

**TWO NEW SPECIES OF *EPURAEA* (*ORTHOPEPLUS*)
(COLEOPTERA: NITIDULIDAE) FROM MEXICO**

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Abstract

Two new species of *Epuraea* (*Orthoepelus*) are described from central and southern Mexico and *E. (O.) quadricollis* (Horn) is redescribed. *Epuraea (O.) setosa* **new species** is described from the Mexican highlands near Durango and Cerro Potosi, and *E. (O.) plenasulca* **new species** is described from the Capitol City (District Federal) and the Michoacan District. Both new species are compared to *Epuraea (Orthoepelus) quadricollis* (Horn), and a key is provided for all three species.

Resumen

Dos nuevas especies de *Epuraea (Orthoepelus)* son descritas provenientes del centro y sur de Mexico y *E. (O.) quadricollis* (Horn) se redescribe. *Epuraea (O.) setosa*, **nueva especie** se describe de los altiplanos mexicanos cerca de Durango y Cerro Potosi, y *E. (O.) plenasulca*, **nueva especie** se describe la ciudad capitol (Distrito Federal) y del Distrito Michoacan. Ambas especies son comparadas con *Epuraea (Orthoepelus) quadricollis* (Horn), y una clave es proveída para las tres especies.

Orthoepelus (Horn 1878) has been regarded as a monotypic subgenus of *Epuraea* Erichson (1843) in the nitidulid subfamily Epuraeinae. *Epuraea (Orthoepelus) quadricollis* (Horn 1878) is known from Arizona, New Mexico, and Colorado. The species is believed to be associated with *Pinus ponderosa* Lawson (Parsons 1943), which occurs from British Columbia to northern Mexico. *Orthoepelus* was originally described as a monotypic genus by Horn in his treatise on the North American nitidulid fauna (Horn 1878). In the original description little focus was placed on the shape of the tibia, genitalia, or detailed characters of the head. Parsons (1943), in his treatise on the North American nitidulid fauna, expanded Horn's description by describing in more detail the mentum, mandibles, maxillary palpi, and prosternal process. Parsons also included drawings of *O. quadricollis* (Parsons 1943, plate 5). Lacking in both Parsons and Horn's studies were detailed descriptions of the male and female genitalia, the pygidium, and the tibia. Based on external characters of *O. quadricollis*, both Horn and Parsons believed this genus to be allied to *Epuraea*, once in the Nitidulinae, but now considered to be in a separate subfamily, the Epuraeinae (Kirejtshuk 1986). Kirejtshuk and Pakaluk (1996) lowered the rank of *Orthoepelus* to a subgenus of *Epuraea*. Their assessment was based on similarities of *O. quadricollis* to the Holarctic *oblonga*-group in particular *E. (E.) linearis* Mäklin and *E. (E.) prolixa* Sharp, with respect to the excavated frons and dense obsolete punctation on the dorsal surface. They also supported this change of rank on other externally shared features, as well as the generalized aedeagus of both groups. A systematic treatment of the New World members of this genus and other related genera is needed to further validate this change but is beyond the scope of this paper.

The first step towards a better understanding of the subgenus *Orthoepelus* and its related taxa is to describe in detail its constituent members. Kirejtshuk (1998) described

the epuraeine fauna of the Himalayas and Northern Indochina, providing a foundation for understanding the taxonomy of the Old World *Epuraea* fauna. Here we describe two new species of *E. (Orthoepelus)* from the New World, and provide a description of the *E. (Orthoepelus)* ovipositor and male genitalia. A key for the identification of known species of *E. (Orthoepelus)* is also included, providing a means for determining additional new species in the subgenus.

Materials and Methods

Specimens were loaned by the following institutions: the Museum of Comparative Zoology (MCZ) - Harvard University (Philip Perkins), the United States National Museum (USNM) - Smithsonian Institution (Nancy Adams and David Furth), the Field Museum of Natural History (FMNH) (Philip Parrillo, Al Newton, and Margaret Thayer), the California Academy of Sciences (CAS) (Roberta Brett and David Kavanaugh), the Florida State Collection of Arthropods (Mike Thomas and Paul Skelley) and the Ohio State University Insect Collection (OSUC) (Peter Kovarik).

