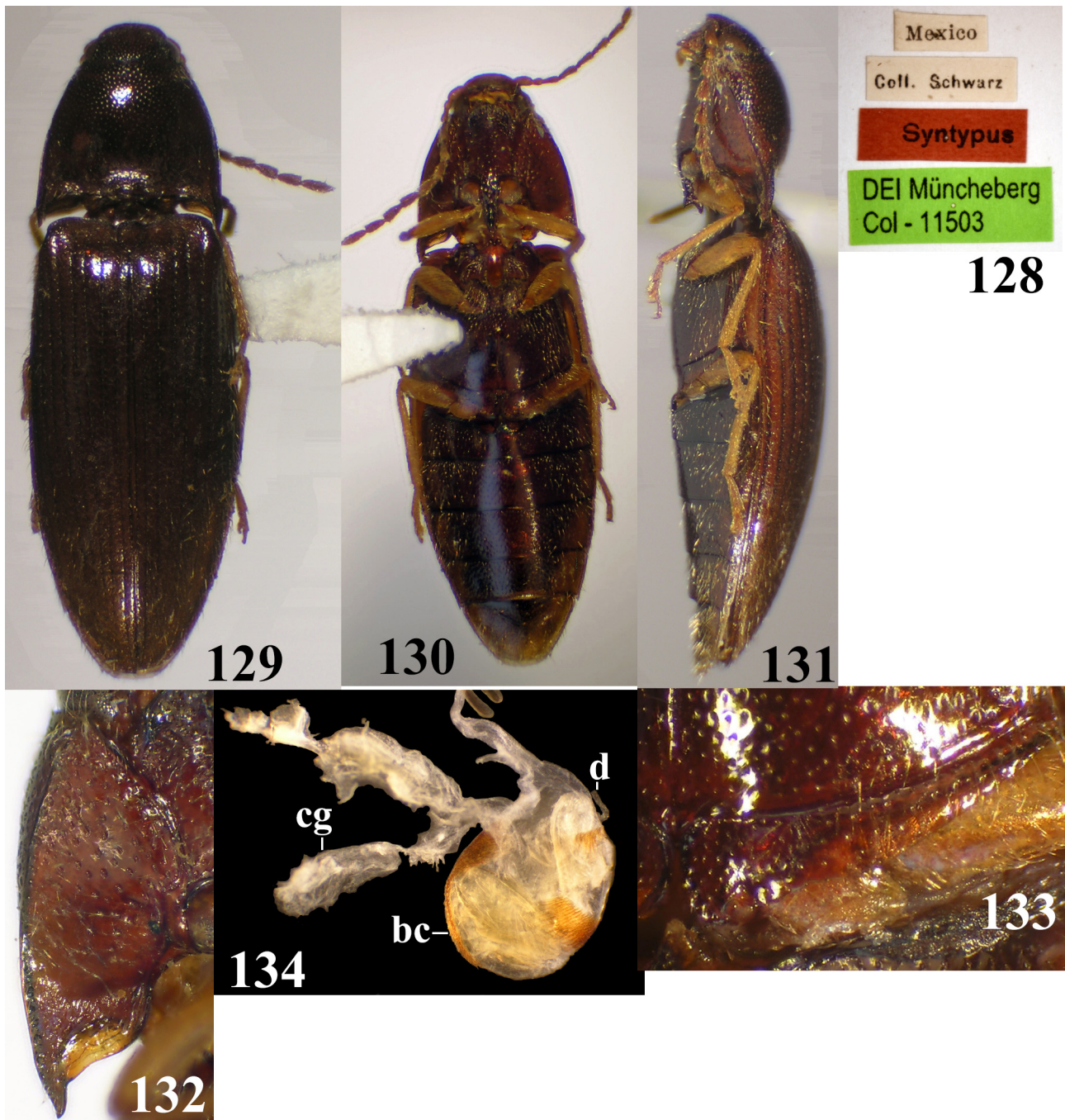
Discussion. Schwarz (1898) compares *A. championi* with *A. tenuistriatus*, described from Oaxaca, Mexico. Johnson (2002, figure 17) illustrates the holotype of *A. tenuistriatus*. I have compared the holotype of *A. tenuistriatus* (NHML) with the type series of *A. championi*, and have not been able to identify any characters that will separate them. Schwarz believed that *A. championi* differed from *A. tenuistriatus* by lacking light brown-red pigments on the anterior declivity of the elytra. In Schwarz's specimens, paralectotype 2 (Figure 118) and syntype 5 (Figure 129) lack a pale yellowish brown anterior declivity of the elytra; syntype 5 is not congeneric with the other syntypes. I have examined 28 males and females that match the genitalia and external structure of *A. championi*. In these specimens, the body colour varies from pale yellowish brown throughout to dark brown throughout, with the anterior declivity of the elytra varying from pale yellowish brown (contrasting with the rest of the elytra in dark specimens) to dark brown (not contrasting with the rest of the elytra in dark specimens). The holotype of *A. tenuistriatus* is paler overall than the type series of *A. championi*, but falls within the range of variation of the nontypes I have examined. I do not believe *A. championi* can be separated from *A. tenuistriatus* by the colour of the elytra, and am treating these two names as synonyms. *A. tenuistriatus* can be recognized in *Anchastus* by having antennomeres 2 and 3 small and subequal in length, and the lateral pronotal surface appearing granulose (Figure 121).

