

A Review of the Genus *Orchestomerus* Dietz (Coleoptera: Curculionidae: Ceutorhynchinae: Cnemogonini) of the USA

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A REVIEW OF THE GENUS *ORCHESTOMERUS* DIETZ (COLEOPTERA: CURCULIONIDAE: CEUTORHYNCHINAE: CNEMOGONINI) OF THE USA

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ABSTRACT

The genus *Orchestomerus* Dietz contains four species in the USA: *O. wickhami* Dietz, *O. eisemani* Yoshitake and Anderson, **new species**, *O. marionis* (Fall), **resurrected species** and **new combination**, and *O. whiteheadi* Colonnelli. *Orchestomerus ulkei* Dietz, previously considered the valid name for *O. marionis*, is a **new junior subjective synonym** of *Auleutes epilobii* (Paykull), which in turn makes *Platyeristes* Dietz a **new junior synonym** of *Auleutes* Dietz. Diagnostic features of *Orchestomerus*, illustrations of the four species, and a key to separate them are presented. *Orchestomerus* species are associated with Vitaceae: *Cissus trifoliata* (L.) L. for *O. wickhami* in Texas; *Parthenocissus quinquefolia* (L.) Planch. for *O. eisemani* in Indiana, Maryland, Massachusetts, and North Carolina, *Vitis* sp. for *O. marionis* in Georgia and Missouri, and *Vitis arizonica* Engelm. for *O. whiteheadi* in Arizona.

Key Words: taxonomy, biodiversity, new species, Virginia creeper, Vitaceae, weevils

Orchestomerus Dietz was described in 1896 to accommodate two species, *Orchestomerus ulkei* Dietz and *Orchestomerus wickhami* Dietz, based on single specimens from New York and Brownsville, Texas, respectively. Since then, the genus has received little attention, and species were cited in most checklists, catalogs, and regional treatments as only known from the type localities (only O'Brien and Wibmer 1982 added a record from Arkansas for *O. wickhami*). *Orchestomerus* was placed as a junior synonym of *Hypocoeliodes* Faust, 1896 by Champion (1907), and this placement was followed until Colonnelli (1991) resurrected *Orchestomerus*, citing as diagnostic the unarmed femora, lack of obvious punctures on the sides of the prothorax, and the ligulate apex of the aedeagus. At the same time, Colonnelli (1991) described a new species, *Orchestomerus whiteheadi*, from Arizona, bringing the North American total to three species. Since then, *Hypocoeliodes* has been treated as distinct, with *Orchestomerus* composed of 12 species, three from North America and nine from Mexico southward, and *Hypocoeliodes* with nine species, all from South America (Colonnelli 2004).

A recent study of the biology of a species of *Orchestomerus* on Virginia creeper, *Parthenocissus quinquefolia* (L.) Planch. (Vitaceae), in Massachusetts

(Eiseman 2014) initiated this taxonomic study. RSA initially identified the species in the Eiseman study as *O. wickhami*. However, collection of a series of *O. wickhami* from Brownsville, Texas in November 2013 allowed for dissection of males from both Texas and Massachusetts and showed the Eiseman specimens to be distinct and representing a new species herein described.

In order to properly characterize this new species, a taxonomic review of the genus in North America was undertaken. In addition to the new species, there was longstanding uncertainty as to the identity of *O. ulkei*, which continued to be known only from the unique type specimen from New York (although Colonnelli (1991), without examination of types, placed *Auleutes marionis* Fall, 1913 as a junior synonym). There was also the presence of an unidentified species of *Orchestomerus* from Kansas and the misidentification of *Parauleutes nebulosus* (LeConte) as *O. wickhami* by Salsbury (2000).

MATERIAL AND METHODS

Specimens used in this study are deposited in the following collections: Arizona State University, Hasbrouck Insect Collection, Tempe, AZ, USA (ASUHIC); private collection of Arthur V. Evans,

Richmond, VA, USA (AVEC); Canadian Museum of Nature, Ottawa, ON, Canada (CMNC); Canadian National Collection of Insects, Ottawa, ON, Canada (CNCI); Carnegie Museum of Natural History, Pittsburgh, PA, USA (CMNH); private collection of Charles W. O'Brien, Green Valley, AZ, USA (CWOB); Louisiana State Arthropod Museum, Louisiana State University, Baton Rouge, LA, USA (LSAM); private collection of Kyle E. Schnepf, Gainesville, FL, USA (KESC); Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA (MCZC); Mississippi State University, Mississippi State, MS, USA (MEM); National Institute for Agro-Environmental Sciences, Tsukuba, Japan (NIAES); Snow Entomological Museum, University of Kansas, Lawrence, KS, USA (SEMC); Texas A&M University Collection, College Station, TX, USA (TAMU); US National Museum, Washington, DC, USA (USNM); Virginia Museum of Natural History, Martinsville, VA, USA (VMNH).

Abbreviations used in descriptions are as follows: LB = length of body; WF = maximum width of forehead; LR = length of rostrum; WR = maximum width of rostrum except apex; WAR: width of apex of rostrum; LP = length of prothorax; WP = width of prothorax; LE = length of elytra; WE = maximum width of elytra.

Verbatim label data indicated by quotation marks are provided for the holotype. Label breaks are indicated by a slash (“/”).

A distribution map for the four species is provided. The distribution map is a hotlink to a .kml file that requires Google Earth to operate. Simply click on the “Map” link under the distribution subheading for any of the four species and Google Earth should open and display the collection sites. The color of the placemaker for each species is indicated.

TAXONOMIC REVIEW OF *ORCHESTOMERUS* OF THE USA

Orchestomerus Dietz, 1896

Orchestomerus Dietz 1896: 412. Type species: *Orchestomerus wickhami* Dietz 1896, subsequent designation by Colonnelli 1991.

Diagnosis. *Orchestomerus* is characterized mainly by having a pair of carinate or obtuse prominences on the middle of the pronotum, edentate femora, tibiae with shallow grooves and lacking definite angles basally on outer margins, mesosternal canal that is limited laterally by oblique, apically narrowed costae, and transverse impressions on the sides of abdominal ventrite 5 laterally along the basal margin. The genus is very similar in general appearance to *Craponius* LeConte, 1876 known from the Nearctic Region. However, *Craponius* has the tibiae deeply grooved and emarginate along the outer margin for

reception of the tarsi, the fore and middle tibiae have basally sharply angulate outer margins, the mesosternal canal is limited laterally by subparallel costae, and abdominal ventrite 5 lacks lateral impressions. *Orchestomerus* also closely resembles *Hypocoeliodes* Faust, 1896, but *Hypocoeliodes* possesses dentate femora and abdominal ventrite 5 lacks lateral impressions.

Distribution. Nearctic and Neotropical Regions (Colonnelli 2004).

Natural History. Our knowledge of the biology of *Orchestomerus* weevils is still limited, but available data suggest that they are associated with plants in the family Vitaceae (Korotyaev and Anderson 2002; Colonnelli 2004; Eiseman 2014).

Orchestomerus wickhami Dietz 1896

(Figs. 1, 2, 9–16)

Orchestomerus wickhami Dietz 1896: 414 (type locality: “Hab. –Brownsville, Texas.”). Colonnelli 1991: 276, Colonnelli 2004: 77 (in catalog).

Hypocoeliodes wickhami; Champion 1907: 139. O'Brien and Wibmer 1982: 170 (in checklist).

Orchestomerus wickhami; Salsbury 2000: 246 (misidentification of *Parauleutes nebulosus* (LeConte)).

Diagnosis. *Orchestomerus wickhami* is characterized mainly by the narrow, more strongly impressed forehead, the pronotum with a pair of acutely ridged prominences on the middle, the rostrum widest at portion above antennal insertions, abdominal ventrite 5 with shallower impressions on sides along basal margin, middle of male ventrite 5 with a smaller impression, which is covered with oval to elliptic scales, apical margin of male ventrite 5 shallowly roundly produced in the middle, pygidium sulcate along midline, and aedeagus with apical setae and lacking broad laminate apical projection.