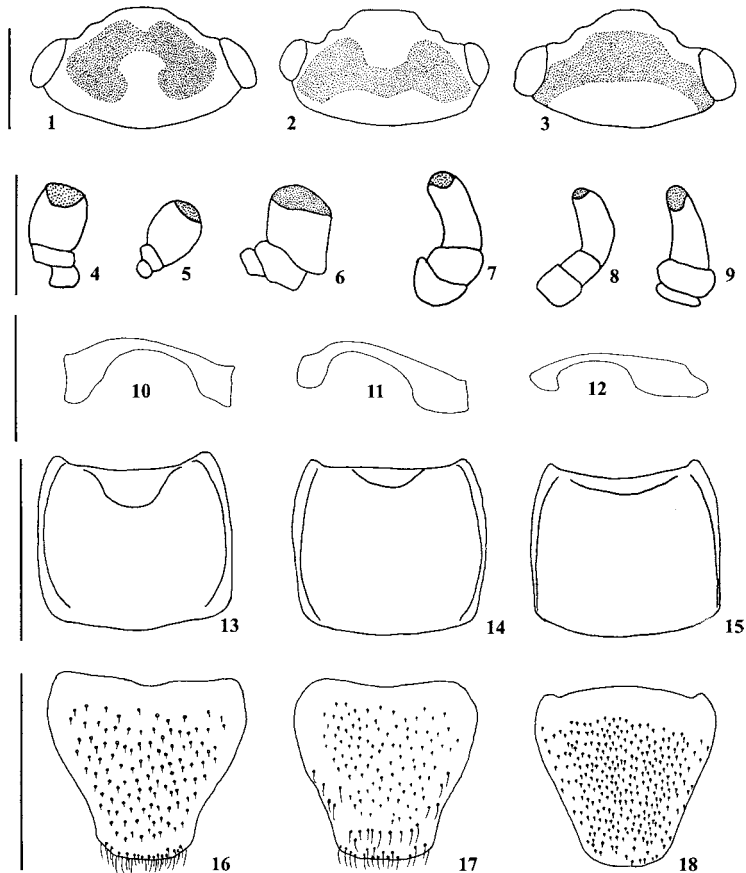
Genitalia were extracted from specimens with minuten pins, and placed on a glycerin slide mount. All genitalia were cleaned manually with minuten pins, due to the lack of sclerotization and overall fragility of the organs. Genitalia drawings were made through a camera lucida attached to an Olympus® BX50 compound microscope. All external drawings were made through a camera lucida attached to a WILD® Heerbrugg dissecting microscope. Scale bars were calibrated using an ocular micrometer.

Diagnosis of the Subgenus *Orthoepelus*

Members of the subgenus *Orthoepelus* differ from other Epuraeinae in features of the prosternal process. Kirejtshuk and Pakaluk (1996) stated that the prosternal process is not widened at its apex and does not project onto the mesosternum, in contrast to other subgenera of *Epuraea*. The female genitalia, in particular the gonocoxites, offer another potential synapomorphy to unite *Orthoepelus* as a monophyletic group. The gonocoxites, although cleft basally and apically, are broad, fused, complete sclerites.

Key to Species of *Epuraea* (*Orthoepelus*)

- 1 Explanate lateral margin of pronotum, becoming obsolete towards base (Fig. 15); head depression extending to lateral margin of head behind eye (Fig. 3); pygidium with basal margin convex (Fig. 18); prosternal process in lateral aspect with posterior face moderately produced terminally (Fig. 12)
..... *E. (O.) plenasulca* Cline **new species** (Southern Mexico)
- 1a Lateral margin of pronotum explanate to base (Figs. 13–14); head depression not extending to margin of head (Figs. 1–2); pygidium with basal margin concave (Figs. 16–17); prosternal process in lateral aspect with posterior face straight (Figs. 10–11) 2
- 2a Anterior margin of pronotum with moderate depression, not extending more than one-eighth the length of the pronotum (Fig. 14); depression on head with medial connection at same level as eye (Fig. 2); pygidium with several long setae along distal-laterad margin and 2 rows of longer setae near apex (Fig. 17); labial palpi with terminal segment obtuse, broadly rounded (Fig. 5)
..... *E. (O.) setosa* Cline **new species** (Central Mexico)
- 2b Anterior margin of pronotum with deep impression, extending to one-fourth the length of the pronotum (Fig. 13); depression on head with connection anterior to eye margin (Fig. 1); pygidium with no long setae along distal-laterad margin and



