J. New York Entomol. Soc. 103(4):386–400, 1995

ADEVOPLITUS, A NEW GENUS OF NEOTROPICAL PENTATOMINI (HETEROPTERA, PENTATOMIDAE)

JOCELIA GRAZIA AND MIRIAM BECKER

Departamento de Zoologia, Universidade Federal do Rio Grande do Sul, Av. Paulo Gama s/no. 90046-900 Porto Alegre RS Brazil

Abstract.—*Adevoplitus,* n. gen. is proposed for the previously described species *Pseudevoplitus longicornis* Ruckes, *P. casei* Thomas, and *P. mexicanus* Brailowsky & Barrera. Two new species are also described *Adevoplitus venezolanus,* n. sp. and *A. costaricensis,* n. sp. from Venezuela and Costa Rica respectively. Previously known species are redescribed herein, and a key is provided for the identification of all known species.

Key words: Pentatomidae, *Adevoplitus,* neotropical, taxonomy, stink bug.

Grazia et al. (1994), in their recent review of *Pseudevoplitus* Ruckes removed three species (*P. casei* Thomas, *P. longicornis* Ruckes, *P. mexicanus* Brailovsky and Barrera) from *Pseudevoplitus.* We are erecting a new genus, *Adevoplitus,* for this group of species. We are also describing two new species, *A. venezolanus* from Venezuela, and *A. costaricensis* from Costa Rica. This proposition is based in the study of the morphology of genitalia of both sexes, as well as on the distinct characters of general morphology. Indeed, the five species of *Adevoplitus* are very similar, the differences being mostly found in the structure of genitalia.

Adevoplitus occurs primarily in the northern part of Neotropical Region, being found in Mexico and Central America. Only one species, *A. venezolanus* is record for South America.

To Dr. Larry H. Rolston, to whom this paper is offered, in recognition to his great contribution to the knowledge of the pentatomids.

MATERIALS AND METHODS

Measurements are given in millimeters and are taken as indicated in Grazia *et al.* (1994). The terminology of Dupuis (1970), and Schaefer (1977) was adopted for the structure of the genitalia. The dissected genitalia were cleared with 10% KOH and stained with Congo Red.

A significant series of the previously described species was also examined so the opportunity to dissect the genitalia of both sexes was available; descriptions and illustrations of the genitalia of *A. longicornis, A. casei,* and *A. mexicanus* are given. For the description and illustration of the median excavation of the ventral rim of the pygophore, the whole segment was tilted slightly posteriorly; for the sake of clarity the infolding of the ventral rim of the pygophore is omitted in Figs. 16–20.

Specimens are deposited in the following institutions with their acronyms as they appear in the text: AMNH—American Museum of Natural History, New York, NY; DAR—David A. Rider Collection, Fargo, ND; DBT—Donald B. Thomas collection, Weslaco, TX; DZRS—Departamento de Zoologia, Universidade Federal do Rio Grande do Sul, Porto Alegre RS, Brazil; LACM—Los Angeles County Museum of

Natural History, Los Angeles, CA; MCNZ—Museu de Ciencias Naturais, FZBRS, Porto Alegre RS, Brazil; NMNH—National Museum of Natural History, Washington D.C.; UNAM—Colecion Entomologica del Instituto de Biologia, Universidad Nacional Autonoma de Mexico, Mexico D.F.

KEY TO THE GENERA

1. Antero-lateral margins of pronotum with anterior half crenulate or subtuberculate, concave, not thinly emarginate. Humeral angles strongly spinose. 2
— Antero-lateral margins of pronotum entire, essentially straight, thinly emarginate. Humeral angles acute, triangular, not strongly spinose. . . . . *Adevoplitus* n. gen.
2. Apex of scutellum entire; veins of membrane parallel. Ostiolar rugae short, each not reaching lateral margin of metapleuron. . . . . *Pseudevoplitus* Ruckes
— Apex of scutellum bilobate. Veins of membrane reticulate. Ostiolar rugae long, each reaching lateral margin of metapleuron. . . . . *Evoplitus* Amyot & Serville.

Adevoplitus, new genus

Type species: *Pseudevoplitus longicornis* Ruckes, 1958

Head porrect, margins mildly reflexed, abruptly sinuate before eyes then parallel or divergent to truncately rounded apex. Juga and tylus equal in length. Ocelli prominent, bright red, twice as far apart as each is from adjacent eye; eyes fuscous, large, subglobular, and protruding but not exceeding beyond anterior pronotal margins. Antennae exceptionally long, subequal to medial length from apex of head to apex of scutellum; segment I surpassing apex of head, segment IV longest, segments II and V subequal, each more than twice the length of segment I. Bucculae moderately prominent, subrectilinear in profile, margins elevated anteriorly, parallel there, then gradually becoming lower, sometimes evanescent at base, in ventral view, divergent posteriorly. Rostrum fulvous, only extreme apex piceous; segment I enclosed by bucculae; segment II arcuate, surpassing procoxae; segment III longest, reaching or surpassing metasternum; last two segments dorso-ventrally depressed.

Pronotum nearly two and one half times as wide across humeri as long medially; anterior margin shallowly excavated, subtruncate behind eyes, with shallow submarginal sulcus, each anterior angle minutely denticulate; humeral angles acute not strongly produced; antero-lateral margins essentially straight, thin, narrowly reflexed; posterior margin broad, shallowly sinuate; disc moderately convex, anterior portion mildly declivous, weakly impressed near middle of antero-lateral margins.

Scutellum somewhat longer than wide at base; basal angles subfoveolate, piceous. Apex of scutellum attaining, or nearly attaining an imaginary line across posterolateral angles of hemelytra. Frenum ending at or slightly beyond middle of scutellum. Margins of scutellar tongue gradually converging to acute apex.

Basal fourth of costal margins of hemelytra reflexed; posterolateral angles acutely rounded; suture of membrane bisinuate; membrane reaching apex of abdomen, irregularly infuscated, with 7 or 8 subparallel veins.

Mesosternal carina reaching prosternum, strongly compressed between procoxae. Metasternal plate raised, hexagonal, posterior margin excavated in triangular notch to receive antrorse protuberance of third abdominal segment. Each ostiolar ruga

extending more than halfway across metapleuron, slightly elevated and curved anteriorly, margins subparallel, apex abruptly, obtusely rounded.

Legs with tibiae dorsally sulcate.

Connexivum well exposed, apical angles acute, produced; seventh connexival plate provided with superimposed, retrorse, acute projection; segments III to VI each with superimposed minute tubercle or spine mesial to each apical angle.

Abdominal medialkeel well developed, terminating anteriorly in stout subconical tubercle; crest of keel narrowly dark brown, in males dilating on seventh sternite. Spiracles oval.