Redescription. Male. LB = 1.91–2.13 mm (mean 2.04 mm). WF = 0.16–0.19 mm (mean 0.17 mm). LR = 0.68–0.73 mm (mean 0.70 mm). WR = 0.20–0.22 mm (mean 0.21 mm). WAR = 0.18–0.20 mm (mean 0.19 mm). LP = 0.69–0.84 mm (mean 0.78 mm). WP = 0.90–1.04 mm (mean 0.98 mm). LE = 1.40–1.55 mm (mean 1.48 mm). WE = 1.43–1.64 mm (mean 1.55 mm). $n = 5$ for all measurement variables. Habitus as shown in Figs. 1 and 2. Integument mostly brown to dark brown; apices of rostrum, prothorax, elytra, femora, and tibiae paler; antennae and tarsi much paler. Head, prothorax, and elytra mostly covered with narrow scales. Patches on middle of intervals VII conspicuous. Pygidium mostly covered with brownish hairs, with median stripe of white ovate scales along midline. Head finely, reticulately punctured; forehead between eyes narrow, strongly impressed,



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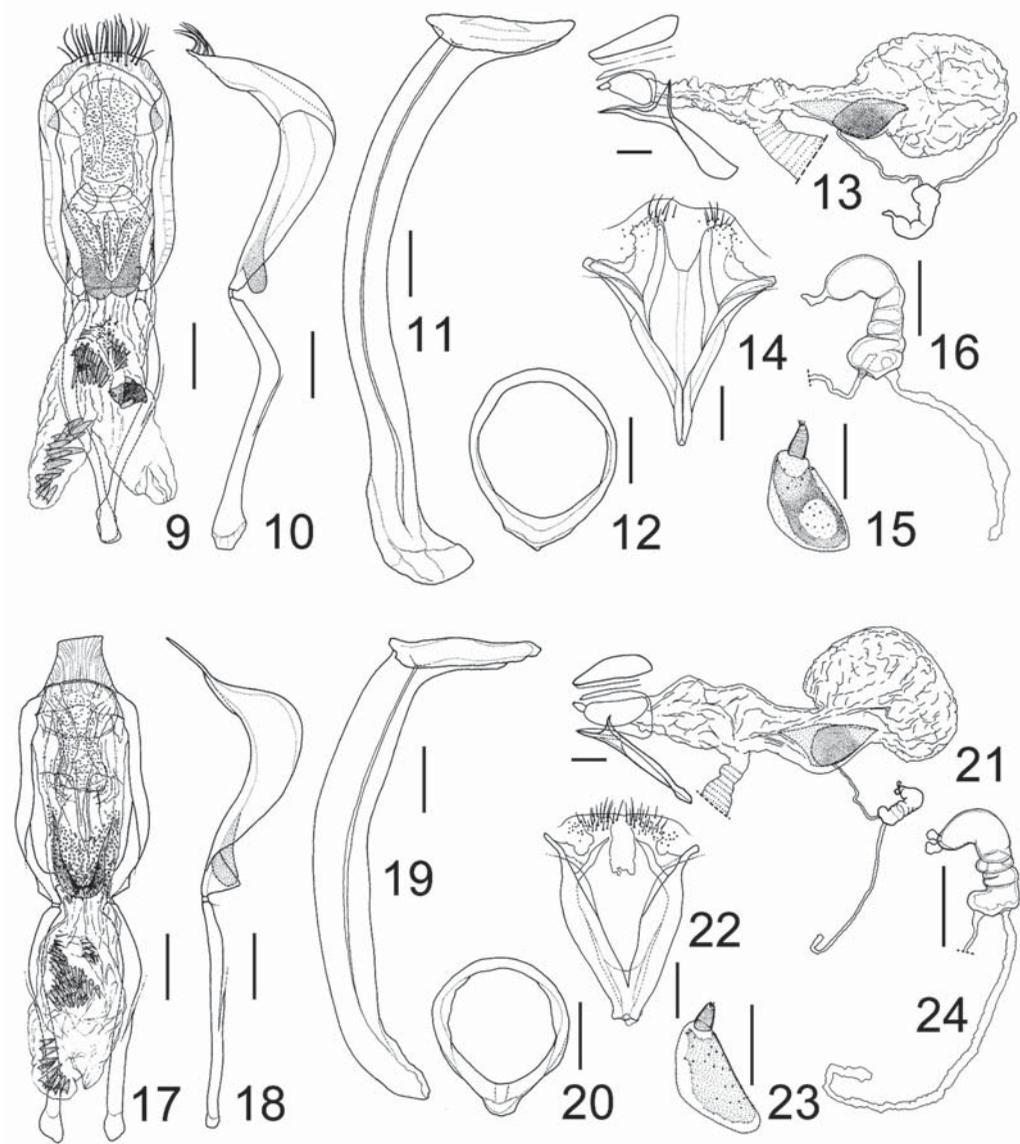


7



8

Figs. 1–8. *Orchestomerus* species, habitus. 1–2) *O. wickhami*, male; 3–4) *O. eisemani*, holotype male; 5–6) *O. marionis*, male; 7–8) *O. whiteheadi*, male.



Figs. 9–24. *Orchestomerus* species, male genitalia and female terminalia. *O. wickhami*: 9) Aedeagus, dorsal view; 10) Aedeagus, lateral view; 11) Sternite IX; 12) Tegmen; 13) Female terminalia; 14) Sternite VIII; 15) Coxite and stylus; 16) Spermatheca. *O. eisemani*: 17) Aedeagus, dorsal view; 18) Aedeagus, lateral view; 19) Sternite IX; 20) Tegmen; 21) Female terminalia; 22) Sternite VIII; 23) Coxite and stylus; 24) Spermatheca. Scale bar = 0.1 mm.

carinate along midline. Rostrum relatively slender, LR/WR 3.20–3.44 (mean 3.34), slightly shorter than or as long as prothorax, LR/LP 0.84–1.00 (mean 0.90), slightly wider than forehead, WR/WF 1.13–1.31 (mean 1.21), WAR/WF 1.00–1.23 (mean 1.08), weakly tricarinate along midline; apex subglabrous, slightly narrower than portion above antennal insertion, WR/WAR 1.06–1.17 (mean 1.12); sides widest at level between antennal inser-

tions. Antennae inserted just before middle of rostrum. Prothorax slightly wider than long, WP/LP 1.22–1.35 (mean 1.26); disc with pair of ridged, strong prominences; ridges precipitous. Elytra slightly shorter than or nearly as long as wide, LE/WE 0.94–0.98 (mean 0.96), nearly twice as long as prothorax, LE/LP 1.82–2.07 (mean 1.90), much wider than prothorax, WE/WP 1.57–1.60 (mean 1.58); intervals III, V, and VII with moderately

developed prominences on subbasal parts; prominences on intervals III and V short; granules on each interval minute. Fore and mid-tibiae not angulate basally on outer margins; mid-tibiae short and stout, mucronate apically; hind tibiae simple apically, not mucronate. Venter moderately shiny but subopaque in impressions; ventrites III and IV weakly concave in middle; ventrite V with strong lateral impressions; apical margin of ventrite V shallowly rounded produced in middle. Pygidium moderately convex, sulcate along midline. Spiculum gastrale (Fig. 11) longer than aedeagal body and its apodemes combined, moderately curved leftward. Tegmen (Fig. 12) with vestigial apodeme. Aedeagal body (Figs. 9, 10) robust, thick, and strongly curved ventrally in profile, with distorted U-shaped prominence on basal part; sides narrowest at base, strongly expanded to basal 1/4, slightly narrowed to middle, slightly widened to subapical part, then rapidly convergent apically; apex subtruncate, setiferous; apodeme nearly as long as body. Endophallus (Fig. 9) nearly as long as aedeagal body and its apodemes combined, basally with the following 4 structures: basal patch of coarse denticles, petrosal sclerite, smaller subbasal patch of smaller denticles, and small patch of acicular spicules; middle of median and apical parts minutely spiculate, respectively.