Figs. 1–3. Dorsal aspect of head. **1)** *Epuraea (O.) quadricollis*; **2)** *E. (O.) setosa*; **3)** *E. (O.) plenasulca*. **Figs. 4–6.** Labial palpus. **4)** *Epuraea (O.) quadricollis*; **5)** *E. (O.) setosa*; **6)** *E. (O.) plenasulca*. **Figs. 7–9.** Maxillary palpus. **7)** *Epuraea (O.) quadricollis*; **8)** *E. (O.) setosa*; **9)** *E. (O.) plenasulca*. **Figs. 10–12.** Prosternal process, lateral view. **10)** *Epuraea (O.) quadricollis*; **11)** *E. (O.) setosa*; **12)** *E. (O.) plenasulca*. **Figs. 13–15.** Pronotum. **13)** *Epuraea (O.) quadricollis*; **14)** *E. (O.) setosa*; **15)** *E. (O.) plenasulca*. **Figs. 16–18.** Pygidium. **16)** *Epuraea (O.) quadricollis*; **17)** *E. (O.) setosa*; **18)** *E. (O.) plenasulca*. Scale bars = 0.25 mm for Figures 1–3, 0.1 mm for Figures 4–9, 0.4 mm for Figures 13–15, and 0.3 mm for Figures 16–18.

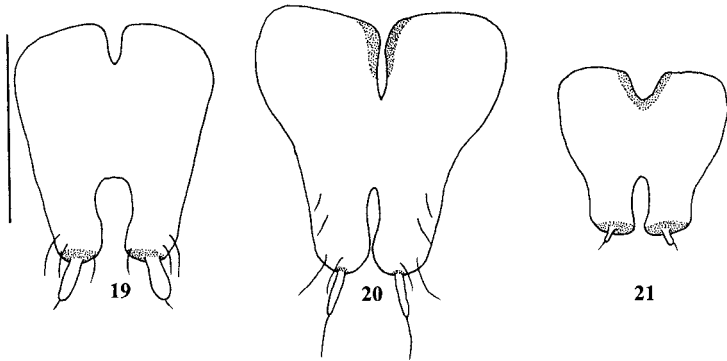
only 1 row of longer setae near apex (Fig. 16); labial palpi with terminal segment sub-quadrate (Fig. 4) *E. (O.) quadricollis* (Horn) (SW United States)

Species Descriptions

Epuraea (Orthoepelus) quadricollis (Horn)
(Figs. 1, 4, 7, 10, 13, 16, 19, 22–26)

Orthoepelus quadricollis Horn, 1878.

Epuraea (Orthoepelus) quadricollis (Horn). Kirejtshuk and Pakaluk (1996).