Male genitalia. Pygophore widely open, anterior chamber of genital capsule ample; dorsal rim deeply excavated, fully exposing tenth segment (proctiger); postero-lateral angles expanded; middle third of ventral rim deeply excavated; infolding of ventral rim forming medial 1 + 1 breast-like expansions that are close together, dorsally produced. Diaphragm with pair of strongly sclerotized, elongate, plate-like processes, extending horizontally from dorsal rim of pygophore to base of paramere. Diaphragm very finely striated, striae parallel. Parameres elongate, horizontally arranged along plate-like processes of diaphragm. Longitudinal axis of proctiger perpendicular to sagital plane of pygophore so that anal tube opens ventrally. Basal part of proctiger expanded laterally into 1 + 1 process that encircles tube dorsally and laterally. *Phallotheca* cylindrical, opening posteriorly, with two processes: basal one (*processus phallothecae* 1), subrectangular, posterior margin notched medially; distal one (*processus phallothecae* 2), large, arm-like, beginning at distal aperture of *phallotheca* dorsally projected, nearly perpendicular to longitudinal axis. Dorsal surface of *phallotheca* between *processus phallothecae* 1 and 2, irregular, in lateral view suggesting 1 to 3 verrucae. Basal plates of articulatory apparatus with two pairs of connectives dorsally; those with *processus capitati* compressed, large relatively to basal plates when taken together with processes. *Ponticulus transversalis* produced into long, semi-membranous sheath, lateral sides continuous with dorsal connectives. *Ductus seminis distalis* short, surrounded by voluminous vesica which projects itself dorsally into pair of relatively long, recurved arms (*processus vesicae*) bearing apical membranous flap.

Female genitalia. Imaginary transverse line touching apices of laterotergites 9 crossing sternite VII near its apex; distance from imaginary line to apex of sternite VII subequal to medial length of segment X. In profile, intersection of two imaginary planes tangential respectively to medial abdominal keel and gonocoxites 8, nearly right angle. Gonocoxites 8 rugulose along posterior border rendering them somewhat crenulate; mesial borders parallel or divergent at distal portion; postero-mesial angles well defined or continuous with posterior border. Posterior border of laterotergites 8 each sometimes produced into spine or lobe laterally. Apices of laterotergites 9 surpassing transverse band uniting laterotergites 8 dorsally. Gonocoxites 9 subrectangular, antero-lateral angles expanded into narrow arms; anterior margins sinuate, notched at middle. Thickening of vaginal intima conical, finger-like in ventral view, uniformely sclerotized. *Pars communis* forming elipsoidal area behind thickening of vaginal intima; *chitinnellipsen* present each side of ellipsoidal area. *Ductus receptaculi* before vesicular area about three times as long as ductus after this area. *Capsula seminalis* globoid, bearing three equally spaced, finger-like projections. *Pars*

Table 1. Diagnostic morphological characters in *Adevoplitus* and *Pseudevoplitus*.

Adevoplitus	*Pseudevoplitus*
1. Antero-lateral margins of pronotum entire, emarginate.	1. Antero-lateral margins of pronotum thick, obtuse, crenulate or subtuberculate.
2. Humeral angles acute, triangular.	2. Humeral angles spinose.
3. Proctiger expanded in 1 + 1 process encircling its base.	3. Proctiger with ample, almost bilobate process.
4. Diaphragm process plate-like.	4. Diaphragm process keel-like.
5. Basal plates with two pairs of connectives.	5. Basal plates with two pairs of dorsal connectives.
6. *Phallotheca* with two processes.	6. *Phallotheca* with two processes.
7. *Processus phallothecae* 2 in a stretched arm.	7. *Processus phallothecae* 2 in a stretched tongue.
8. *Processus vesicae* with membranous flaps.	8. *Processus vesicae* without membranous flaps.
9. Imaginary transverse line touching apices of laterotergites 9 crosses sternite VII near apex.	9. Imaginary transverse line touching apices of laterotergites 9 crosses sternit VII far from its apex.
10. Distance between this imaginary line to apex of sternite VII subequal to medial length of segment X.	10. Distance between this imaginary line to apex of sternite VII almost twice medial length of segment X.
11. Imaginary planes tangential to gonocoxites 8 and abdominal keel, forming nearly right angle.	11. Imaginary planes tangential to gonocoxites 8 and abdominal keel, forming obtuse angle.

intermedialis constricted about mid-length. Anterior annular crest disc-like, flange of crest inconspicuous.

Comments: The most conspicuous differences between *Adevoplitus* and *Pseudevoplitus* are in the structure of the pronotum, as well as in the morphology of the genitalia of both sexes. Table 1 lists the differences between them.

The color of the pronotum is variable among the species: ground color predominantly fulvous with irregular distributed reddish brown punctures, tending to ferrugineous behind cicatrices, forming quadrangular patches (i.e., *P. casei, P. venezolanus*), one or two semicircular lines (i.e., *P. casei, P. venezolanus*), or with a unique transversal band (i.e., *P. longicornis*), sometimes followed by a fulvous strip without punctures across humeri (i.e., *P. costaricensis*).

KEY TO THE SPECIES OF *ADEVOPLITUS*

1. In posterior view, general outline of pygophore elliptical or as biconvex lens, postero-lateral angles sometimes protruding (Figs. 6, 12). Gonocoxites 8 with mesial borders contiguous along their length, except for postero-mesial angles; lateral angles of plates attaining posterior margin of transverse band uniting laterotergites 8 dorsally (Figs. 35, 38). 2

— In posterior view, general outline of pygophore with dorsal half convex, and ventral half trapezoid, postero-lateral angles protruding (Figs. 3, 9, 15). Gonocoxites 8 with mesial borders contiguous along ¾ to ⅘ of their length, apical fourth to fifth divergent;

lateral angles of plates attaining or surpassing posterior margin of transverse band uniting laterotergites 8 dorsally (Figs. 33, 36, 40). 3

2. Ventral rim of pygophore with broadly open V-shaped medial excavation (Fig. 17). Posterior border of laterotergites 8 rectilinear, not produced into lobes (Fig. 35). . . . . *A. casei* (*Thomas*)

— Medial excavation of ventral rim of pygophore somewhat angulate resembling hexagon cut in half (Fig. 19). Posterior border of laterotergites 8 triangularly produced laterally (Fig. 38). . . . . *A. costaricensis* n. sp.

3. Apex of scutellum reaching postero-lateral angles of hemelytra. Ventral surface of pygophore provided with roundish low tumidity each side of the evenly U-shaped medial excavation of ventral rim (Fig. 20). Lateral angles of gonocoxites 8 each forming hook-like projection which reaches or surpasses transverse band uniting laterotergites 8 dorsally (Fig. 40). . . . . *A. venezolanus* n. sp.

— Apex of scutellum not reaching postero-lateral angles of hemelytra. Ventral surface of pygophore without tumidities. Lateral angles of gonocoxites 8 acute, projected forward, but not forming hook-like structures, not reaching transverse band uniting laterotergites 8 dorsally (Figs. 33, 36). 4

4. V-shaped medial excavation of ventral rim of pygophore with convex undulation midway along each arm of "V" (Fig. 16). Female with sternite VII somewhat carinate medially; gonocoxites 8 with sutural borders contiguous along $\frac{4}{5}$ of their length, distal fifth divergent, continuous with posterior borders (Fig. 33). . . . . *A. longicornis Ruckes*