Additional specimens examined (all ERFC): Mexico. Hgo [Hidalgo] 3400', Minera Autlan, at night 7 May 1983, C. & L. O'Brien & GB Marshall [3 males, 3 females]; Hgo [Hidalgo] Hwy 105, 2.7 mi. N Tlanchinol, 5000' 15–17 June 1983, C. & L. O'Brien & GB Marshall [9 males, 6 females]; Hgo [Hidalgo] Hwy 105, 2.4 mi. N Tlanchinol, 5000' 1 Aug. 1982, C.W. & L. O'Brien & G. Wibner [1 female]; Hgo [Hidalgo] 23 mi. NE Jacala 5200', V-27-1974, C.W. & L. O'Brien & Marshall [2 males]; SLP [San Luis Potosi] 7 mi. s. Xilitla, 4100' at night V-26-1974, C&L O'Brien & Marshall [1 male]; SLP [San Luis Potosi] Hwy 80 4 mi. E. Cd. Del Maiz, 4800', 23 July 1982; C&L O'Brien & G. Wibner [1 female]. United States. TEXAS: LaSalle County, Chaparral Wildlife Area, 5 mi. W. Artesia Wells, on September 10, 1988, Sundberg & Hanselmann [2 females]. The Texas specimens represent a new country record for this species. In comparison with recently collected specimens, pigments of the type specimens of *A. championi* do not appear faded.

The fifth syntype (Figures 128–134) is a female of a species of *Dipropus* Germar (Ampedini, Dicrepidiniina). Labels are shown in Figure 128. The specimen is missing left antennomeres 9–11, right protarsus, and tarsomeres 4 and 5 of left and right metatarsus and right mesotarsus.

Description of syntype 5. General body shape (Figures 129–131) short, stout, elongate oval. Length 7.0 mm, width 2.0 mm. Head, thorax, abdomen, and elytra dark reddish-brown, hypomeron slightly lighter, antennae and legs brownish-yellow, antennae slightly darker, setae pale yellowish throughout. Cuticle smooth and shiny. Setae about three frontal puncture diameters long, erect, hair-like, directed posteriorly except as noted.

Head. Frons evenly convex; frontoclypeal carina in dorsal aspect evenly convex, margin smooth and shiny, not thickened, only slightly projecting, in anterior aspect, curved ventrally; frontal punctures large, shallow, contiguous, umbilicate throughout; setae directed more or less anterolaterally. Frontoclypeal region about twice as wide as high, about two puncture diameters high, punctures almost contiguous throughout, setae as on frons. Eyes small, ocular index 80. Antenna extending about length of antennomere 11 posterad apex of hind angles; filiform; antennomere 2 short, globular; antennomere 3 slightly less than twice as long as antennomere 2, slightly shorter than antennomere 4, about twice as long as distal width, slightly widening distally; antennomeres 4–10 subtrapezoidal, slightly widening distally, about twice as long as distal width, cuticle less shiny, more densely punctured than antennomere 3; antennomere 11 elongate-oval, about three times as long as wide, apex subacute, cuticle as on antennomeres 4–10.



**FIGURES 128–134.** *Anchastus championi* Schwarz, syntype 5. Figure 128: labels; Figure 129: habitus, dorsal; Figure 130: habitus, ventral; Figure 131: habitus, lateral; Figure 132: hypomerite; Figure 133: metacoxal plate; Figure 134: female genitalia. Abbreviations: bc—bursa copulatrix; cg—colleterial gland; d—diverticulum.