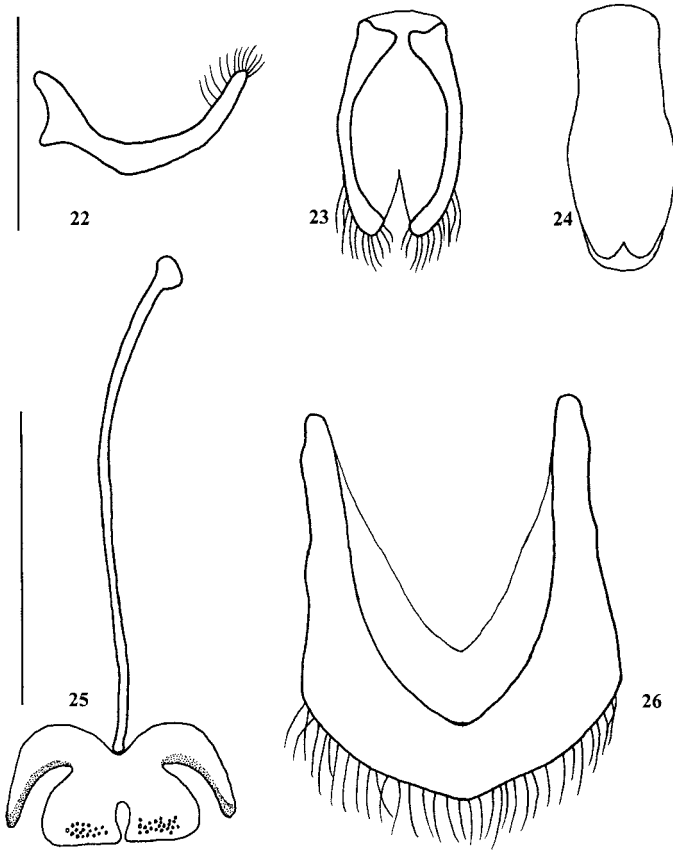


Figs. 19–21. Ovipositor gonocoxites. **19)** *Epuraea (O.) quadricollis*; **20)** *E. (O.) setosa*; **21)** *E. (O.) plenasulca*. Scale bar = 0.10 mm.

Holotype. ♂. Colorado; HoloTYPE 3210; Horn Coll, H3736; *Orthopeplus quadricollis* Horn; MCZ Holotype 33707. Housed in the Museum of Comparative Zoology, Harvard University.

Description. Body uniformly light reddish brown, elytra darker. Length: mean = 2.1 mm (n = 38), Width: mean = 0.8 mm (n = 38), Depth: mean = 0.7 mm (n = 38). Sparse minute pale gray pubescence over entire dorsum. Head with deep concavity across vertex (Fig. 1). Head with small punctures, \leq width of eye facet, interspaces small, rugulose across vertex becoming smooth towards occiput. Labial palpus with terminal segment obovate and swollen, sensillar area extending across entire apex (Fig. 4). Maxillary palpus with terminal segment longer than preceding two segments (Fig. 7). Basal segment quadrate, second segment trapezoidal. Antennal club ovate, not compact. Antennal grooves nearly obsolete. Pronotum concave medially along anterior margin. Concavity approximately one-fourth length of pronotum. Lateral margins narrowly explanate along entire length of pronotum (Fig. 13). Entire surface finely densely punctate. Scutellum triangular, all sides equal in length, punctures somewhat larger than those on pronotum and congregated in anterior 2/3. Elytra densely coarsely punctate, punctures <1 puncture width apart, equal in size to those on scutellum. Elytral apices separately rounded entirely exposing the pygidium. Lateral margins narrowly explanate along entire length. Epiplura narrow, extending to near elytral apex. Humeri faintly produced. Pygidium broadly triangular with base and apex nearly truncate. Apical margin with single row of setae extending past apex. Evenly densely punctate (Fig. 16). Prosternal process in ventral aspect broad between procoxae, with apex evenly rounded and produced behind procoxae. Procoxae separated by 2X's the distance between the metacoxae. Prosternal process in lateral aspect moderately produced over procoxae, with anterior and posterior faces straight (Fig. 10). Mesocoxae narrowly separated, almost abutting. First abdominal segment equal in length to abdominal segments 2 and 3 combined. Abdominal process narrow with small pointed apex extending between metacoxae. Ventral aspect of anterior margin of pronotum straight with no pronounced lobes laterally. Protibia with apex slightly expanded, with sinuate medial and lateral margins. Lateral margin sparsely setose. Apical border with three flat teeth. Apical spine short, equal in length to first tarsomere. Mesotibia with evenly sloping medial margin. Lateral margin with distinct apical concavity. Several flat teeth on apical margin, and apical spine moderate in length equal to tarsomeres 1 and 2 combined. Metatibia slightly expanded in apical third with similar apico-lateral process as in mesotibia. Numerous flat teeth completely covering apical margin. Apical spine large, equal to tarsomeres 1–3 combined.

Tegmen moderately sclerotized, with a deeply curved appearance laterally, and numerous setae arising from apical third of structure (Fig. 22). Tegmen in ventral view distinctly separate apically (Fig. 23). Median lobe with widest region medially, with incised terminal opening (Fig. 24). Eighth abdominal sternite with elongate lateral flanges, main structure with numerous pits along apical border and small median incision that opens up proximally (Fig. 25). Anal sclerite with narrow



Figs. 22–26. Male genitalia of *E. (O.) quadricollis*. **22)** Tegmen, lateral view; **23)** tegmen, ventral view; **24)** median lobe; **25)** eighth abdominal sternite; **26)** eighth abdominal sternite. Scale bars = 0.20 mm for Figures 22–24, and 0.40 mm for Figures 25–26.

evenly deep concavity, elongate setae along entire apical border of sclerite (Fig. 26). Ovipositor with paraprocts greatly reduced and membranous with a generalized tapering form. Gonocoxite broad and moderately produced at lateral angles (Fig. 19). Medial basal emargination slightly produced, not extending past one-fifth the entire structure (excluding terminal appendages). Apical region of gonocoxites distinctly separate. Apical gonocoxal regions bear two lateral terminal setae, and one smaller medial terminal seta. Terminal sockets large, occupying most of the apical margins of the gonocoxites. Gonostyli, which originate from the terminal sockets, are oblong, each bearing a short stout seta. Overall the ovipositor is lightly sclerotized with no areas or baculi heavily sclerotized.

