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Pascoia, a new Deltocephalini leafhopper genus (Hemiptera: Cicadellidae: Deltocephalinae) from Peru

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Abstract

A new genus of Deltocephalini *Pascoia* Duan **gen. n.** with *P. rakitovi* Duan **sp. n.** as type species is described and illustrated from the Andes Mountains in Peru.

Key words: Auchenorrhyncha, morphology, taxonomy, new species

Introduction

The grass-feeding leafhopper tribe Deltocephalini is distributed worldwide and includes those genera that have a linear (not Y-shaped) connective fused to the aedeagus (Webb & Viraktamath, 2009). Until now, the South American Deltocephalini fauna now comprised 29 genera (19 endemic) and >150 known endemic species. Duan & Dietrich (2018) provided a key to South American genera of the tribe. Here we describe and illustrate an additional new genus and species of the tribe from Peru.

Material and methods

The material studied here is deposited in the Universidad Nacional Mayor de San Marcos, Lima, Peru (USML) and Illinois Natural History Survey (INHS). Morphological terminology follows Dietrich (2005). Digital photographs were taken with a QImaging Micropublisher 3.3 digital camera mounted on an Olympus BX41 stereo microscope and with a Nikon D1x digital SLR camera configured with lenses by the Microptics, Digital Lab XLT system. Photographs were modified with Adobe Photoshop CS.

Taxonomy

Pascoia Duan gen. n.

Type species: *Pascoia rakitovi* Duan **sp. n.**

Coloration and morphology. Overall coloration pale brown with orange and fuscous marks. Forewing veins white. Mesosternum and scutellum pale brown. Femora and tibiae with fuscous marks.

Head narrower than pronotum; crown between eyes as wide at base as maximum width of eye, surface flat, posterior two-thirds with fine rugulose sculpture, anterior margin rounded, only longer medially than next to eye, rounded to face; ocellus next to eye on anterior margin. Face relatively flat, length slightly less than width; fronto-clypeus relatively narrow; clypeal sulcus weakly delimited; mesal margin of eye distinctly emarginate adjacent to

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antennal base; antenna approximately twice as long as maximum head width; anteclypeus slightly broadened distally, not extended beyond normal curve of genae; gena broad, insinuated near eye; lorum semicircular, narrower than anteclypeus, well separated from lateral margin of face. Forewing macropterous, with numerous extra crossveins or partial crossveins in clavus and corium, particularly along costal margin and in clavus; appendix broad and extended nearly to wing apex. Hind wing fully developed with posterior branch of R and anterior branch of M separate and connected by crossvein or joined at single point preapically. Front femur with AM1 enlarged and situated near ventral margin preapically; IC with single row of long, fine setae; AV with ~10 short, stout setae in basal half; tibia rows AD and PD with 1 and 5 macrosetae, respectively. Hind femur macrosetal formula 2+2+1, tibial rows PD, AD, AV and PV with approximately 10, 10, 13, and 34 macrosetae, respectively, PD setae approximately 50% longer than AD setae, AD with 2–5 smaller setae between respective macrosetae; tarsomere I longer than II and III combined, with two well delimited longitudinal ventral rows of stout setae, pecten with 3 platellae.