Female. LB = 1.90–2.19 mm (mean 2.09 mm). WF = 0.16–0.18 mm (mean 0.17 mm). LR = 0.69–0.76 mm (mean 0.74 mm). WR = 0.21–0.23 mm (mean 0.21 mm). WAR = 0.19–0.21 mm (mean 0.20 mm). LP = 0.75–0.85 mm (mean 0.82 mm). WP = 0.88–1.05 mm (mean 1.00 mm). LE = 1.33–1.56 mm (mean 1.48 mm). WE = 1.43–1.66 mm (mean 1.58 mm). $n = 5$ for all measurement variables. Rostrum barely more slender, LR/WR 3.33–3.53 (mean 3.44), slightly shorter than prothorax, LR/LP 0.90–0.92 (mean 0.91), slightly wider than forehead, WR/WF 1.18–1.29 (mean 1.24), WAR/WF 1.11–1.21 (mean 1.17); apex slightly narrower than portion above antennal insertion, WR/WAR 1.06–1.07 (mean 1.06). Antennae inserted at middle of rostrum. Prothorax slightly wider than long, WP/LP 1.17–1.25 (mean 1.22). Elytra slightly shorter than or nearly as long as wide, LE/WE 0.93–0.96 (mean 0.94), nearly 1.80 times as long as prothorax, LE/LP 1.77–1.86 (mean 1.82), much wider than prothorax, WE/WP 1.57–1.63 (mean 1.59). Tibiae not mucronate. Metasternum with deeper receptacle for rostrum. Ventrites I and II slightly inflated. Ventrites III and IV faintly impressed on middle. Ventrite V with triangular glabrous portion on middle. Pygidium slightly smaller, with lateral margins more rapidly narrowing to shorter lower margin. Terminalia as illustrated in Figs. 13–16. Sternite VIII (Fig. 14) robust, with very short apodemes. Oviposi-

tor (Figs. 13, 15) with large sclerite on each side of insertion of spermathecal duct; coxites (Fig. 15) nearly 3.0 times as long as styli; styli (Fig. 15) subcylindrical, nearly twice as long as broad, inserted apicolaterally. Spermatheca (Fig. 16) with simple cornu except apex bearing small process; ramus less-marked; collum well-marked, moderately convex; gland moderate in length, nearly twice as long as body. Otherwise, as in males.

Type Material. The holotype (MCZC) was not examined by us. Identification is based on a series of specimens from the Brownsville area (the type locality) matching the description given by Dietz (1896), as well as images of the holotype (MCZ 2007).

Material Examined. USA: TEXAS. Cameron County, Sabal Palm Grove Sanctuary: 6. vii. 1982, G.A.P. Gibson (1 male; CMNC); 25.84975, -97.41892, 3–4. xi. 2013, R.S. and C. Anderson, on *Cissus trifoliata*, 2013-209 (12 males and 6 females; CMNC, NIAES); 25.85158, -97.42028, 18-20.X.2008, palm forest margin, resaca bank, E.G. Riley-277, 109 (14 males, 11 females, TAMU). 25.84799, -97.41881, 17-30.X.2008, FIT ground palm forest, King & Riley-358 (1 female, TAMU). 25.84799, -97.41881, 28.II-12.III.2009, FIT ground palm forest, King & Riley-578 (1 female, TAMU). 25.85158, -97.42028, 6.XI.2009, M. Quinn & E.G. Riley-1450, beating palm forest margin, resaca bank (1 male, TAMU).

Distribution. USA (Texas) (MAP; teal place-marker). O'Brien and Wibmer (1982) list an Arkansas record but we are quite sure this is an error for *O. eisemani*. We have also confirmed via examination of specimens that the Salsbury (2000) record of *O. wickhami* is a misidentification of *Parauleutes nebulosus* (LeConte).

Natural History. Numerous adults of this species have been collected on *Cissus trifoliata* L. (Vitaceae) in the Sabal Palm Grove Sanctuary near Brownsville in extreme southern Texas.

Orchestomerus eisemani Yoshitake and Anderson, new species

(Figs. 3, 4, 17–24)

Orchestomerus wickhami; Eiseman 2014: 158 (biology).

Diagnosis. *Orchestomerus eisemani* closely resembles *O. wickhami* in general appearance, but can be readily distinguished from *O. wickhami* by the rostrum with apex as wide as portion above antennal insertions, weaker prominences on the middle of the pronotum, slightly longer elytra, deeper lateral impressions on abdominal ventrite 5, male abdominal ventrite 5 with a deeper median impression, which is covered with lanceolate to acicular

scales, and the aedeagus with a broad laminate apical projection.

Description. Male. LB = 2.16–2.20 mm. WF = 0.15–0.16 mm. LR = 0.75–0.79 mm. WR = 0.20 mm. WAR = 0.20 mm. LP = 0.79–0.83 mm. WP = 0.98–1.04 mm. LE = 1.58–1.61 mm. WE = 1.60–1.71 mm. $n = 2$ for all measurement variables. Habitus as shown in Figs. 3 and 4. Brown to dark brown in general appearance. Apex of rostrum, apices of elytra and femora, and tibiae tinged with red. Antennae and tarsi much paler. Body surface moderately shiny, except venter with stronger luster, thinly covered with ochreous secretion in life. Head mostly moderately clothed with brownish narrow scales; each scale truncate at apex; vertex and portions along eye margins covered with paler scales, mingled with white elliptic ones; forehead with stripe of light-colored scales. Rostrum covered with narrow to linear scales on basal 2/3, then covered with short hairs, which become minute and sparse toward apex. Prothorax mostly clothed with scales as those on head, except lateroventral parts with sparse, hair-like scales, with the following markings of white elliptic scales: antescutellar patch at middle of basal margin, dorsolateral stripe from base to subapical part on each side, and 3 obscure, small spots along apical margin; median prominences and lateral tubercles covered with dark scales. Elytra mostly clothed with brownish narrow scales, mottled with black and white ones; black scales narrow, forming conspicuous longitudinal patches on antemedian parts of intervals III and subbasal parts of intervals V, respectively; white scales narrow to elliptic, forming 2 obscure oblique bands; white patches on middle of intervals VII often conspicuous; suture with postscutellar patch of velvety black elliptic scales, which is followed by 2 rows of white elliptic scales; subapical calli covered with dark, narrow scales. Legs moderately covered with light-colored, narrow to linear scales, mingled with darker ones; each femur with 2 indefinite bands of dark scales, one on subbasal and another on subapical parts; tibiae covered with paler setae on apical part. Lateral pieces of meso- and metasterna mostly clothed with light-colored scales; mesepisterna clothed with ovate and narrow scales; mesepimera very densely covered with ovate to elliptic scales on upper 1/3; metepisterna with 2 patches of dark scales. Sterna densely clothed with light-colored elliptic to lanceolate scales, mingled with darker linear ones; scales become sparser on sides. Venter rather densely covered with white, elliptic scales on middle; ventrite I with basal and lateral margins fringed with sparse, white scales in a row; ventrites II–IV each with transverse row of white scales; ventrite V covered with suberect lanceolate to acicular scales on median impression, glabrous on lateral impressions; apical

margin of ventrite V shallowly roundly produced in middle. Pygidium densely covered with white, elliptic and brown hairs; white scales sometimes forming longitudinal stripe. Head coarsely reticulately punctured; forehead between eyes narrow, moderately impressed, carinate along midline. Rostrum relatively slender, LR/WR 3.75–3.94, slightly shorter than prothorax, LR/LP 0.95, slightly wider than forehead, WR/WF 1.23–1.33, longitudinally wrinkled-punctured and carinate along midline on basal 2/3; median carina flanked by 2 shorter keels; sides subparallel on basal 2/3, slightly narrowing before level between antennal insertions, then slightly widened apically; apex subglabrous, as wide as portion above antennal insertions, WR/WAR 1.00. Antennae inserted at middle of rostrum, with scape nearly as long as funicular segments I–IV combined. Prothorax slightly wider than long, WP/LP 1.24–1.26; pronotum reticulately punctured, with a pair of ridged prominences on middle; ridges obtuse; paired prominences sometimes weaker; lateral tubercles well-developed; sides subparallel on basal half, then rapidly narrowing to subapical constriction. Elytra subcordate, slightly shorter than or nearly as long as wide, LE/WE 0.94–0.98, nearly twice as long as prothorax, LE/LP 1.95–2.00, much wider than prothorax, WE/WP 1.64–1.65; intervals III, V, and VII with moderately developed prominences on subbasal parts; prominences on intervals III and V relatively long; granules on each interval minute; sides weakly bisinuate on basal half, then sharply narrowing to subapical calli, and finally shallowly rounded at apices. Tibiae mucronate on mid and hind legs; fore and mid-tibiae not angulate basally on outer margins; mid-tibiae relatively slender. Lateral pieces of meso- and metasterna opaque; metasterna sparsely punctured; mesepimera sparsely punctured, except upper 1/3 finely densely punctured; metepimera moderately punctured. Metasternum widely impressed and finely reticulately punctured; punctures become coarser and sparser on sides. Ventrite I flattened and finely densely punctured on middle, sparsely with coarse punctures along basal margin and on sides. Ventrites II–IV strongly concave and finely densely punctured on middle, each with transverse row of punctures on entire width except middle. Ventrite V densely, finely punctured, with deep impression on middle; lateral impressions very strong, opaque. Pygidium pentagonal, strongly convex, densely punctured, more or less sulcate along midline. Spiculum gastrale (Fig. 19) nearly as long as aedeagal body and its apodeme combined, moderately curved leftward. Tegmen (Fig. 20) with very short apodeme. Aedeagal body (Figs. 17, 18) robust, with U-shaped prominence on basal part, rather strongly curved and thick in profile; sides with subtriangular

laminae at base, strongly expanded to basal 1/3, slightly narrowing to middle, then rapidly convergent apically; apex produced into broad lamina, obliquely truncate; apodemes slightly shorter than body. Endophallus (Fig. 17) short, nearly as long as aedeagal body and its apodeme combined, basally with the following three patches: basal patch of coarse denticles, larger subbasal patch of smaller denticles and acicular spicules, and small patch of acicular spicules; median part densely spiculate; apical part minutely spiculate medially.