Diagnosis. Externally, *E. (O.) quadricollis* can be distinguished from the other two species by having a well-developed anterior concavity on the pronotum, the straight anterior and posterior faces of the prosternal process when viewed laterally, and the somewhat dilated tibia. The gonocoxites provide some useful diagnostic information, including the overall broad shape, robust gonostyli, large apical sockets, and absence of sclerotized ridges. The aedeagus provides numerous characters that are most useful for delimiting this species from the others, including: the basal notch on the tegmen when

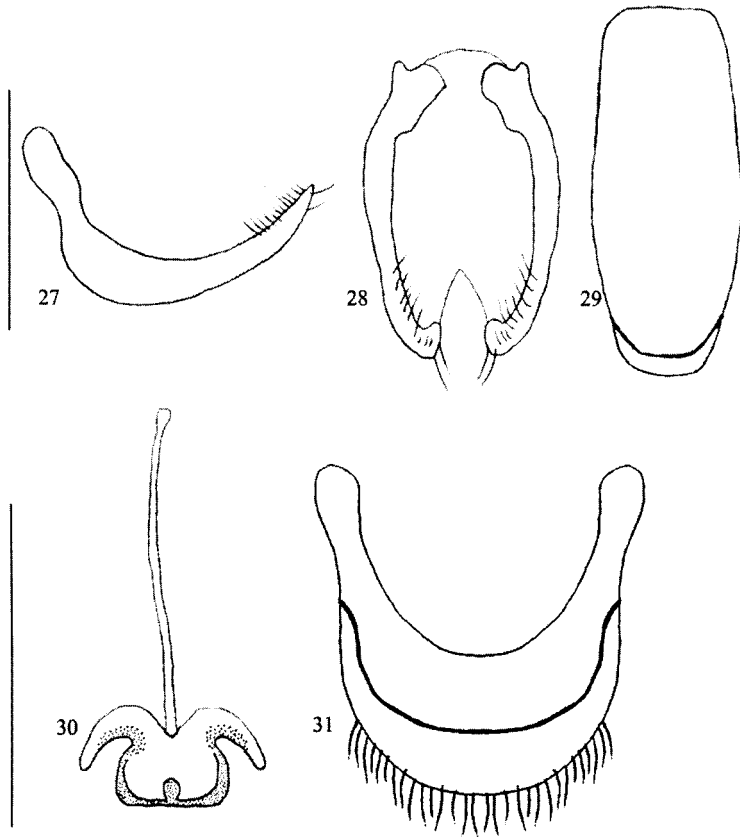
viewed laterally, the deeply cleft opening of the median lobe, and the sensillar region on the apex of the eighth abdominal sternite.

Distribution. This species is found throughout the southwestern U.S., particularly in Arizona, New Mexico, and Colorado (see Fig. 32). A new state record is recorded from Texas with the following label data: Texas; H.W. Wenzel Collection; *Orthoepelus quadricollis* Horn HH 58 (OSUC). The Texas specimen has a non-specific locality label. New records from Arizona of *E. (O.) quadricollis* include: Arizona, Cochise County, Rustler Park, Chiricahua Mts. 8,300', 26-VIII-1952, B. Mäklin; Arizona, Graham County, Pinaleno Mts., Grant Creek, 8,700', 9-VIII-1977, D.S. Chandler, sift fir litter (USNM) (Fig. 37). Chandler's collecting method suggests that this species is not an obligate associate of *Pinus ponderosa*, a previous assertion of Parsons (1943).