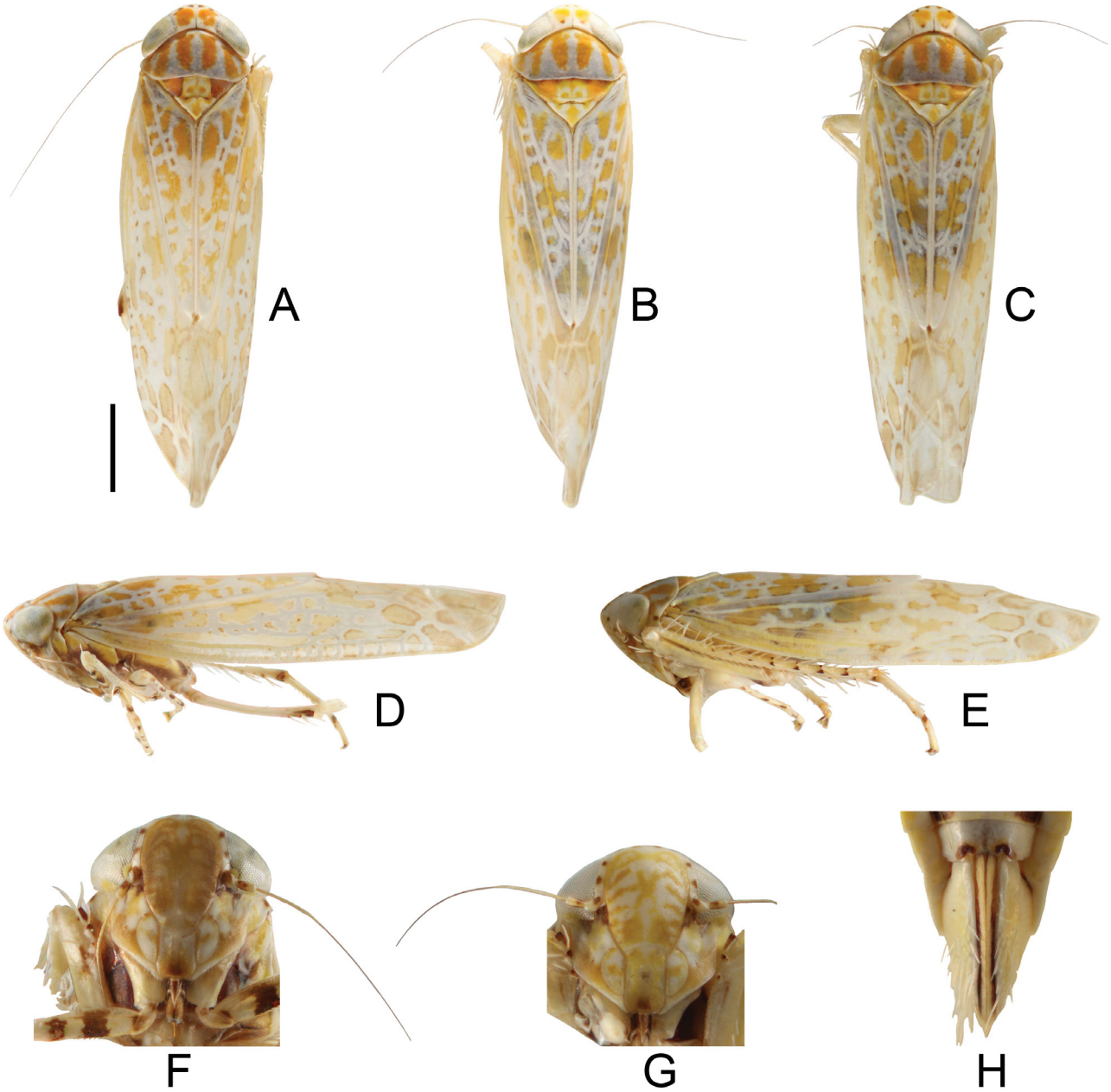

FIGURE 1. *Pascoia rakitovi* Duan **sp. n.** A–C: habitus, dorsal view; D, E: habitus, lateral view; F, G: face; H: end of female abdomen, ventral view. A, B, D, F: male; C, E, G, H: female.

Male genitalia. Pygofer deeply emarginate dorsomedially, lobe narrowly rounded, without processes, with numerous elongate macrosetae in distal half. Segment X membranous. Valve broader than long, posterior margin

rounded. Subgenital plate slightly longer than basal width, lateral margin nearly straight with single row of macrosetae, apex with few scattered fine setae. Style relatively short and broad, articulating arm short; preapical lobe acute; apophysis thick, falcate. Connective relatively short and broad, forming right angle with aedeagus in lateral view. Aedeagus with dorsal apodeme well sclerotized, flaplike and flexible, shaft tubular through most of length, with pair of long subapical appendages extended basolaterad, apex deeply cleft in ventral view, gonopore apical; basal apodeme moderately long.