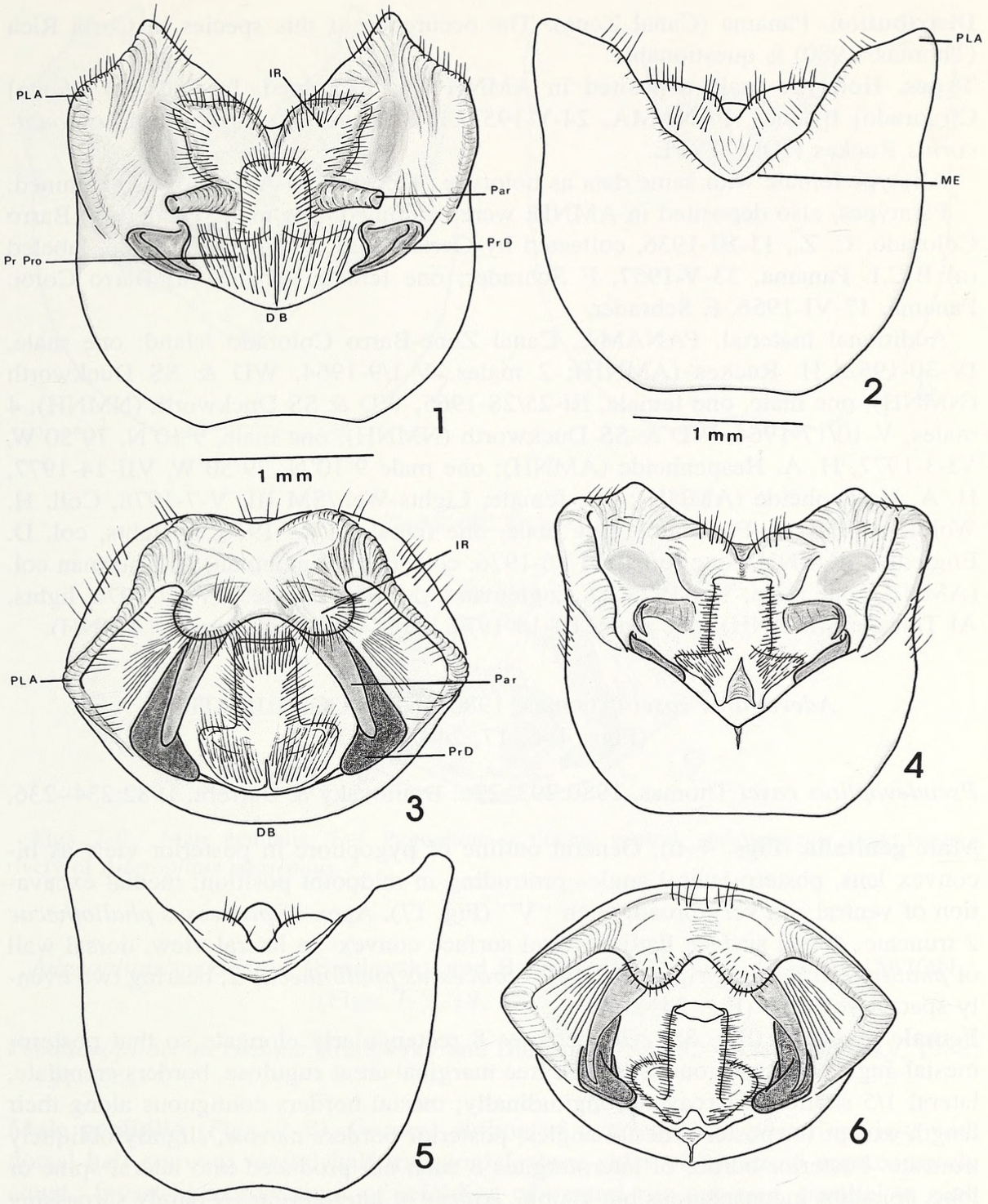
— V-shaped medial excavation of ventral rim of pygophore without undulations (Fig. 18). Female with sternite VII not medially carinate; gonocoxites 8 with mesial borders contiguous along $\frac{3}{4}$ of their length, distal fourth feebly divergent, forming narrow V-shaped notch (Fig. 36). . . . . *A. mexicanus Brailovsky & Barrera*

Adevoplitus longicornis (Ruckes), NEW COMBINATION
(Figs. 1–3, 16, 21–23, 33–34)

Pseudevoplitus longicornis Ruckes, 1959:13–17; Thomas, 1980:296; Brailovsky & Barrera, 1982:232, 236, 244–246.

Male genitalia (Figs. 1–3). General outline of pygophore in posterior view with dorsal half convex, ventral half trapezoidal, the three sides of trapezoid approximately equal; medial excavation of ventral rim V-shaped, with convex undulation midway along arm of "V" (Fig. 16). Apex of *processus phallothecae* 2 obliquely truncate, in lateral view basal process foremost. In lateral view, dorsal wall of *phallotheca* forming obtuse angle with *processus phallothecae* 2, bearing 2 evenly spaced verrucae (Figs. 21–23).

Female genitalia (Figs. 33, 34). Sternite VII somewhat carinate medially. Gonocoxites 8 nearly $\frac{1}{3}$ longer than wide; mesial borders contiguous along $\frac{4}{5}$ of their length, distal fifth divergent and continuous with posterior borders, forming triangle with lateral border which is convexly recurved; each lateral angle lying deep in narrow notch between laterotergites 8 and 9 resuling from carinately-elevated mesial margin of each laterotergite 8; mesial marginal areas, and particularly posterior marginal areas of gonocoxites 8 rugulose. Basal area of laterotergites 8 deeply sunk, producing gap in triangular area where posterior border of sternite VII and gonocoxite 8 meet. Posterior border of laterotergites 8 each projected laterally into acute angle; spiracles minute, not visible in resting position. Visible part of gonocoxites 9 with 1 + 1 minute verrucae, posterior border nearly rectilinear.



Figs. 1–6. Male genitalia. Pygophore in dorsal, ventral, and posterior view, respectively. 1–3. *Adevoplitus longicornis*. 4–6. *A. casei*. (DB = dorsal border, IR = infolding of ventral rim of pygophore, ME = median excavation of ventral rim of pygophore, Par = paramere, PLA = postero-lateral angles of pygophore, PrD = diaphragm process, PrPro = proctiger process).

Distribution. Panama (Canal Zone). The occurence of this species in Costa Rica (Thomas, 1980) is questionable.

Types. Holotype male deposited in AMNH was examined, labeled: (a) B[arro] C[olorado] I[sland], PANAMA, 24-V-1957, F. Schrader (b) *Pseudevoplitus longicornis* Ruckes HOLOTYPE.

Allotype female with same data as holotype, deposited in AMNH, was examined.

Paratypes, also deposited in AMNH, were examined: one male, labeled (a) Barro Colorado, C. Z., 11-III-1936, collected by Gertsch, Lutz, Wood; one male, labeled (a) B.C.I. Panama, 23-V-1957, F. Schrader; one female, labeled (a) Barro Color. Panama, 17-VI-1956, F. Schrader.

Additional material. PANAMA, Canal Zone-Barro Colorado Island: one male, IV-30-1962, H. Ruckes (AMNH); 2 males, V-1/9-1964, WD & SS Duckworth (NMNH); one male, one female, III-25/28-1965, WD & SS Duckworth (NMNH); 4 males, V-10/17-1964, WD & SS Duckworth (NMNH); one male, 9°10′N, 79°50′W, VI-3-1977, H. A. Hespenheide (AMNH); one male 9°10′N, 79°50′W, VII-14-1977, H. A. Hespenheide (AMNH); one female, Lights-Weir/SM III, V-7-1978, Coll. H. Wolda (AMNH).—Ft. Gulich: one male, one female, VI-5-1976, at lights, col. D. Engleman (AMNH); one female, I-26-1976, coll. H. D. Engleman, Al Thurman col. (AMNH); one male, V-4-1977, D. Engleman (AMNH); 2 males, IV-22-1976, lights, Al Thurman (AMNH); one male, III-18-1977 lights, coll Al Thurman (AMNH).