Eपुरaea (Orthoepelus) setosa Cline, new species
(Figs. 2, 5, 8, 11, 14, 17, 20, 27–31)

Type Series. HOLOTYPE (♀). El Salto Dgo, Mex., 5-VI-1937, E. S. Ross Collection, Cal. Acad., Lorin R. Gillogly Collection Donated to the Calif. Academy of Sciences May 1990. Pygidium in one glycerin vial, genitalia in second vial. PARATYPE (♀). MEXICO, El Salto Durango, 9,300', Juan Manuel collector, 3-8-VI-1937, Van Dyke Collection. Cal. Acad., Lorin R. Gillogly Collection Donated to the Calif. Academy of Sciences May 1990. Elytra, legs and head in glycerin vial. All above types deposited at CAS. PARATYPES: (1 ♂, 1 ♀). MEXICO: Nuevo Leon, Cerro Potosi, 10,300 ft, VII-14-16-1970; und. pine bark. Deposited at MCZ, Harvard University.

Description. Body uniformly dark reddish black to brown. Minute fine grey pubescence scattered across entire dorsum. Length: mean=2.25 mm, Width: mean=0.9 mm, Depth: mean=0.7 mm. Head broad with two distinct fossae on each side of the vertex, the fossae connected by a furrow extending between them at the same level as the orbit (Fig. 2). Head surface with punctures minute, width <1 eye facet diameter, some punctures fused, surface finely rugulose throughout. Labial palpus with terminal segment broadly obtuse, ovoid, and much larger than preceding two segments (Fig. 5). Maxillary palpus with terminal segment subequal to preceding two segments (Fig. 8). Basal two segments subquadrate. Terminal segment with small pit at apex, pit not covering entire apex rather only in medial area. Antennal club oval. Terminal segment tapered at apex, longer than either of the preceding segments. Many setae originating from each of the club segments. Third antennal segment elongate, longer than segment two. Antennal grooves short and convergent. Pronotum distinctly concave along anterior margin. Concavity extending posteriorly approximately one-eighth the length of the pronotum. Lateral margins explanate throughout the length of pronotum (Fig. 14). Surface densely punctate, punctures separated by <1 puncture width. Scutellum triangular, all sides approximately equal in length, all angles distinct. Elytra surface closely punctate, similar in density to pronotum. Apices separately rounded to expose the majority of the pygidium. Lateral margins moderately explanate. Epiplura narrow, extending to near the elytral apex. Pygidium broadly triangular with base slightly concave, apex nearly truncate. Apical margin with two rows of long setae. Moderately punctate, less so than the elytra or pronotum, punctures lacking around basal and lateral borders (Fig. 17). Prosternal process in ventral aspect narrowed between coxae, and extending beyond procoxal margins. In lateral aspect, pronounced over coxae with posterior face straight (Fig. 11). Mesocoxae extremely narrowly separated, almost abutting. Abdominal sternite 1 subequal in length to sternites 2–4 combined. Abdominal process forming somewhat rounded tip between metacoxae. Ventral view of the anterior margin of the pronotum forming straight line to lateral angle with no pronounced lobe. Protibia only slightly expanded in apical third. Lateral margin with fine crenulations. Apical spine small, only as large as first tarsomere. Small broad flat teeth on apical posterior margin. Medial border with short series of setae. Central ridge prominent along middle area of the apical half of the tibia. Mesotibia with medial margin evenly curved to apex. Setae originating from medial margin in apical two-thirds of the tibia. Numerous setae present on the lateral margin. One shallow lateral fossa present. Paired equal apical spines present. Several broad flat teeth along



Figs. 27–31. Male genitalia of *E. (O.) setosa*. **27**) Tegmen, lateral view; **28**) tegmen, ventral view; **29**) median lobe; **30**) eighth abdominal sternite; **31**) eighth abdominal sternite. Scale bars = 0.20 mm for Figures 27–29, and 0.40 mm for Figures 30–31.

apical margin. Metatibia dilated in apical third, otherwise slender. Lateral margin evenly sloping as in mesotibia. Both lateral and medial borders bearing numerous short stiff setae. Apical spine twice as long as the broad flat teeth on the apical margin (Fig. 30).