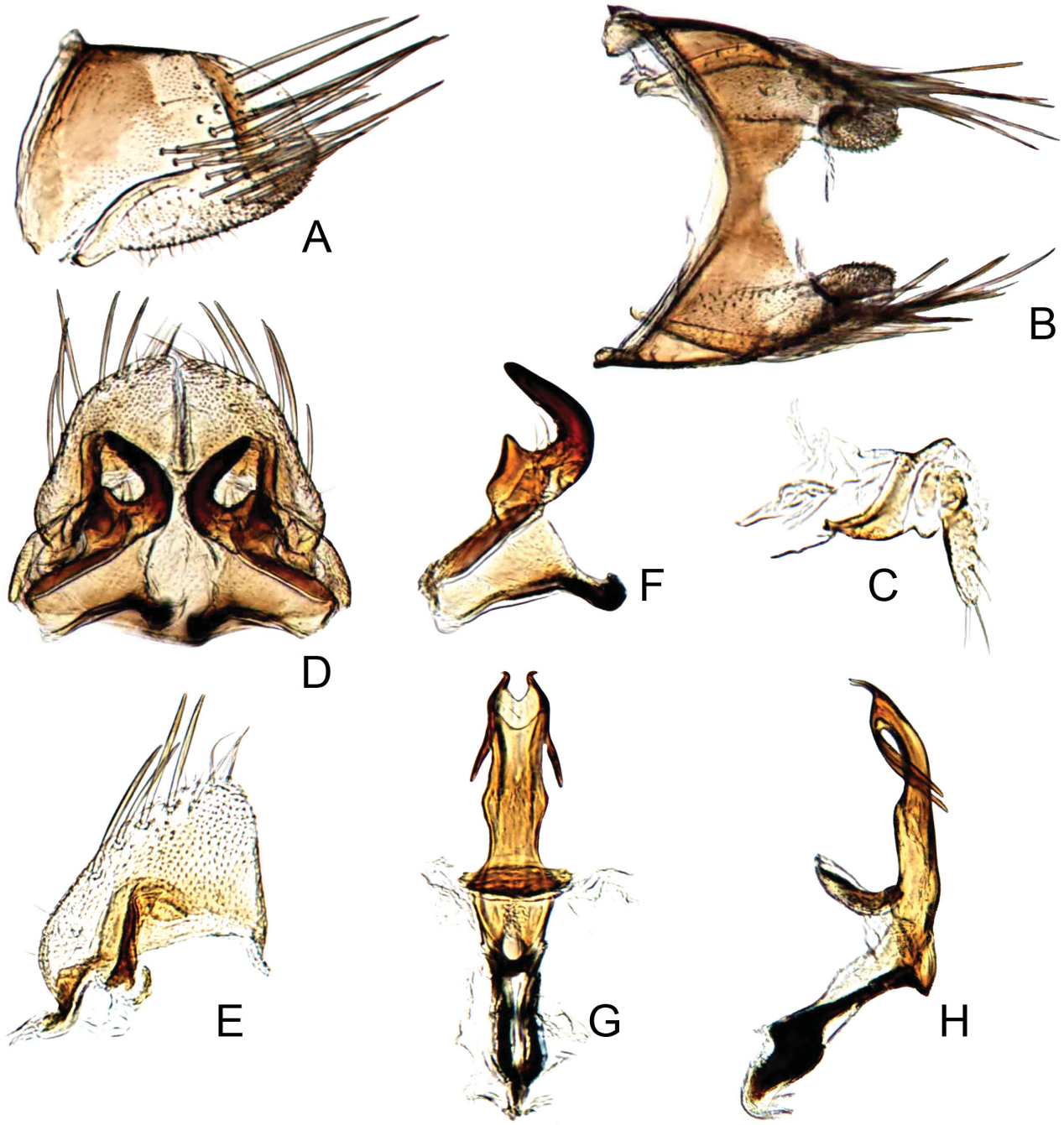

FIGURE 2. *Pascoia rakitovi* Duan **sp. n.** A: male pygofer lobe, lateral view; B: male pygofer, dorsal view; C: male segments X, XI, lateral view; D: valve, subgenital plates and styles, ventral view; E: subgenital plate, ventral view; F: style, dorsal view; G, H: connective and aedeagus, dorsal and lateral view, respectively (holotype).