Adevoplitus casei (Thomas, 1980), NEW COMBINATION
(Figs. 4–6, 17, 24–26, 35)

Pseudevoplitus casei Thomas, 1980:293–296; Brailovsky & Barrera, 1982:234–236.

Male genitalia (Figs. 4–6). General outline of pygophore in posterior view as biconvex lens, postero-lateral angles protruding in midpoint position; medial excavation of ventral rim very broad, open "V" (Fig. 17). Apex of *processus phallothecae* 2 truncate, dorsal surface flattish, basal surface convex. In lateral view, dorsal wall of *phallotheca* forming right angle with *processus phallothecae* 2, bearing two evenly spaced verrucae (Fig. 24–26).

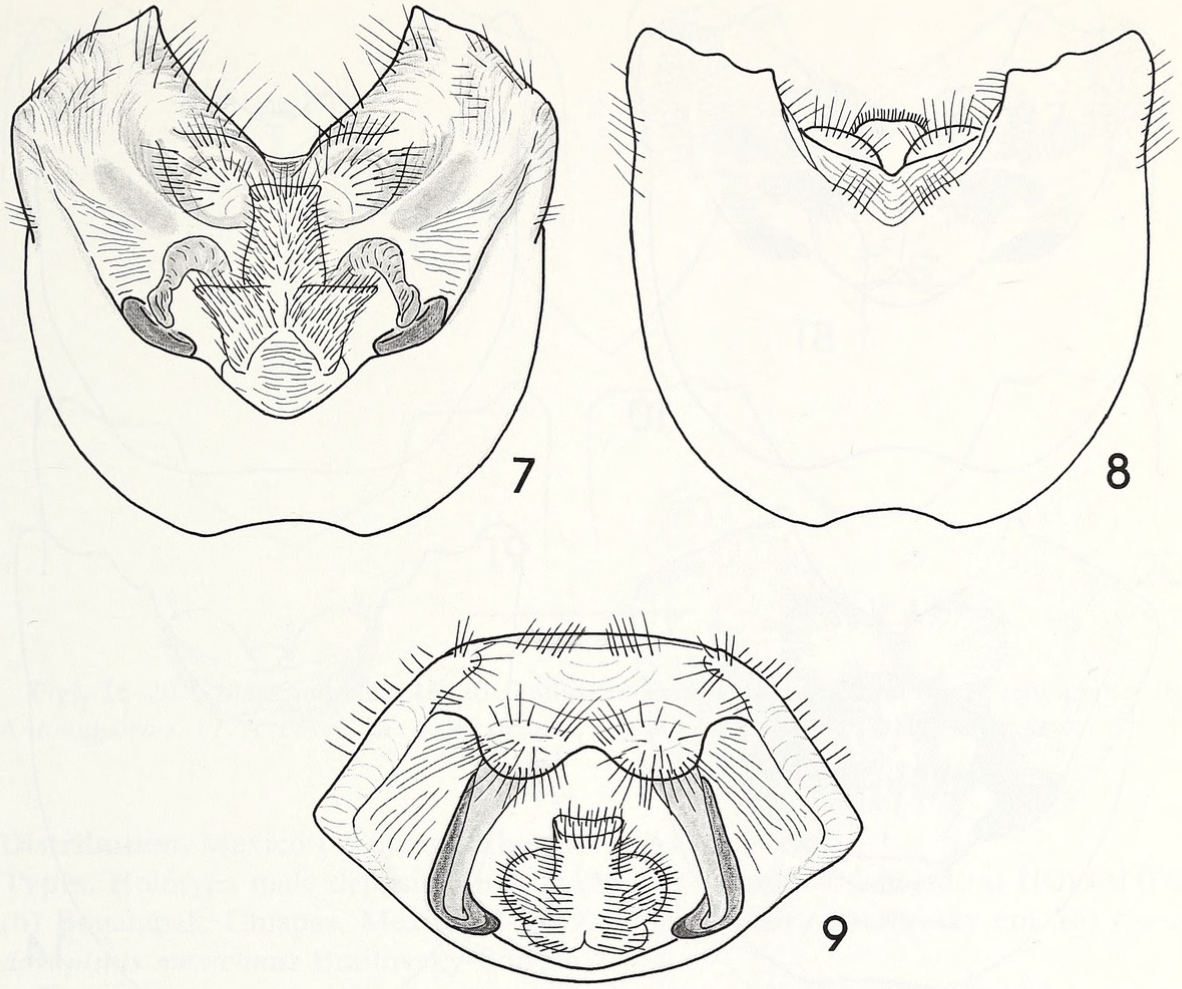
Female genitalia (Fig. 35). Gonocoxites 8 rectangularly elongate so that postero-mesial angles obscure gonocoxites 9; free marginal areas rugulose, borders crenulate, lateral 1/5 shallowly excavate longitudinally; mesial borders contiguous along their length except for postero-mesial angles; posterior borders narrow, slightly obliquely truncate. Posterior border of laterotergites 8 each not produced into lateral spine or lobe, spiracles inconspicuous but visible. Apices of laterotergites 9 barely surpassing transverse band uniting laterotergites 8 dorsally.

Distribution. Mexico (Chiapas), Guatemala (Jutiapa), El Salvador (San Salvador).

Types. Holotype male deposited in NMNH was examined, labeled: (a) GUATEMALA, Jutiapa, Canon de Monjoy CA 1, 27 July 1979, EP Case & DB Thomas (b) HOLOTYPE *Pseudevoplitus casei.*

Paratypes: one male, one female with same data as holotype, deposited in NMNH, were examined.

Additional material: one male, EL SALVADOR, San Salvador, La Libertad, III-19-1972, n. 825, Leg. S. & L. Steinhauser, FSCA (DBT).