Female. LB = 2.20–2.25 mm. WF = 0.15–0.18 mm. LR = 0.83–0.88 mm. WR = 0.20–0.21 mm. WAR = 0.20–0.21 mm. LP = 0.83–0.86 mm. WP = 1.03–1.08 mm. LE = 1.63–1.64 mm. WE = 1.68–1.74 mm. $n = 2$ for all measurement variables. Rostrum slightly more slender, LR/WR 4.12–4.13, nearly as long as prothorax, LR/LP 1–1.01, slightly wider than forehead, WR/WF 1.21–1.33; apex as wide as portion above antennal insertions, WR/WAR 1.00. Antennae inserted just behind middle of rostrum. Prothorax slightly wider than long, WP/LP 1.24–1.25. Elytra slightly shorter than or nearly as long as wide, LE/WE 0.94–0.97, nearly twice as long as prothorax, LE/LP 1.90–1.97, much wider than prothorax, WE/WP 1.62–1.63. Tibiae not mucronate; mid-tibiae stouter. Ventrites I and II slightly inflated. Metasternum with deeper receptacle for rostrum. Ventrites III and IV faintly impressed on middle. Ventrite V with triangular glabrous portion on middle. Pygidium smaller, with lateral margins more rapidly narrowing to shorter lower margin. Terminalia as illustrated in Figs. 21–24. Sternum VIII (Fig. 22) robust, with vestigial apodemes. Ovipositor (Figs. 21, 23) with large sclerite on each side of insertion of spermathecal duct; coxites nearly 4 times as long as styli; styli subconical, nearly 1.5 times as long as broad, inserted apico-laterally. Spermatheca (Fig. 24) with cornu bilobed, bearing small process at apex of each lobe; ramus less-marked; collum well-marked, abruptly convex; gland long, nearly 3 times as long as body. Otherwise, as in males.

Type Material. HOLOTYPE: male (CMNC), “MA: Plymouth Co./Bridgewater, N. of Lake/Nippenicket, 16.viii.2013/emerg on 31VIII-5.IX. 2013/C.S. Eiseman, ex./*Parthenocissus* leaf mines” (typed on white card); “♂”; “*Orchestomerus wickhami*/Dtz./det. R. S. Anderson 2013” (handwritten on white card, partially typed); “HOLOTYPE/*Orchestomerus/eisemani* n.sp./des. Yoshitake & Anderson, 2014” (typed on red card). PARATYPES. USA: ALABAMA. Monroe County, 2 miles southwest Peterman, 31°34'22"N, 87°16'51"W, 21. iii.–12. iv. 2005, R.A. Wingard, by Lindgren funnel trap (1 male, MEM). ARKANSAS. Newton County, Buffalo National River, Trail to Fitton Cave 2 km northwest of Erbie Campground, 36°5'15"N,

93°13'54"W, 26–28. vi. 1994, C.E. Carlton, by flight intercept trap (1 female, LSAM). FLORIDA. Alachua County: 29°36'N, 82°22'W, 200 m, 4–11. iv. 1992, J. Pickering (1 female, CWOB); Gainesville, Beville Heights, 16–31. x. 1986, L.A. Stange (1 male, CWOB); Gainesville, 29°36.04'N, 82°21.90'W, 1–13.IV.2001, D.B. Wahl, malaise trap (1 male, TAMU). Paynes Prairie State Preserve, 15. v. 1991, Fairchild and Roberts, by malaise trap (1 male, CWOB). Highlands County, Archbold Biological Station: 14. v. 1979, H.V. Weems, Jr. and S. Halkin, by “INSECT FLIGHT TRAP” (1 female, CWOB); 2–4. iii. 1979, H.V. Weems, Jr. and S. Halkin, by “INSECT FLIGHT TRAP” (1 female, CWOB). Leon County. Appalachian National Forest, FS 390, 30°21.884'N 84°40.774'W, malaise trap, bottomland, 21–28 May 2005, S. Joshi (1 female, CMNC). Tallahassee: 5. iii. 1976, C.W. O'Brien, from hardwood litter (1 female, NIAES); 27. x. 1976, L.D. Justice, from hardwood litter (1 male, NIAES); 11. xi. 1976, C.W. O'Brien and G.B. Marshall, from hardwood litter (1 male, CWOB); 19. ix. 1977, C.W. O'Brien et al., from mixed-hardwood litter (1 male, CWOB); 18. i. 1983, G.B. Marshall, from hardwood litter (1 male, 1 female, CWOB). Wakulla County, Wakulla Springs State Park, “summer 2000”, by pitfall trap in beech woods, C.W. O'Brien (1 male, CWOB). Walton County, Defuniak Springs, 21–28. vii. 1991, Winegarner and Deyrup, by malaise trap in woods near stream (1 female, CWOB). INDIANA. Tippecanoe County, 11 miles west of Lafayette, Ross Hills Park, 40°24'14.78"N 87°04'20.72"W: 15. v. 2013, K.E. Schnepf, on Virginia creeper (1 male, 1 female, KESC); 10. ii. 2009, K.E. Schnepf, sifted from leaf litter (1 male, CMNC). KANSAS. Douglas County. Clinton Lake, 1 km southwest of dam, off east of 900 Road, 38.901°N, 95.33459°W, 16. x. 2010, Z.H. Falin (1 female, SEMC [KUNHM-ENT; SEMC0928475]). 3.2 km north of Baldwin, Breidenthal Reserve, 7–14. vi. 1996, M. Panaras (1 female, SEMC [KUNHM-ENT; SM0132962]). Breidenthal Reserve: 2 miles north of Baldwin, 5–19. vi. 1982, D.B. Wahl (1 female, SEMC [KUNHM-ENT; SM0348413]). K.U. Natural History Reserve, 5 mi northeast Lawrence, 1. vii. 1982, D.B. Wahl (1 female, CNCI). Jefferson County, The Falin Property, 1.5 km north of junction of 94th Street and Kingman Road, 39°13.38'N, 95°24.24'W, 20–27. vi. 2005, Z.H. Falin (1 female, SEMC [KUNHM-ENT; SM0707952]). KENTUCKY. Edmonson County, Mammoth Cave National Park, 15. v. - 20. viii. 1983, S&J Peck, mesic forest (1 male, CNCI). Rowan County, 24 km southwest Morehead Cave Run Lake, 14. v. - 2. viii. 1983, S&J Peck, Fagus (1 male, CNCI). LOUISIANA. Bossier Parish, Barksdale Air Force Base, 32°30'58"N, 93°32'44"W, 30. iv.–6. v. 1996,