Prothorax. Pronotum cuneiform, convex, wider than long at midlength-midwidth; hind angles subparallel, carinate, carina sharp, not extending anterad basal declivity; punctures subequal to frontal punctures in size, structure and density anteriorly, grading to half or less that size, simple, and separated by about own diameter on basal declivity; lateral carina slightly sinuate, not reaching anterior margin by length of antennomere 3. Hypomerite (Figure 132) with mesal margin convex; anteromesal angle raised, excavate, carinate, carina extending slightly less than half length of mesal margin to procoxal cavities; mesal margin and lateral pronotal carina meeting at anterior margin; margin of procoxal cavities broad, mostly smooth and shiny, bordered by submarginal groove; punctures small, shallow, simple to subumbilicate, contiguous anteriorly, grading to separated by own diameter at femoral

groove; setae directed more or less away from procoxal cavity. Prosternum convex; anterior lobe conspicuous, directed anteroventrally; cuticle between procoxae with lateral margin raised, smooth and shiny, with submarginal groove; punctures as on hypomeron. Prosternal intercoxal process in lateral aspect subhorizontal (Figure 131), ventral surface about 3/4 length of dorsal surface; in ventral aspect, ventral surface about half width of dorsal surface, lateral margins subparallel; punctures, cuticle and setae of ventral surface as on posterior prosternum.

Pterothorax. Scutellar shield flat, angled anteroventrally on same plane as anterior declivity of elytra; anterior margin slightly projecting; posterior apex bluntly pointed; punctures small, shallow, almost contiguous throughout. Elytron length 5.5 mm; convex, apices conjointly rounded, subtruncate; punctatostriate, striae deeper on anterior half, almost obliterated on posterior half, stria punctures separated by about own diameter; intervals flat, sutural interval angled dorsally in posterior 2/3; intervals densely punctured, punctures separated by about half own diameter; in lateral aspect, stria 9 deeper and wider than striae 1–8. Mesoventrite with lateral wings concave; coxal rests ventral, subtriangular with apex lateral, posterior margin carinate; anteromesal margin carinate, carina continuous with posterior carina of coxal rests; posterior intercoxal process declivous at about 45° angle, posterior margin transverse, truncate; margins of mesoventral cavity convex, intercoxal portion V-shaped; punctures shallow, slightly larger than prosternal punctures, almost contiguous. Mesepisternum with posteromesal angle truncate, forming same length of margin of mesocoxal cavity as posterolateral angle of mesoventrite; anterior margin with angulate marginal groove; punctures and setae on anterior half as on mesoventrite, posterior half glabrous and impunctate. Metaventrite: meso-metaventral suture grooved; punctures small, shallow, slightly larger laterally, separated by about own diameter throughout.

Legs. Prothorax: tibia with two tibial spurs, and cuticle bearing row of short, stout, reddish spine-like setae; tarsus: tarsomeres 2 & 3 with conspicuous ventrodistal lobes, lobes visible in dorsal aspect. Mesothorax: trochantin visible, subrectangular; tibia longer than on prothorax, without spine-like setae; tarsus as on prothorax except tarsomeres longer. Metathorax: coxal plate (Figure 133) relatively narrow, posterior margin weakly sinuate, very slightly produced at level of trochanter-femur joint, gradually narrowing laterally, virtually absent by level of metepisternum; punctures as on metaventrite; tibia and tarsus as on mesothorax except longer.

Abdomen with ventrite 5 subtriangular, basal width about twice midlength, posterior margin broadly rounded, punctures very small, dense, almost contiguous. Female genitalia (Figure 134); gonocoxites lightly sclerotized. Colleterial glands (Figure 134, cg) large, elongate, sac-like, appear to arise from bursa. Bursa copulatrix globular (Figure 134, bc), spermatophore present; one small short diverticulum (Figure 134, d) near base, apex of diverticulum slightly expanded; with three dense bands of spines: one long ventral band with spines directed posteriorly, one small band of spines at base of diverticulum with spines directed anteriorly, one wide band of spines dorsally at midwidth with spines directed anteriorly, spines moderately long, about same size in all bands.

Discussion. In Champion's (1895) key to *Ischiodontus* (now a synonym of *Dipropus*), syntype 5 keys with difficulty to a''' [character state interpretations: relative length of third antennomere ambiguous: longer than second, shorter than fourth, interpreted as subequal to fourth; mesoventral posterior intercoxal process not raised, gradually declivous; anteromesal angle of hypomeron deeply grooved; pronotal punctures ambiguous: interpreted as not *distinctly* umbilicate], which leads to "species 2–16". Species diagnoses within the 15 species included in 'species 2–16' are not adequately resolved, and I am not able to identify syntype 5 any further.

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