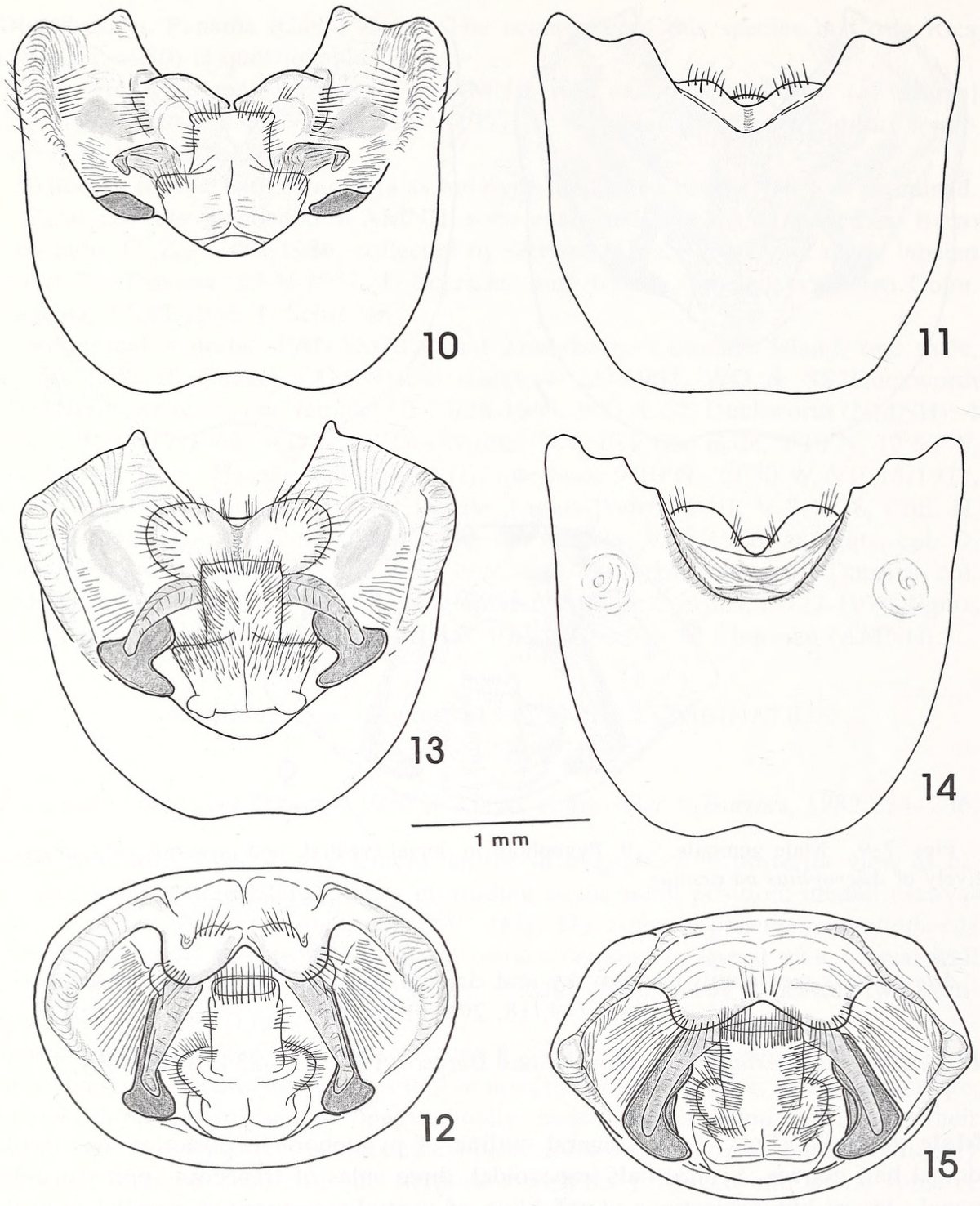
Figs. 7–9. Male genitalia. 7–9. Pygophore in dorsal, ventral, and posterior view, respectively of *Adevoplitus mexicanus*.

Adevoplitus mexicanus (Brailovsky and Barrera, 1982), NEW COMBINATION
(Figs. 7–9, 18, 27–29, 36, 37)

Pseudevoplitus mexicanus Brailovsky and Barrera, 1982:232–234; Brailovsky, 1988: 131–132.

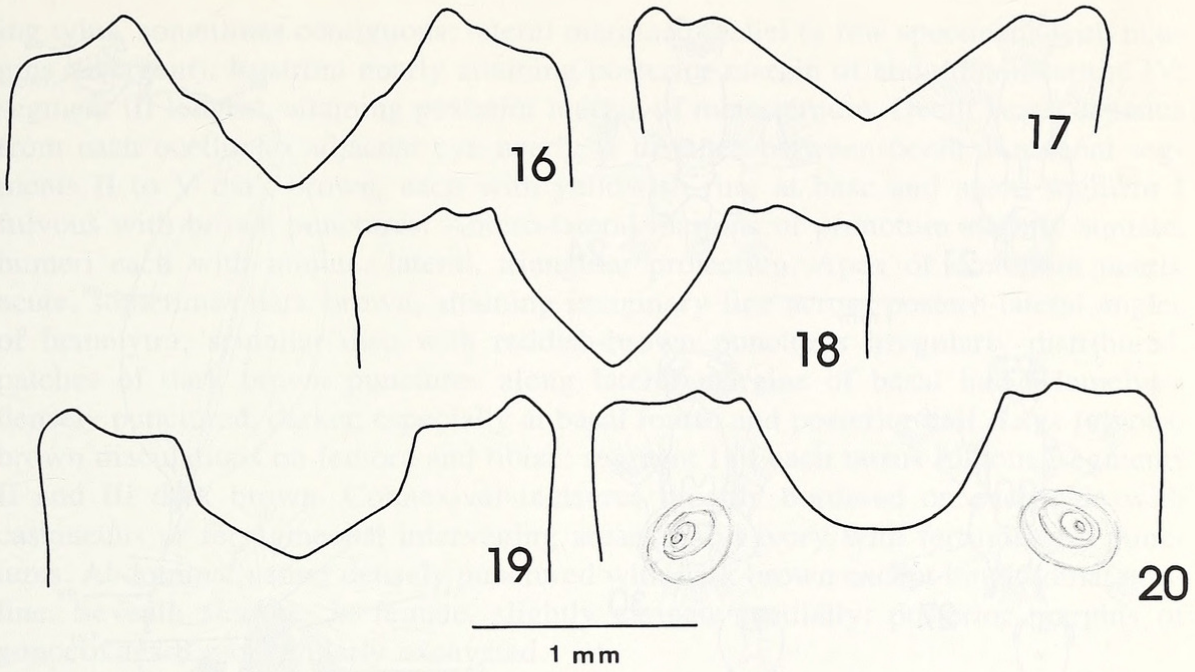
Male genitalia (Figs. 7–9). General outline of pygophore in posterior view with dorsal half convex, ventral half trapezoidal, three sides of trapezoid approximately equal.; breast-like projections of infolding of ventral rim apposed, parallel to each other; medial excavation of ventral rim evenly open V-shaped. (Fig. 18). Apex of *processus phallothecae* 2 obliquely truncate in lateral view, foremost apical one. In lateral view, dorsal wall of *phallotheca* forming obtuse angle with *processus phallothecae* 2, bearing single basal angulation (Figs. 27–29).

Female genitalia (Figs. 36, 37). Gonocoxites 8 nearly ⅓ longer than wide; mesial borders contiguous along ¾ of their length, distal fourth feebly divergent, forming narrow V-shaped notch; posterior border decidedly oblique, feebly sinuate, forming triangle with each lateral border; each lateral angle acute, reaching posterior margin of transverse band uniting laterotergites 8 dorsally, resting in narrow space between



Figs. 10–15. Male genitalia. Pygophore in dorsal, ventral, and posterior view, respectively. 10–12. *Adevoplitus costaricensis.* 13–15. *A. venezolanus.*

laterotergites 8 and 9; lateral marginal areas of gonocoxites 8 laminarly explanate and reflexed; mesial marginal areas and posterior margins somewhat rugulose. Basal parts of laterotergites 8 very deeply sunk forming gap in triangular area where posterior border of sternite VII and each gonocoxite 8 meet; spiracles minute, not visible in resting position. Visible part of gonocoxites 9 bilaterally tumid, posterior border almost rectilinear.