D.M. Pollock, malaise trap in pine/hard wood forest (1 female, MEM). West Feliciana Parish, Feliciana Preserve: 30°47'N, 91°15'W, 22–29. v. 2005, A. Tishechkin and S. Gil, by flight intercept trap (1 male, CWOB); 15. vi.–7. vii. 2001, A. Cline and A. Tishechkin, by flight intercept trap (1 female, CMNC); 30°47'N, 91°15'W, 11. v.–4. vii. 2003, A. Tishechkin, by flight intercept trap (1 male, CWOB); 29. v.–12. vi. 2005, A. Tishechkin, by flight intercept trap (4 males, ASUHC, CMNC, CWOB); Tunica Wildlife Management Area, 30°55'N, 91°30'W, 14–30. ix. 1998, C. Carlton, J. Johnson and A. Tishechkin, by flight intercept trap (1 female, CWOB). MARYLAND. College Park, 18. vii. 1942, L.J. Bottimer, Virginia creeper (2 males, 3 females, CNCI). Allegany County, Little Orleans, 1. vi. 2001, C.R. Bartlett (1 female, CWOB). Montgomery County, 4 miles southwest of Ashton, 39°06'30"N, 77°01'30"W, 6. vii. 2011, G.F. Hevel, by flight intercept trap (1 female, USNM). Prince George's County, 39°03'N, 76°47'W, "31-07 Sept. 1992," J. Pickering (1 male, CWOB). MASSACHUSETTS. Plymouth County: same data as the holotype (1 male, 1 female, CMNC); Ragged Island, 42°15'26.1"N, 70°53'26.7"W, 22. vi. 2006, J. Rykken, by malaise trap, RGMAL-1 12.06 (1 female, CMNC). MISSISSIPPI. Grenada County, T21N, R2E, Sec. 12, 13N and R3E, Sec. 7S, 18N: 26. vi.–2. vii. 1991, P. Miller, by malaise trap in woods (2 males, MEM); 18. v.–2. vi. 1992, G. Snodgrass, malaise trap in woods (1 female, MEM). Prentiss County, Natchez Trace, mi 288.4, 34°29'04"N, 88°23'42"W, 21. vii. 2003, J.A. MacGown, from soil and litter under and near rotting log in deciduous forest (1 female, MEM). NORTH CAROLINA. Durham County, Durham, Strebor Street, 29.v.2015, emerged 14.vi.2015, T.S. Feldman, ex. *Parthenocissus quinquefolia*, #CSE 1617 (3 females, CMNC, USNM). 29.v.2015, emerged 24.vi.2015, T.S. Feldman and C.S. Eiseman, ex. *Parthenocissus quinquefolia*, #CSE 1675 (3 males, 1 female CMNC). OHIO. Hocking County, Conkle's Hollow State Park, 12. viii. 1979, L. E. Watrous, from litter near swamp (1 female, CWOB). Lawrence County, Wayne National Forest, Sharps Creek, Bluegrass Trail, 7–28. vi. 1995, P. W. Kovarik, by flight intercept trap (1 female, CWOB). TENNESSEE. Cocke County, Great Smoky Mountains National Park, ATBI Plot, Snakeden Ridge, malaise trap 1920010801, 16 Jul – 1 Aug, 2001, I.C. Stocks and K. Pitz (1 female, CMNC). Davidson County, Couchville Glade, 36°06'05"N, 86°31'47"W, 10. vi. 1997, G. Hankins, in Cedar Glade, W.H. Cross Expedition (1 female, MEM). Sevier County, Great Smoky Mountains National Park, ATBI Plot, Twin Creeks, malaise trap 0120010910, 83°29.94' W, 35°41.10'N, 27 Aug – 10 Sept

2001, I.C. Stocks (1 male, LSAM); malaise trap 0120000703, 19 Jun – 3 Jul, 2000, Parker, Stocks and Peterson (1 female, LSAM); Goshen Prong, malaise trap 2120010813, 83°32'34"W, 35°36'38"N, 30 Jul – 13 Aug, 2001, I.C. Stocks (1 female, LSAM); malaise trap 2120010618, 7–18 Jun, 2001, I.C. Stocks and M. Williams (1 female, LSAM). TEXAS. Sabine County, 9 miles east Hemphill, 'beech bottom', 20.III.–29.IV.1990, R.Anderson & E. Morris, flight intercept trap, beech-magnolia forest (1 female, TAMU). 6-16.VIII.1989, R.Anderson & E. Morris, flight intercept trap, beech-magnolia forest (1 male, CMNC). 25.VIII.–10.IX.1989, R.Anderson & E. Morris, flight intercept trap, beech-magnolia forest (1 female, TAMU). Williamson County, 6.VI.1959, S.D. and H.R. Burke (1 female, TAMU). VIRGINIA. Charles City County, VCU Rice Center, trap site 4, 0.4 miles south of Junction of State Highway 5 and Kimages Road, N37.32693, W077.19618, 17 vi.–18. vii. 2010, A.V. Evans, by malaise trap in deciduous woods (1 female, AVEC). Wise County, Powell Mountain Karst Preserve, ca. 1.3 km East of Cracker Neck Church, N36.8538533, W082.6998265, 13–27. v. 2009, C.S. Hobson and J.F. Townsend, by malaise trap on cedar ridge (1 male, VMNH). Virginia Beach, City Camp Pendleton Annex, northwest of Junction of S. Birdneck and Washington Roads, N36.81385, W075.97079, 22. vii.–19. viii. 2009, A.V. Evans, by malaise trap (1 female, CMNC). WEST VIRGINIA. Hardy County, Moorefield, 22. vi. 1976, W. Northeimer and K. Elrod, by malaise trap (1 female, CWOB).

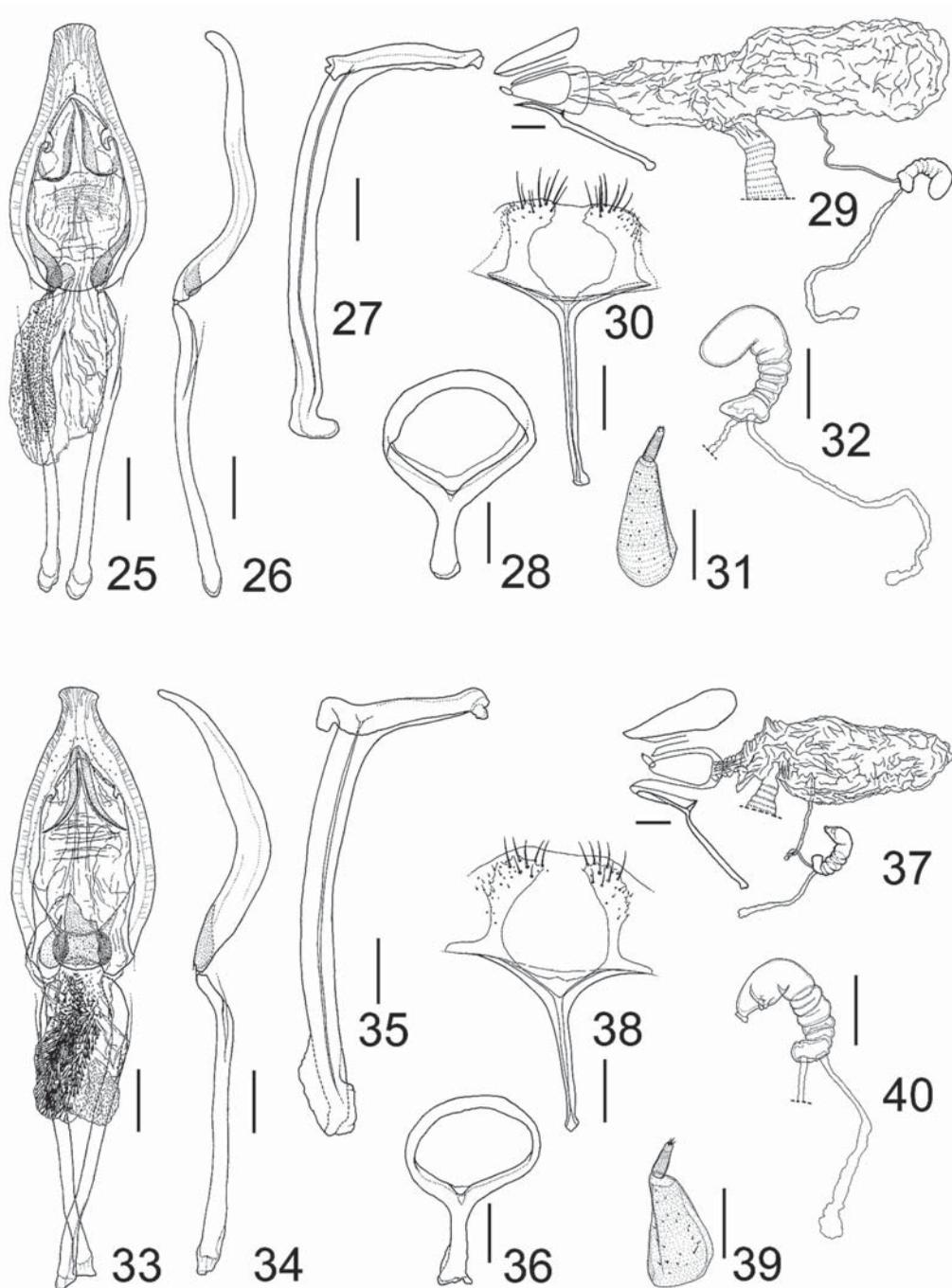
Distribution. USA (Alabama, Arkansas, Florida, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, North Carolina, Ohio, Tennessee, Texas, Virginia, West Virginia) (**MAP**; yellow placemaker).