Aedeagus overall moderately sclerotized. Tegmen in lateral aspect moderately curved with distinct constriction on phallobase (Fig. 27), and two distinct apico-ventrally projecting setae. Tegmen in ventral aspect robust, notch present on phallobase, and three short stiff setae apically on each paramere (Fig. 28). Median lobe with simple opening (Fig. 29). Eighth abdominal sternite with prominent lateral flanges, anterior edge truncate with antepical incision, sclerotized ridge along entire margin and extending onto lateral flanges (Fig. 30). Anal sclerite broadly concave with numerous setae projecting from the apical margin (Fig. 31). Ovipositor slightly compact, somewhat similar in overall appearance to *E. (O.) quadricollis*. Gonocoxites moderately sclerotized, almost adjacent apically. Basal area with narrow indentation, heavily sclerotized on both sides of the indentation. Apical border of each gonocoxite with small socket, from which a gonostylus originates. Gonostylus elongate oval with a long seta arising from its terminus. Two long setae extend from the apical border of the gonocoxites. Two shorter setae are present proximally from the terminal setae (Fig. 20).

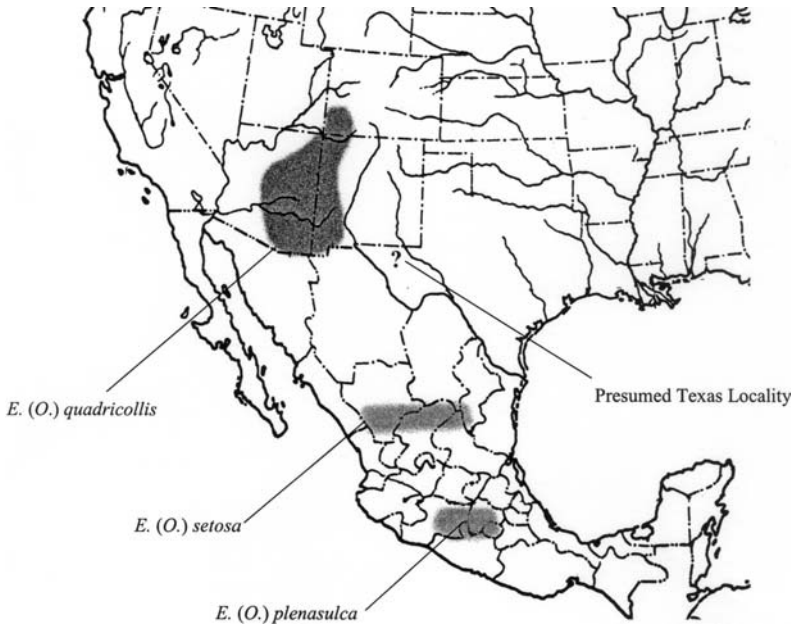


Fig. 32. Geographic distribution of the three species of *E. (Orthoepus)*. The stippled regions indicate the presumed distributions of each species. The question mark indicates the likely location of the Texas “state only” record for *E. (O.) quadricollis*.

Etymology. Specific epithet “setosa” derived from the two long rows of setae on the pygidial apex, the numerous setae on the antenna, and the two prominent setae apico-ventrally on the tegmen.

Diagnosis. *Epuraea (Orthoepus) setosa* is easily recognized from the other two *E. (Orthoepus)* species by a suite of external characters including: the obovoid shape of the terminal segment of the labial palpi, the two rows of long setae on the pygidium, antennal segment 3 longer than 2, pronotum densely punctate with punctures <1 puncture width apart. The tegmen has two distinct apico-ventrally projecting setae, constriction on phallobase, median lobe with simple opening, and very broadly concave anal sclerite. The gonocoxites have slender elongate gonostyloids, and more setae on the gonocoxite base. Notable intraspecific character variation includes the number of teeth present on the protibia apex, one specimen had three teeth and the other had four.

Distribution. This species has been collected from the central Mexican highlands near Durango and Cerro Potosi in Nuevo Leon (Fig. 32).

Epuraea (Orthoepus) plenasulca Cline, **new species**
(Figs. 3, 6, 9, 12, 15, 18, 21)

Type Series. HOLOTYPE (♀). 60 km S. Mexico D. F., Mex. 7,600', pines, 24 June 1948, F. Werner and W. Nutting. PARATYPES (2 ♀♀). MEXICO, Michoacan District, Rosencheve, Rt. 15, km 129, 7–8 July 1965, Flint and Ortiz collr. All types deposited in USNM.