Figs. 16–20. Male genitalia. 16–20. Outline of excavation of ventral rim of pygophore. 16. *A. longicornis.* 17. *A. casei.* 18. *A. mexicanus.* 19. *A. costaricensis.* 20. *A. venezolanus.*

Distribution. Mexico (Veracruz, Chiapas, San Luis Potosi).

Types. Holotype male deposited in UNAM was examined, labeled (a) HOLOTIPO (b) Bonampak, Chiapas, Mexico. 2-V-1978, noct., Harry Brailovsky col. (c) *Pseudevoplitus mexicanus* Brailovsky-Barrera.

Paratype: one male with same data as holotype, deposited in UNAM, was examined.

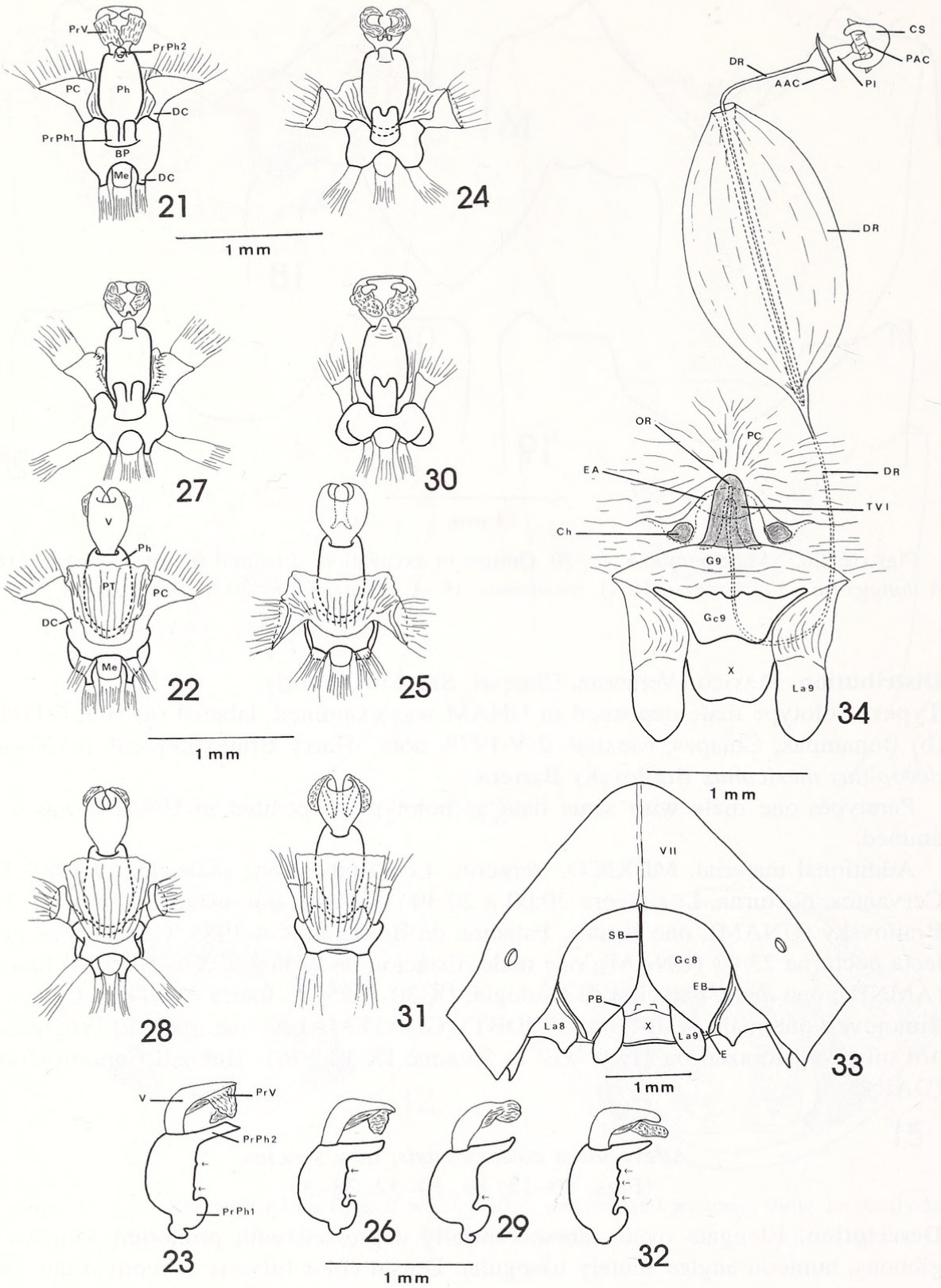
Additional material: MEXICO, Veracruz. Los Tuxtlas: one male, IX-19-1985, L. Cervantes, nocturna, Luz Negra 20:00 a 20:30 (UNAM); one male, IX-14-1985, H. Brailovsky (UNAM); one female, Estacion de Biologia, X-4-1985, C. Mayorga, colecta nocturna 23:00 (UNAM); one male, Estacion de Biologia, X-6-1985, A. Ibarra (AMNH); one male, Estacion de Biologia, IX-30-1985, A. Ibarra (AMNH). Chiapas, Simojovel: one male, VIII-23-1987 (DBT). GUATEMALA: one male, El Progresso, 4rd mi NW Morazan on Hwy. #17 to Salama, IX-17-1961, Hubbell Cantrall Cohn (DAR).

Adevoplitus costaricensis, new species
(Figs. 10–12, 19, 30–32, 38–39)

Description. Elongate ovate, dorso-ventrally depressed with pronotum somewhat gibbous, humeral angles acutely triangular. Dorsal color fulvous or mottled tan, hemelytra reddish-brown.

Male. Measurements. Head length 2.15; width 4.87; length of anteocular part of head 1.00; interocular distance 1.46; interocellar distance 0.5; length of antennal segments: I 1.00, II 2.45, III 3.15, IV 3.46, V 2.46; pronotal length 7.57, width 4.53; scutellal length 5.49, width 4.53; total length 12.56; abdominal width 7.26.

Head fulvous with irregularly distributed reddish-brown punctures. Juga surpass-



Figs. 21–34. Male and female genitalia. 21–32. Male genitalia. *Phallus,* dorsal and ventral views; *phallotheca,* lateral view, respectively. 21–23. *Adevoplitus longicornis.* 24–26. *A. casei.* 27–29. *A. mexicanus.* 30–32. *A. costaricensis.* Figs. 33, 34. Female genitalia. Genital plates and ectodermal genital ducts of *A. longicornis.* (AAC = anterior annular crest, BP = basal plates, Ch = *Chitinellipsen,* CS = *capsula seminalis,* DC = dorsal connectives, DR = *ductus receptaculi,* E = lateral angle of gonocoxites 8, EA = ellipsoidal area of *pars communis,* EB

ing tylus, sometimes contiguous; lateral margins parallel (a few specimens with margins divergent). Rostrum nearly attaining posterior margin of abdominal sternite IV; segment III longest, attaining posterior margin of metasternum. Ocelli large; distance from each ocellus to adjacent eye nearly ⅓ distance between ocelli. Antennal segments II to V dark brown, each with yellowish ring at base and apex; segment I fulvous with brown punctures. Antero-lateral margins of pronotum slightly sinuate; humeri each with minute, lateral, triangular projection. Apex of scutellum nearly acute, sometimes dark brown, attaining imaginary line across postero-lateral angles of hemelytra; scutellar disc with reddish-brown punctures irregularly distributed, patches of dark brown punctures along lateral margins of basal half. Hemelytra densely punctured, darker, especially at basal fourth and posterior half. Legs fulvous, brown maculations on femora and tibiae; segment I of each tarsus fulvous, segments II and III dark brown. Connexival incisures broadly bordered on each side with castaneous or ferrugineous, intervening areas sordid ivory with ferrugineous punctures. Abdominal venter densely punctured with dark brown except longitudinal midline. Seventh sternite, in female, slightly carinate medially; posterior margins of gonocoxites 8 rectangularly excavated.