Natural History. Eiseman (2014) recorded this species as a leaf miner of Virginia creeper in Massachusetts. Specimens from North Carolina were also reared from Virginia creeper, and two specimens from Indiana and five specimens from Maryland were also collected on Virginia creeper.

***Orchestomerus marionis* (Fall, 1913),
resurrected name and new combination**
(Figs. 5, 6, 25–32)

Auleutes marionis Fall 1913: 68 (type locality: "Marion, Massachusetts"). Blatchley and Leng 1916: 434; O'Brien and Wibmer 1982: 171; Downie and Arnett 1996: 1597.

Diagnosis. *Orchestomerus marionis* resembles *O. whiteheadi* in general appearance, but is readily separable from it by the following points: body mostly black; rostrum slender; prothorax roundly



Figs. 25–40. *Orchestomerus* species, male genitalia and female terminalia. *O. marionis*: 25) Aedeagus, dorsal view; 26) Aedeagus, lateral view; 27) Sternite IX; 28) Tegmen; 29) Female terminalia; 30) Sternite VIII; 31) Coxite and stylus; 32) Spermatheca. *O. whiteheadi*: 33) Aedeagus, dorsal view; 34) Aedeagus, lateral view; 35) Sternite IX; 36) Tegmen; 37) Female terminalia; 38) Sternite VIII; 39) Coxite and stylus; 40) Spermatheca. Scale bar = 0.1 mm.

narrowing from middle to subapical calli; median paired prominences on pronotum weak and obtuse; elytral intervals minutely granulate, except subapical calli with larger and sharper granules; elytral sides definitely bisinuate on basal half of each side; middle and hind tibiae mucronate in males; corbels basally definitely angulate on middle and hind legs; and apical margin of male abdominal ventrite 5 weakly roundly produced in the middle.

Redescription. Male. LB = 2.20–2.53 mm (mean 2.35 mm). WF = 0.18–0.21 mm (mean 0.19 mm). LR = 0.83–0.96 mm (mean 0.88 mm). WR = 0.20–0.23 mm (mean 0.21 mm). WAR = 0.21–0.23 mm (mean 0.22 mm). LP = 0.81–0.95 mm (mean 0.88 mm). WP = 0.95–1.14 mm (mean 1.04 mm). LE = 1.58–1.81 mm (mean 1.68 mm). WE = 1.60–1.91 mm (mean 1.74 mm). $n = 5$ for all measurement variables. Habitus as shown in Figs. 5 and 6. Integument mostly black, except apices of rostrum, prothorax, elytra, femora, and tibiae tinged with red; antennae and tarsi paler. Body mostly covered with hair-like to linear scales; head covered with light-colored scales, except median part with dark scales; prothorax and elytra mostly covered with dark scales, mottled with light-colored scales, mingled with white ovate to elliptic scales. Pygidium mostly covered with brownish hairs and hair-like scales, except lower margin fringed with white scales. Head coarsely reticulately punctured; forehead between eyes relatively wide, weakly impressed, not carinate. Rostrum relatively slender, LR/WR 3.72–4.38 (mean 4.13), nearly as long as prothorax, LR/LP 0.97–1.03 (mean 1.01), as wide as or slightly wider than forehead, WR/WF 1.00–1.29 (mean 1.11), WAR/WF 1.06–1.29 (mean 1.15), carinate from base to subapical part along midline; carina flanked by two shorter carinae on basal half; apex subglabrous, nearly as wide as portion above antennal insertions, WR/WAR 0.95–1.00 (mean 0.98). Antennae inserted at middle of rostrum. Prothorax slightly wider than long, WP/LP 1.17–1.20 (mean 1.19); pronotum with a pair of weak, obtuse prominences on middle, not ridged; sides roundly narrowing from middle to subapical calli. Elytra nearly as long as wide, LE/WE 0.95–0.99 (mean 0.97), slightly less than twice as long as prothorax, LE/LP 1.90–1.95 (mean 1.92), much wider than prothorax, WE/WP 1.65–1.70 (mean 1.68); granules on each interval minute, except subapical calli with larger and sharper granules; intervals III, V, and VII with well-developed, obtuse prominences on subbasal parts, respectively; sides definitely bisinuate on basal half. Metasternal receptacle deep, terminated apically in U-shaped margin. Legs relatively stout; mid- and hind tibiae definitely angulate at base of each corbel and mucronate apically; mid-tibiae short and stout, not angulate basally on outer mar-

gins. Venter subopaque, weakly shiny; ventrites III and IV flattened on middle; ventrite V moderately impressed on middle; apical margin of ventrite V shallowly roundly produced in the middle, with weak lateral impressions. Pygidium evenly moderately convex, not sulcate. Spiculum gastrale (Fig. 27) short, slightly longer than aedeagal body or its apodeme, weakly curved leftward. Tegmen (Fig. 28) with well-developed apodeme, which is nearly half as long as diameter of ring. Aedeagal body (Figs. 25, 26) relatively slender, narrowest at base, strongly expanded to basal 1/4, strongly narrowing to middle, then gradually narrowing apically, weakly expanded just before apex, and finally shallowly rounded at apex, with a pair of weak slender prominences on basal part, thin, weakly bisinuate and barely tapered apically in profile; apodeme nearly as long as body. Endophallus (Fig. 25) relatively short, slightly longer than aedeagal body or its apodeme, with longitudinal patch of small conical spicules from base to postmedian part, bearing a subtriangular plate-like sclerite on middle, minutely spiculate on anti-median part; apical part with a pair of slender, well-pigmented portions.

Female. LB = 2.31–2.50 mm (mean 2.42 mm). WF = 0.19–0.21 mm (mean 0.20 mm). LR = 0.90–0.95 mm (mean 0.93 mm). WR = 0.21–0.23 mm (mean 0.22 mm). WAR = 0.22–0.23 mm (mean 0.22 mm). LP = 0.85–0.95 mm (mean 0.91 mm). WP = 0.99–1.15 mm (mean 1.08 mm). LE = 1.68–1.84 mm (mean 1.75 mm). WE = 1.67–1.89 mm (mean 1.79 mm). $n = 5$ for all measurement variables. Rostrum barely slenderer, LR/WR 4.19–4.41 (mean 4.31), nearly as long as prothorax, LR/LP 0.99–1.06 (mean 1.02), nearly as wide as or slightly wider than forehead, WR/WF 1.03–1.13 (mean 1.09), WAR/WF 1.08–1.20 (mean 1.13), with shorter carina, which is limited on basal half; apex as long as or barely wider than portion above antennal insertions, WR/WAR 0.92–1.00 (mean 0.96). Prothorax slightly wider than long, WP/LP 1.17–1.22 (mean 1.19). Elytra nearly as long as wide, LE/WE 0.95–1.00 (mean 0.98), slightly less than twice as long as prothorax, LE/LP 1.79–1.94 (mean 1.84), much wider than prothorax, WE/WP 1.62–1.70 (mean 1.66). Tibiae simple, not mucronate. Metasternum with deeper receptacle for rostrum; apical margin of receptacle V-shaped. Ventrites I and II slightly inflated. Ventrites III and IV simple, not flattened on middle. Ventrite V simple, neither with impression nor glabrous portion on middle: lateral impressions much weaker, often vestigial. Pygidium slightly smaller, weakly convex, with lateral margins more rapidly narrowing to shorter lower margin. Terminalia as illustrated in Figs. 29–32. Sternite VIII (Fig. 30) simple, with apodemes moderate in length, nearly twice as long

as arms. Ovipositor (Figs. 29, 31) simple, lacking sclerotized portion; coxites (Fig. 31) nearly 3 times as long as styli; styli (Fig. 31) slender, subcylindrical, nearly three times as long as wide, inserted apically. Spermatheca (Fig. 32) with cornu simple, lacking remarkable structures; ramus weakly convex; collum well-marked, rather sharply projected; gland relatively long, nearly 3 times as long as body. Otherwise, as in males.

Type Material. The holotype (MCZC) was not examined by us. Our identification was based on three specimens compared with the holotype of *A. marionis* by C. W. O'Brien in 1980. Additionally, Fall's (1913) statement accompanying the original description that "the facies is almost precisely that of *Craponius inaequalis*, the generic characters are however, those of *Auleutes*" fits well with our specimens of *A. marionis*, which are very similar in habitus to *C. inaequalis* except for the externally subbasally dentate tibiae in the latter.