Female. Sternite VII with middle of posterior margin excavated and with M-shaped macula (Figs 1H, 4F). First valvula dorsal sculpturing granulose to maculose, extended to dorsal margin and merging with ventral sculptured area near apex (Figs 4C–E). Second valvula slightly broadened to midlength then tapered to acuminate apex, with small obliquely triangular dorsal teeth over apical half (Figs 4A, 4B).

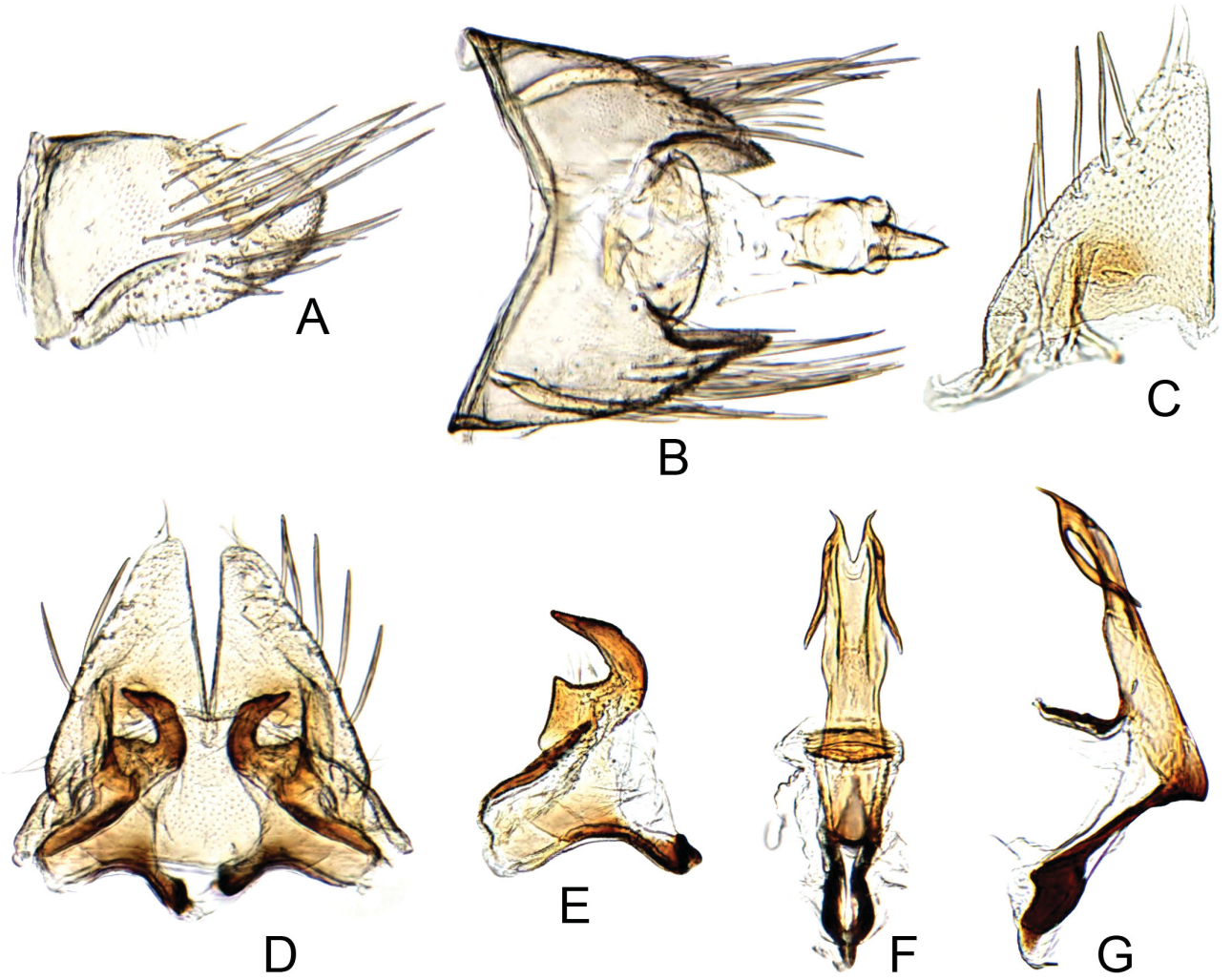

FIGURE 3. *Pascoia rakitovi* Duan **sp. n.** A: male pygofer lobe, lateral view; B: male pygofer and segments X, XI, dorsal view; C: subgenital plate, ventral view; D: valve, subgenital plates and styles, ventral view; E: style, dorsal view; F, G: connective and aedeagus, dorsal and lateral view, respectively (paratype).

Etymology. This genus is named for the type locality, Pasco Province, Peru. Gender: feminine.

Remarks. We place the new genus in Deltocephalini based on the linear connective fused to the aedeagus. This genus keys to couplet 17 in the key to South American Deltocephalini of Duan et al. (2018). It agrees with the first part of the couplet (*Haldorus* Oman) in having a well sclerotized dorsal apodeme on the aedeagus but, unlike *Haldorus*, it lacks basal processes on the aedeagus. Ignoring the presence of a sclerotized dorsal apodeme on the aedeagus and continuing in the key beyond the second part of couplet 17, *Pascoia* will key to *Parandanus* Linnavuori & DeLong. *Pascoia* closely resembles species of *Parandanus* in external morphology, particularly the elongate body form, short, narrow crown, elongate antenna, and dorsum with symmetrical orange markings. Externally, *Pascoia* differs from *Parandanus* in its smaller size and in the presence of many supernumerary crossveins on the forewing. *Pascoia* also differs in having the aedeagus with a strongly bifid apex and distal processes extended basad, contrasting with the rounded or slightly notched aedeagal apex and medial processes extended distad in *Parandanus*. The new genus is also somewhat similar to *Loeia* Duan (Duan et al. 2017), described from Thailand, in coloration and body form, but strongly differs in the structure of the male pygofer and genitalia.

The genus is described based on a single new species collected in a high elevation cloud forest on the eastern slopes of the Andes Mountains in Peru.