Genitalia (Figs. 10–12). General outline of pygophore elliptical in posterior view, postero-lateral angles not protruding; medial excavation of ventral rim somewhat angulate, resembling hexagon cut in half (Fig. 19). *Processus phallothecae* 2 narrowing progressively towards tip, apex pointed. In lateral view, dorsal wall of *phallotheca* forming obtuse angle with *processus phallotecae* 2, bearing 3 evenly spaced verrucae (Figs. 30–32).

Female. Measurements. Head length 2.38, width 3.47; length of anteocular part of head 1.17; interocular distance 1.56; interocellar distance 0.67; length of antennal segments: I 1.00, II 2.52, III 3.05, IV 3.73, V 2.63; pronotal length 3.56, width 8.53; scutellal length 6.55, width 5.14; total length 14.59; abdominal width 8.53.

Genitalia. (Figs. 38, 39). Gonocoxites 8 more than ¼ longer than wide; disc slightly tumescent, lateral 1/5 shallowly excavated longitudinally; mesial borders contiguous except for postero-mesial angles; posterior borders strongly, obliquely truncate, each forming triangular outline together with lateral border; lateral angles of gonocoxites 8 not attaining posterior margin of transverse band uniting laterotergites 8 dorsally; crenulation of posterior borders rather obvious. Mesial borders of laterotergites 8 incrassate, reflexed; posterior borders triangularly produced; spiracles minute, not perceptible in resting position. Visible part of gonocoxites 9 bilaterally tumescent; posterior border slightly concave.

Types. Holotype: male, labeled: (a) COSTA RICA, Limon Province, Hdas. La Suer-

←

= lateral border of gonocoxites 8, G9 = gonapophysis 9, Gc8 = gonocoxites 8, Gc9 = gonocoxites 9, La8 = laterotergites 8, La9 = laterotergites 9, Me = *membranblase,* OR = *orificium receptaculi,* PAC = posterior annular crest, PB = posterior border of gonocoxites 8, PC = *processus capitati,* PCo = *pars communis,* Ph = *phallotheca,* PI = *pars intermedialis,* PrPhl = *processus phallothecae* 1, PrPh2 = *processus phallothecae* 2, PrV = *processus vesicae,* SB = mesial border of gonocoxites 8, TVI = thickening of vaginal intima, V = vesica, VII = seventh abdominal sternite, X = tenth abdominal segment).

te/Tapezco, 29 air km W Tortuguero, elev. 40 m. lat 10°27′–30′N, long. 83°47′W, VIII-13/31-1979, JP & KE Donahue, CC Hair, NK Moore, MA Hopkins (b) LACM/ Earthwatch, Tapezco's Rainforest Expedition. Deposited in LACM.

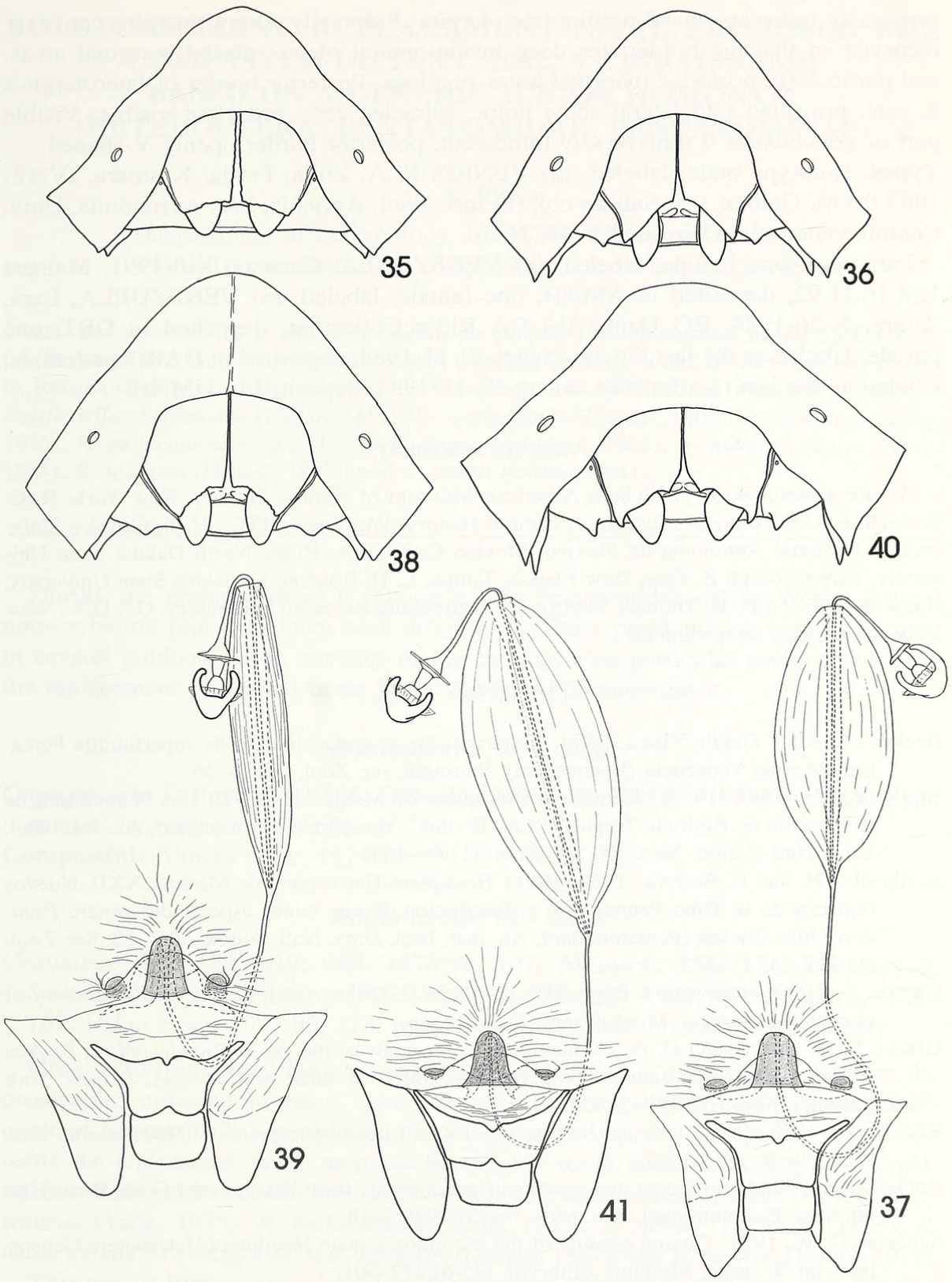
Paratypes: 24 males, 10 females labeled as holotype. Paratypes deposited at the following collections: 5 males, 2 females (AMNH); 5 males, 2 females (DBT); 2 males, 1 female (DZRS); 5 males, 2 females (LACM); 2 males, 1 female (MCNZ); 5 males, 2 females (NMNH).