Material Examined. USA: FLORIDA. Gadsden County, 4 miles southeast of Havana, at junction of Highway 153 and Ochlockonee River, 13. i. 2000, C. W. O'Brien and G. B. Marshall, berlese sifted mixed hardwood litter (1 female, CWOB). Marion County, 2.5 miles south-southeast Micanopy, 6-13. III.2001, D.B. Wahl (1 male, TAMU), GEORGIA. Clarke County, Whitehall Forest: 18. iv. 1975, R. Turnbow (2 males, ASUHC, CWOB); 2-7. iv. 1976, R. Turnbow, Leggett trap (1 male, CMNC); 16. iv. 1975, R. Turnbow (1 male, CWOB); 20. iv. 1975, R. Turnbow (1 female, CWOB). Decatur County Experimental Forest, on Highway 97 near Faceville, 2. vi. 2000, C. W. O'Brien, ex wild grape (1 female, CWOB). INDIANA. Brown County, Bear Wallow, 1. vi. 1977, J. E. Wappes (1 female, NIAES). MISSISSIPPI. Claiborne County, 4 miles west of Port Gibson, 25. iv. 1973, W. H. Cross, in Leggett trap (1 male, NIAES). George County, Lucedale, 24. iv. 1996, C.W.O'Brien (1 female, CWOB). MISSOURI. Barry County, Roaring River Park, Camp Area #1, 3. v. 1980, D. L. Caldwell, on wild grape (1 male, 1 female, CWOB). NORTH CAROLINA. Lewiston, Peanut Belt Research Station, 2. viii. 1963, J. F. Cornell (1 female, CWOB).

Distribution. USA (Florida, Georgia, Massachusetts, Missouri, Mississippi) (MAP; blue placemaker).

Natural History. Some specimens were taken on wild grape, *Vitis* sp. (Vitaceae), in Georgia and Missouri. One specimen was collected by sifting leaf litter in winter in Florida.

***Orchestomerus whiteheadi* Colonnelli, 1991**

(Figs. 7, 8, 33-40)

Orchestomerus whiteheadi Colonnelli 1991: 274 (type locality: "Arizona, Santa Rita Mts."). Korotyayev and Anderson 2002: 753 (biology); Colonnelli 2004: 77 (catalog).

Diagnosis. *Orchestomerus whiteheadi* is characterized mainly by the following points: body mostly dark brown; rostrum much stouter; prothorax with sides narrowing in straight line from middle to subapical calli; median paired prominences on pronotum stronger and sharper; elytral intervals rugged with relatively large and sharp granules; elytral sides hardly bisinuate on basal half of each side; middle tibiae mucronate in males, but hind tibiae simple apically in both sexes; corbels basally indefinitely angulate on middle and hind legs; and apical margin of male abdominal ventrite 5 strongly roundly produced in the middle.

Redescription. Male. LB = 2.25-2.53 mm (mean 2.41 mm). WF = 0.23-0.26 mm (mean 0.24 mm). LR = 0.83-0.93 mm (mean 0.88 mm). WR = 0.24-0.28 mm (mean 0.25 mm). WAR = 0.25-0.28 mm (mean 0.26 mm). LP = 0.84-0.98 mm (mean 0.93 mm). WP = 1.08-1.21 mm (mean 1.17 mm). LE = 1.60-1.81 mm (mean 1.71 mm). WE = 1.71-1.96 mm (mean 1.85 mm). $n = 5$ for all measurement variables. Habitus as shown in Figs. 7 and 8. Integument mostly dark brown, except apices of rostrum, prothorax, elytra, femora, and tibiae tinged with red; antennae and tarsi paler. Body mostly covered with hair-like to linear scales; head mostly covered with light-colored scales; prothorax and elytra mottled with dark and light-colored scales, sparsely mingled with white, ovate to elliptic scales. Pygidium mostly covered with brownish hairs and hair-like scales, except lower margin fringed with white scales. Head coarsely, reticulately punctured; forehead between eyes relatively wide, weakly impressed, carinate along midline. Rostrum relatively stout, LR/WR 3.32-3.70 (mean 3.50), nearly as long as prothorax, LR/LP 0.93-0.99 (mean 0.95), nearly as wide as forehead, WR/WF 1.02-1.06 (mean 1.05), WAR/WF 1.05-1.11 (mean 1.07), strongly carinate from base to subapical part along midline; carina flanked by 2 shorter carinae on basal half; apex subglabrous, nearly as wide as portion above antennal insertions, WR/WAR 0.95-1.00 (mean 0.98). Antennae inserted at middle of rostrum. Prothorax slightly wider than long, WP/LP 1.24-1.28 (mean 1.25); pronotum with a pair of acute prominences on middle, not ridged; sides narrowing in straight line from middle to subapical calli. Elytra nearly as long as wide, LE/WE 0.91-0.94 (mean 0.93), slightly less than twice as long as prothorax, LE/LP 1.79-1.91 (mean 1.84), much wider than prothorax, WE/WP 1.55-1.62 (mean 1.59); each interval rugged with relatively large and sharp granules; intervals III, V, and VII with well-developed, precipitous prominences on subbasal parts, respectively; sides hardly bisinuate on basal half. Metasternum with relatively shallow receptacle for rostrum. Mid- and hind tibiae faintly angulate at base of each corbel; mid-tibiae with

indefinite angles basally on outer margins, short and stout, mucronate apically; hind tibiae simple apically, not mucronate. Venter subopaque, weakly shiny; ventrites III and IV flattened on middle; apical margin of ventrite V strongly roundly produced in the middle, with weak lateral impressions. Pygidium evenly moderately convex, not sulcate. Spiculum gastrale (Fig. 35) short, slightly longer than aedeagal body or its apodeme, weakly curved leftward. Tegmen (Fig. 36) with well-developed apodeme, which is nearly half as long as diameter of ring. Aedeagal body (Figs. 33, 34) relatively slender, narrowest at base, strongly expanded to basal 1/4, gradually narrowing to subapical part, then abruptly widened just behind apex, shallowly rounded at apex, weakly prominent on middle of basal part, thin, moderately curved ventrally, and tapered apically in profile; apodeme nearly as long as body. Endophallus (Fig. 33) relatively short, much shorter than aedeagal body or its apodeme, basally with small and large patches of spicules; small patch composed of minute acicular spicules; large patch composed of larger acicular spicules, extending to postmedian part; spicules of larger patch become smaller and sparser apically; median part with very sparse, minute spicules, in addition to 2 flat sclerites; one of sclerites larger, plate-like, and another smaller, rain drop-shaped; apical part with a pair of slender, well-pigmented portions.

Female. LB = 2.29–2.78 mm (mean 2.61 mm). WF = 0.24–0.29 mm (mean 0.26 mm). LR = 0.88–1.05 mm (mean 1.00 mm). WR = 0.24–0.29 mm (mean 0.27 mm). WAR = 0.25–0.31 mm (mean 0.29 mm). LP = 0.84–1.09 mm (mean 1.02 mm). WP = 1.09–1.33 mm (mean 1.25 mm). LE = 1.63–1.98 (mean 1.86 mm). WE = 1.74–2.15 mm (mean 2.02 mm). $n = 5$ for all measurement variables. Rostrum barely more slender, LR/WR 3.62–4.05 (mean 3.77), nearly as long as prothorax, LR/LP 0.96–1.04 (mean 0.99), nearly as wide as or barely wider than forehead, WR/WF 1.00–1.07 (mean 1.01), WAR/WF 1.03–1.14 (mean 1.09), with shorter carina, which is limited on basal half; apex slightly wider than portion above antennal insertions, WR/WAR 0.90–0.97 (mean 0.93). Prothorax slightly wider than long, WP/LP 1.19–1.30 (mean 1.23). Elytra slightly shorter than wide, LE/WE 0.90–0.94 (mean 0.92), less than twice as long as prothorax, LE/LP 1.79–1.94 (mean 1.84), much wider than prothorax, WE/WP 1.58–1.64 (mean 1.62). Tibiae simple, not mucronate. Metasternum with deeper receptacle for rostrum. Ventrites I and II slightly inflated. Ventrites III and IV simple, not flattened on middle. Ventrite V simple, neither with impression nor glabrous portion on middle; lateral impressions weaker. Pygidium slightly smaller, with lateral margins more rapidly narrowing to shorter lower margin. Terminalia as illustrated in Figs. 37–40.