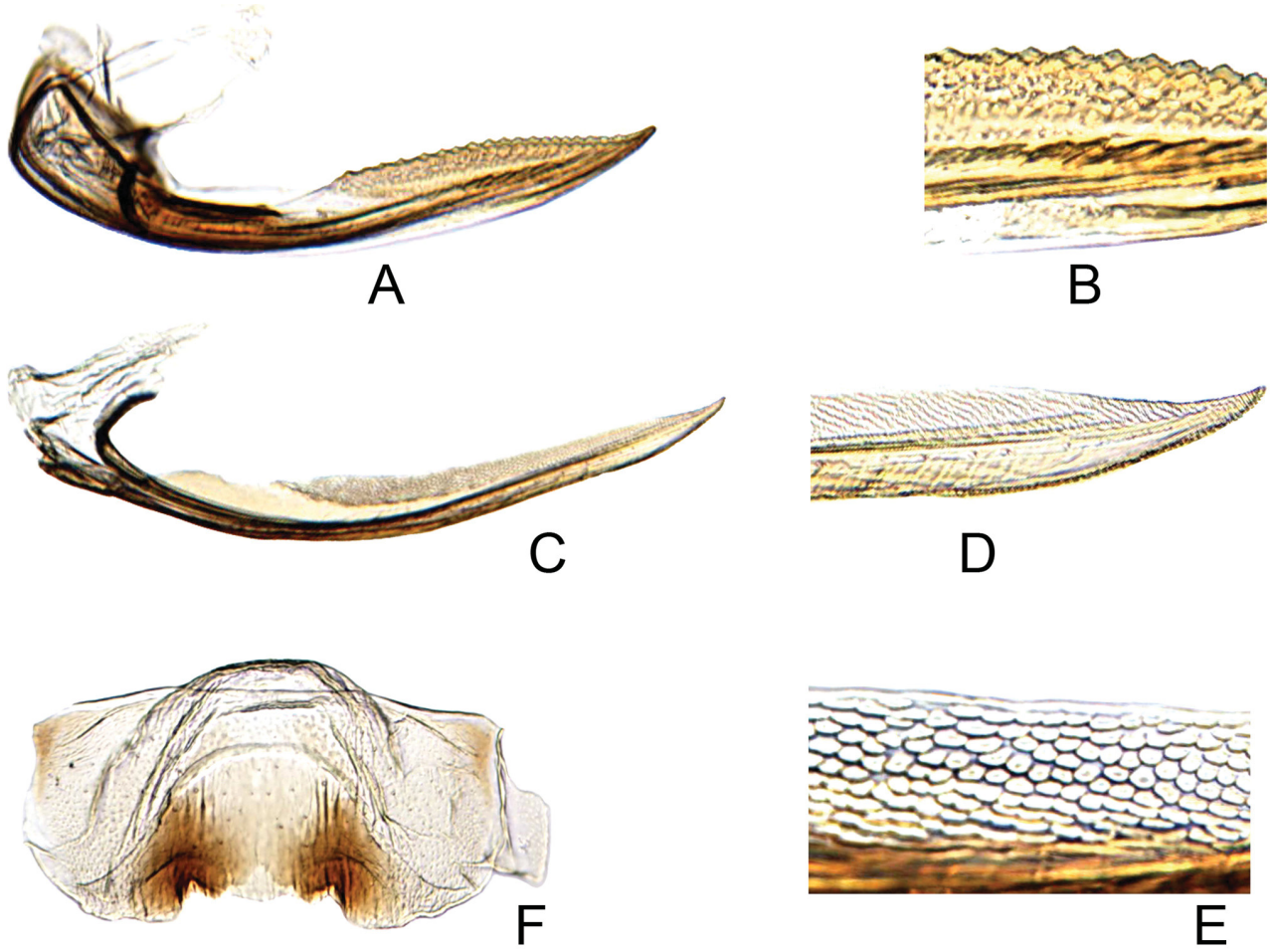

FIGURE 4. *Pascoia rakitovi* Duan **sp. n.** A: second valvula; B: detail of second valvula; C: first valvula; D: apex of first valvula; E: detail of first valvula; F: female sternite VII, ventral view.

***Pascoia rakitovi* Duan sp. n.**
(Figs 1–4)

Length. 5.0 mm.

Coloration and morphology. Fore margin of vertex with four fuscous dots, with pair of orange patches more posterad. Pronotum with three pairs of orange longitudinal bands. Most of mesonotum and scutellum orange. Forewing base orange transitioning to pale brown distally, with veins contrastingly white (Figs 1A–C). Face mostly pale brown, with paired white arcs corresponding to muscle scars of frontoclypeus (Figs 1F, 1G).

Male genitalia. Pygofer lobe with caudal margin bluntly angulate (Figs 2A, 2B, 3A, 3B). Valve caudal margin obtuse angulate (Figs 2D, 3D). Subgenital plate with 5 macrosetae (Figs 2E, 3C). Style preapical lobe acutely angulate; apophysis strongly curved laterad and relatively thick (Figs 2F, 3E). Connective shorter than aedeagus. Aedeagus with acute ventral angle near point of fusion with connective in lateral view, shaft nearly straight, abruptly narrowed near two-thirds length in lateral view, slightly widened at base of process then acuminate distally, processes extended from dorsal margin basad and crossing shaft; in posteroventral view slightly gibbous near midlength, processes extended along lateral margins of shaft for most of length then slightly divergent, sides of distal cleft acuminate and slightly divergent (Figs 2G, 2H, 3F, 3G).

Material examined. Holotype: male, Peru: Pasco Department P.N. Yanachaga Chemillén San Alberto Valley, ca. Refugio EI Cedro btw 2220–2270 approx, 10°32'S, 75°21'W, R.A. Rakitov, 11–X–2002 (MSML). **Paratypes:** 1 male, 1 female, same data as holotype (INHS).

Etymology. This species is named for R.A. Rakitov who collected the type specimens.

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