Adevoplitus venezolanus, new species
(Figs. 13–15, 20, 40, 41)

Pseudevoplitus longicornis, Becker & Grazia-Vieira, 1971: 19, *nec* Ruckes, 1959.

Description. Elongate ovate, dorso-ventrally depressed, pronotum somewhat gibbous, humeri acutely triangular. Dorsal color fulvous, head and hemelytra orange.
Male. Measurements. Head length 2.4, width 3.16; length of anteocular part of head 1.16; interocular distance 1.6; interocellar 0.68; length of antennal segments: I 1.04, II 2.48, III 2.92, IV 3.52, V 2.36; pronotal length 3.44, width 7.46; scutellal length 5.24, width 4.59; total length 13.44; abdominal width 7.29.

Head with few and irregularly distributed reddish-brown punctures. Juga surpassing tylus but not contiguous; lateral margins divergent. Rostrum almost attaining posterior margin of abdominal sternite IV; segment III longest, reaching posterior margin of metasternum. Ocelli large, distance from each ocellus to adjacent eye ⅓ distance between ocelli spaces. Antennal segments II to V dark brown, each with yellowish ring at base and apex; segment I fulvous with brown punctures. Antero-lateral margins of pronotum nearly straight; humeri with minute, extrorse triangular spine. Apex of scutellum acute, pointed, dark brown, attaining imaginary line across postero-lateral angles of hemelytra; disc with reddish-brown punctures irregularly distributed, patches of dark brown punctures along lateral margins of basal half. Hemelytra densely punctured, posterior half with irregular brown spots. Legs fulvous spotted with brown on femora and tibiae; segment I of tarsus fulvous, segments II and III dark brown. Connexival incisures broadly bordered on each side with castaneous or ferrugineous, intervening areas sordid ivory with ferrugineous punctures. Abdominal venter densely punctured with dark brown except mid-longitudinal line.
Genitalia (Figs. 13–15). General outline of pygophore in posterior view with dorsal half convex, ventral half trapezoidal, sides of trapezoid nearly half as long as ventralmost margin; postero-lateral angles protruding in midpoint position; ventral surface provided with roundish, low tumidity each side of evenly U-shaped median excavation of ventral rim. (Fig. 20).
Female. Measurements. Head length 2.43, width 3.21; length of anteocular part of head 1.31; interocular distance 1.45; interocellar distance 0.67; length of antennal segments I 1.00, II 2.07, III 2.68, IV 3.24, V 2.26; pronotal length 3.55, width 8.40; scutellal length 6.21, width 5.09; total length 14.53; abdominal width 8.51.
Genitalia (Figs. 40, 41). Posterior margin of sternite VII shallowly excavated on gonocoxites 8. Gonocoxites 8 nearly ¼ longer than wide, posterior ⅔ flattish; mesial borders contiguous along ¾ of their length, distal fourth divergent, thinly carinate, postero-mesial angle triangularly produced; posterior borders oblique, sinuate. Lateral angles of gonocoxites 8 each provided with hook-like projection reaching or



Figs. 35–41. Female genitalia. Genital plates and ectodermal genital ducts. 35. *Adevoplitus casei.* 36, 37. *A. mexicanus.* 38, 39. *A. costaricensis.* 40, 41. *A. venezolanus.*

surpassing transverse band uniting laterotergites 8 dorsally; lateral margins convexly recurved so that the border lies deep inside genital plates; mesial marginal areas, and particularly posterior marginal areas rugulose. Posterior border of laterotergites 8, each projected into lateral acute point; spiracles very small but visible. Visible part of gonocoxites 9 transversely tumescent, posterior border openly V-shaped.

Types. Holotype male, labeled: (a) VENEZUELA. Zulia, Perija, Kasmera, IV-12-1963 (b) M. Gelbez, P. J. Salinas col. (c) Inst. Zool. Agricola, Fac. Agronomia, Univ. Central Venezuela. Deposited in MCNZ.

Paratypes: one female, labeled: (a) VENEZUELA, Caracas, X-6-1991, Mainest 1.M.16.11.92, deposited in AMNH; one female, labeled: (a) VENEZUELA, Lara, Sarare, X-26-1984, RG Danka (b) DA Rider Collection, deposited in DBT; one female, labeled as the last female except XI-11-1984, deposited in DAR; one female, labeled as the last two females except XI-13-1984, deposited in NMNH.

ACKNOWLEDGMENTS

We are grateful do R. T. Schuh, American Museum of Natural History, New York; R. C. Froeschner, U.S. National Museum of Natural History, Washington D.C.; H. Brailovsky, Universidad Nacional Autonoma de Mexico, Mexico City; D. A. Rider, North Dakota State University, Fargo; Joseph E. Eger, Dow Elanco, Tampa; L. H. Rolston, Louisiana State University, Baton Rouge; and D. B. Thomas, Subtropical Agriculture Research Laboratory, U.S.D.A., Weslaco, for the loan of specimens.

LITERATURE CITED

Becker M. and J. Grazia-Vieira. 1971. Contribuicão ao conhecimento da superfamilia Pentatomoidea na Venezuela (Heteroptera). Iheringia, ser. Zool. (40):3–26.

Brailovsky, H. 1988 (1987). Hemiptera-Hetroptera de Mexico XXXVIII Los Pentatomini de la Estacion de Biologia Tropical "Los Tuxtlas" Veracruz (Pentatomidae). An. Inst. Biol. Univ. Natl. Auton. Mex. 58, Ser. Zool. (1):69–154.

Brailovsky, H. and E. Barrera. 1982 (1981) Hemiptera-Heteroptera de Mexico. XXII. Nuevos registros de la Tribu Pentatomini y descripcion de una nueva especie del genero *Pseudevoplitus* Ruckes (Pentatomidae). An. Inst. Biol. Univ. Natl. Auton. Mex. 52, Ser. Zool. (1):231–246.

Dupuis, C. 1970. Heteroptera. Pages 190–208 *in:* S. L. Tuxen (ed.), Taxonomist's Glossary of Genitalia of Insects. MunksGaard, Copenhagen.

Grazia, J., M. Becker and D. B. Thomas. 1994. A review of the genus *Pseudevoplitus* Ruckes (Heteroptera: Pentatomidae) with the description of three new species. J. New York Entomol. Soc. 102(4):442–455.

Ruckes, H. 1958. Some new genera and species of tropical pentatomids (Heteroptera). Am. Mus. Novit. 1918:1–15.

Ruckes, H. 1959. New genera and species of pentatomids from Panama and Costa Rica (Heteroptera, Pentatomidae). Am. Mus. Novit. 1939:1–18.

Schaefer, C. W. 1977. Genital capsule of the tricophoran male Hemiptera:Heteroptera:Geocorisae. Int. J. Insect Morphol. Embryol. 6(5/6):277–301.

Thomas, Jr. D. B. 1980. A new *Pseudevoplitus* Ruckes from Guatemala with a key to the species. (Hemiptera: Pentatomidae). Pan-Pacific Entomol. 56(4):293–296.

Received 12 September 1996; accepted 31 October 1996.