Sternite VIII (Fig. 38) simple, with apodemes short, nearly as long as arms. Ovipositor (Figs. 37, 39) simple, lacking sclerotized portion; coxites (Fig. 39) nearly 3 times as long as styli; styli (Fig. 39) slender, subcylindrical, more than twice as long as broad, inserted apically. Spermatheca (Fig. 40) with cornu bilobed, bearing short projection at apex of each lobe; ramus less-marked; collum well-marked, abruptly convex; gland moderate in length, nearly twice as long as body. Otherwise, as in males.

Type Material. The holotype (USNM, BLNO 003146) and 23 paratypes were examined by HY in 2012. In addition, a pair of paratypes exchanged between USNM and NIAES were examined in detail for this study.

Material Examined. USA: ARIZONA. Cochise County, Chiricahua Mountains: 3 km southwest of Portal, 1,646 m, 24. vii. 1989, R. Anderson, on *Vitis arizonica*, 89-17 (2 males, 2 females, CMNC); 1.3 km east Southwestern Research Station, 1,606 m, 31.8815-109.1932, 5.viii.2014, R. Anderson, beating wild grape (6 males, 4 females, CMNC); 2.5 miles Southwest of Portal, 5,000', 10. viii. 1983, R. Anderson (5 males, 5 females, CMNC, NIAES); Cave Creek Canyon, 2.0 miles west of Portal, 27. vii. 1982, R. S. Anderson (3 males, 5 females, CMNC); Idylwild Campground, 6. viii. 1986, M. A. Ivie, beaten from wild grape (4 females, CMNC); Pinery Canyon, 6,600', 22. vi. 1956, H. & A. Howden (1 male, 1 female, CMNC); 3 miles northwest of Portal, 13. vii. 1973, S. McCleve, on wild *Vitis* (1 female, CMNC). Cochise County, Huachuca Mountains: Carr Canyon, 30. vi. 1956, H. & A. Howden (1 female, CMNC). Santa Cruz County: 3.2 km south Pena Blanca Lake, 1,250 m, 28. vii. 1989, R. Anderson, 89-31 (1 female, CMNC); Sycamore Canyon, 9 miles west Pena Blanca Lake, 4,100', 12. viii. 1983, R. Anderson, in oak savanna (1 male, 1 female, CMNC). NEW MEXICO. Hidalgo County, Peloncillo Mountains: Clanton Draw, 1,645 m, 9. vii. 1979, S. McCleve (1 female, CMNC).

Distribution. USA (Arizona, New Mexico) (MAP; red placemaker).

Natural History. Adults of this species are frequently beaten from wild grape, *Vitis arizonica* Engelm., in the mountains of southern Arizona.

KEY TO THE SPECIES OF *ORCHESTOMERUS* IN THE USA

1. Body mostly covered with narrow scales, which are truncate apically. Median paired prominences on pronotum ridged.....2
- 1'. Body mostly covered with hair-like to linear scales, which are narrowed apically. Median paired prominences on pronotum not ridged3

- 2. Ridges on median paired prominences on pronotum sharp. Male mid-tibiae mucronate, hind tibiae not mucronate in either sex. Lateral impressions on abdominal ventrite 5 shallower. Median impression on male abdominal ventrite 5 smaller, covered with oval to elliptic scales. Aedeagus with apical setae and lacking broad laminate apical projection *O. wickhami*
- 2'. Ridges on median paired prominences on pronotum obtuse. Male mid- and hind tibiae mucronate. Lateral impressions on abdominal ventrite 5 deeper. Median impression on male abdominal ventrite 5 larger, covered with lanceolate to acicular scales. Aedeagus with broad laminate apical projection and lacking apical setae *O. eisemani*
- 3. Body mostly black. Prothorax roundly narrowing from middle to subapical calli. Median paired prominences on pronotum weak and obtuse. Elytral intervals mostly minutely granulate. Sides of elytra definitely bisinuate on basal half of each side. Mid- and hind tibiae mucronate in males *O. marionis*
- 3'. Body mostly dark brown. Prothorax with sides narrowing straight from middle to subapical calli. Median paired prominences on pronotum stronger and sharper. Elytral intervals with larger and sharper granules. Sides of elytra hardly bisinuate on basal half of each side. Mid-tibiae mucronate in males, hind tibiae not mucronate in either sex *O. whiteheadi*

**Taxonomic Identity of *Orchestomerus ulkei*
Dietz, 1896**

Orchestomerus ulkei was described to accommodate a single specimen from New York. Dietz (1896) noted in the description that the anterior and mid-femora of the holotype are different on the left ('slender, scarcely clavate') and right

('flattened and impressed near the apex') sides. Not knowing which of these conditions typically applies to the species, he suggested the genus name *Platyeristes* Dietz, 1896 conditionally in case additional specimens would confirm the femoral structures seen on the right leg. Our examination of the holotype showed the specimen to be teneral and the apparently differently shaped femora (flattened and impressed) to be an artefact caused by deformed soft cuticle. We dissected the male holotype and found it clearly conspecific with *Auleutes epilobii* (Paykull, 1800), thus *O. ulkei* Dietz, 1896 is here considered a new junior subjective synonym of *A. epilobii* and *Platyeristes* a new junior synonym of *Auleutes* Dietz. Korotyaev (2012) provided additional diagnostic characters of *A. epilobii* when describing *Auleutes alexanderi* Korotyaev, and the holotype of *O. ulkei* closely matches his diagnosis. Also affected by the above synonymies is *Auleutes marionis* Fall, erroneously placed by Colonnelli (1991) as a junior synonym of *O. ulkei*. Dr. Boris Korotyaev, who presently has the type specimen of *A. marionis* on loan from MCZC, informed us that he considers *A. marionis* as distinct from *A. epilobii* and likely not a species of *Auleutes*. Since we consider *A. marionis* to be a species of *Orchestomerus*, it is removed here from synonymy with *O. ulkei* and reinstated as a valid name in *Orchestomerus*.

***Auleutes epilobii* (Paykull, 1800)**
(Figs. 41–43)

Curculio epilobii Paykull 1800: 259 (type locality: Sweden).
Orchestomerus ulkei Dietz 1896: 413 (type locality: "Hab. – New York."). **New synonymy.**
Auleutes epilobii: Korotyaev 2012: 401 (in key).
 See Colonnelli (2004) for further synonyms.

Identification. See Korotyaev (2012) for identification of this species.



Figs. 41–43. Holotype of *Orchestomerus ulkei* (= *Auleutes epilobii*). 41) Dorsal habitus; 42) Lateral habitus; 43) Data labels.

Type Material. Holotype of *Orchestomerus ulkei* Dietz (Figs. 1–3): male (CMNH), “N. Y” (typed on white card); (red square card); “*Henry Ulke/Beetle Coll/CMNH Acc./No. 1645*” (hand-written on green mesh card); “*Orchestomerus/ulkei Dietz/type*” (hand-written on white card). Holotype of *Curculio epilobii* Paykull not examined, repository unknown (Colonnelli 1993).

Material Examined. CANADA: ALBERTA. Peace River Regional District, Running Lake Campground, 20km north of Worseley, 4. vii. 1984, V. Adamski and A. Finnamore (1 male, CMNC [CNC COLEOPT #04-5307]). Wandering River Campground, 5–7. vi. 1985, C. and A. v. Nidek (1 female, CMNC [CNC COLEOPT #04-5314]). ONTARIO. Kirkland Lake, 25. vi. 1980, J. Cashaback (1 female, CMNC [CNC COLEOPT #04-5312]). QUÉBEC. Sherrington, 20. vi. 1990, S. Côté (1 male, 1 female, CMNC [CNC COLEOPT #04-5308, #04-5309]). Sainte-Clotilde: 28. vi. 1990, S. Côté (1 female, CMNC [CNC COLEOPT #04-5310]); 20. vi. 1990, S. Côté (1 male, CMNC [CNC COLEOPT #04-5311]). YUKON TERRITORY. Dawson City Airport, R. J. Cannings, 6. vi. 1980 (1 male, CMNC [CNC COLEOPT #04-5313]).

Distribution. Holarctic (Palearctic Region: Austria, Belarus, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Kazakhstan, Latvia, Mongolia, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, Ukraine; Nearctic Region: Canada and USA) (Colonnelli 2004).

Natural History. This species is associated with *Chamerion angustifolium* (L.) Holub and *Ludwigia octovalvis* (Jacq.) Raven (Onagraceae) (Colonnelli 2004).

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