Description. Body uniformly dark reddish black, legs lighter, nearly testaceous. Minute fine grey pubescence covering dorsum. Length: mean = 2.2 mm, Width: mean = 1.0 mm, Depth: mean = 0.8 mm. Head broad with a large U-shaped furrow extending from one side of the head to the other. The furrow originates just behind each orbit, and terminates medially near the clypeus (Fig. 3). Head surface densely punctate, punctures <1 eye facet wide, interspaces finely rugulose on vertex becoming smooth and shiny at occiput. Labial palpus large and swollen apically. Labial palpus with terminal segment broad and somewhat square-shaped, and with large pit at apex that extends across entire width of the segment (Fig. 6). Maxillary palpi with terminal segment much longer than basal two segments combined. Basal segments distinctly dorso-ventrally flattened into disc-shaped segments (Fig. 9). Antennal club compact. Terminal segment broadly rounded at the apex, subequal to preceding segment, and smaller than the basal segment. Small erect setae originating laterally from antennomeres 9–11. Antennal segments 3–5 all triangular in shape, segment 3 equal in length to segment 2. Antennal grooves short and convergent. Pronotum moderately concave along anterior one-third, with two pronounced humps on each side of the concavity. Concavity not more than one-tenth the length of the pronotum. Sides moderately explanate anteriorly becoming obsolete posteriorly (Fig. 15). Surface densely finely punctate, punctures 1.5 width of head punctures, interspaces smooth and shining, punctures separated by 1–1.5 puncture width. Scutellum somewhat hemispherical with distinct lateral angles, but apex rounded. Elytra surface finely densely punctate, similar to pronotum, but less shining. Apices separately rounded exposing most of the pygidium. Lateral margins narrowly explanate. Epipleura narrow, extending the entire length of the elytra. Pygidium broadly triangular with apex only slightly rounded, nearly truncate. Apical margin with sparse scattered pubescence. Surface densely finely punctate, particularly in the middle of the structure, and less so along the lateral margin. Anterior margin with two distinct indentations near lateral angles (Fig. 18). Prosternal process in ventral aspect elongate and narrow, extending past procoxae. In lateral aspect somewhat convex over procoxae, but with pronounced declivity posterior to the coxae (Fig. 12). Mesocoxae narrowly separated. Abdominal sternite 1 subequal in length to sternites 2–4 combined. Abdominal process forming acute tip between metacoxae. Ventral view of the anterior margin of the pronotum exhibiting small lobes near the lateral angles. Protibia expanded in apical third. Lateral margin with fine crenulations. Apical spine small, as long as first tarsomere. Broad flat teeth on apical posterior margin. Setae in serial row along medial ridge. Few scattered setae throughout the tibia. Mesotibia with medial margin broadly concave. Setae originating from the medial margin present along most of the entire length. Few setae present on the lateral margin. Two fossae present, one on the apical third of the tibia and one on the medial half. The median fossa being deeper than the apical fossa. Paired apical spines small and symmetrical in length. Several broad flat teeth on apical margin. Metatibia very slender in proximal third. Lateral border moderately convex. Both medial and lateral border bearing short stiff setae. Apical border bearing flat teeth. Apical spines short and slender, not longer than tarsomeres 1–2 combined.

Male genitalia not known. Ovipositor small and compact, paraprocts greatly reduced. Gonocoxites heavily sclerotized, fused medially, distinctly separated basally and apically (Fig. 21). Basal indentation with heavily sclerotized median furrows present on each gonocoxite. Apical border of gonocoxite broadly rounded with one large socket. Each socket bearing a short gonostylus. Gonostyli oriented obliquely.

Etymology. Specific epithet derived from the condition of the depression (“sulcus”) on the head completely (“plena”) extending across the vertex from one side of the head to the other.

Diagnosis. Noticeable external differences between *E. (O.) plenasulca* and other species of the subgenus include: the subquadrate shape of the labial palpus, the elongate cone shape of the maxillary palpus, the broad apex of the protibia, and the broad medial fossa on the mesotibia. *Eपुरaea (Orthopeplus) plenasulca* is also unique in the structure of the female genitalia, in particular the small tubular shape and oblique placement of the gonostyli, the degree of separation of the basal indentation of the gonocoxite, and relatively small compact size of the gonocoxite *in toto*. Notable intraspecific character variation includes the number of teeth present on the protibia and mesotibia apices.

Distribution. The species is known from southcentral Mexico (Fig. 32).

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