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Neocyphon, a new genus of New World marsh beetles closely related to *Contacyphon* Gozis (Coleoptera: Scirtidae)

RAFAŁ RUTA[1], MARÍA LAURA LIBONATTI[2,3,*], J. H. EPLER[4] & BERNHARD KLAUSNITZER[5,#]

[1]*Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Przybyszewskiego 65, 51–148, Wrocław, Poland.*
rafal.ruta@uwr.edu.pl; https://orcid.org/0000-0001-8515-2385
[2]*Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales, Departamento de Biodiversidad y Biología Experimental (DBBE), Intendente Güiraldes 2160, Ciudad Universitaria, C1428EGA, Buenos Aires, Argentina.*
[3]*CONICET - Universidad de Buenos Aires, Instituto de Biodiversidad y Biología Experimental y Aplicada (IBBEA), Buenos Aires, Argentina.*
libonatti.marialaura@gmail.com; https://orcid.org/0000-0003-2163-7046
[4]*461 Tiger Hammock Road, Crawfordville, Florida, 32327, U.S.A.*
johnepler3@comcast.net; https://orcid.org/0000-0002-7268-1891
[5]*Senckenberg Deutsches Entomologisches Institut Lannerstraße 5, D-01219 Dresden, Deutschland.*
klausnitzer.col@t-online.de; https://orcid.org/0009-0002-9150-3916
**Corresponding author*
[#][254th contribution to the knowledge of Scirtidae]

Abstract

Neocyphon gen. nov. is proposed to accommodate species previously described in *Contacyphon* Gozis, 1886: *Neocyphon corumbanus* (Pic, 1941) **comb. nov.**, *Neocyphon guatemalensis* (Champion, 1897) **comb. nov.**, and *Neocyphon humberti* (Pic, 1918) **comb. nov.**, and 10 new species: *Neocyphon diiorioi* **sp. nov.** (Brazil, Paraguay), *Neocyphon ecuadorensis* **sp. nov.** (Ecuador), *Neocyphon guianensis* **sp. nov.** (French Guiana), *Neocyphon lojaensis* **sp. nov.** (Ecuador), *Neocyphon mesopotamicus* **sp. nov.** (Argentina, Brazil, Paraguay), *Neocyphon peruvianus* **sp. nov .** (Peru), *Neocyphon platensis* **sp. nov.** (Argentina, Uruguay), *Neocyphon pseudoplatensis* **sp. nov.** (Argentina), *Neocyphon ratzlaffi* **sp. nov.** (The Bahamas, Cayman Islands, Cuba, Dominican Republic, USA), and *Neocyphon teresopolisensis* **sp. nov.** (Brazil). *Neocyphon* is a predominantly Neotropical genus ranging from Florida in the north to central and northern Argentina in the south. Two species groups are distinguished, differing in details of structural anatomy of male and female genitalia.

Key words: Scirtinae, taxonomy, North America, South America

Resumen

Se propone *Neocyphon* gen. nov. para ubicar especies previamente descritas en *Contacyphon* Gozis, 1886: *Neocyphon corumbanus* (Pic, 1941) **comb. nov.**, *Neocyphon guatemalensis* (Champion, 1897) **comb. nov.** y *Neocyphon humberti* (Pic, 1918) **comb. nov.**, y 10 especies nuevas: *Neocyphon diiorioi* **sp. nov.** (Brasil, Paraguay), *Neocyphon ecuadorensis* **sp. nov.** (Ecuador), *Neocyphon guianensis* **sp. nov.** (Guayana Francesa), *Neocyphon lojaensis* **sp. nov.** (Ecuador), *Neocyphon mesopotamicus* **sp. nov.** (Argentina, Brasil, Paraguay), *Neocyphon peruvianus* **sp. nov.** (Perú), *Neocyphon platensis* **sp. nov.** (Argentina, Uruguay), *Neocyphon pseudoplatensis* **sp. nov.** (Argentina), *Neocyphon ratzlaffi* **sp. nov.** (Bahamas, Cuba, Islas Caimán, República Dominicana, Estados Unidos), y *Neocyphon teresopolisensis* **sp. nov.** (Brasil). *Neocyphon* es un género predominantemente Neotropical, distribuido desde Florida, en el norte, hasta el centro y norte de la Argentina, en el sur. Se distinguen dos grupos de especies que difieren en detalles de la anatomía estructural de los genitales masculinos y femeninos.

Palabras clave: Scirtinae, taxonomía, América del Norte, América del Sur

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Introduction

For a long time, *Contacyphon* Gozis, 1886 (formerly known under the invalid name *Cyphon* Paykull, 1799, see Zwick *et al.* 2013) was historically a waste basket genus and only studies conducted in recent decades showed that it contained a number of genera that were described as new or elevated to generic rank, including *Hemicyphon* LeConte, 1866 (previously treated as a subgenus of *Contacyphon*), *Herthania* Klausnitzer, 2006, *Hiekecyphon* Klausnitzer, 2016, *Nyholmia* Klausnitzer, 2013, and *Yoshitomia* Klausnitzer, 2013 (Klausnitzer 2006, 2013, 2016; Gimmel & Epler 2024).

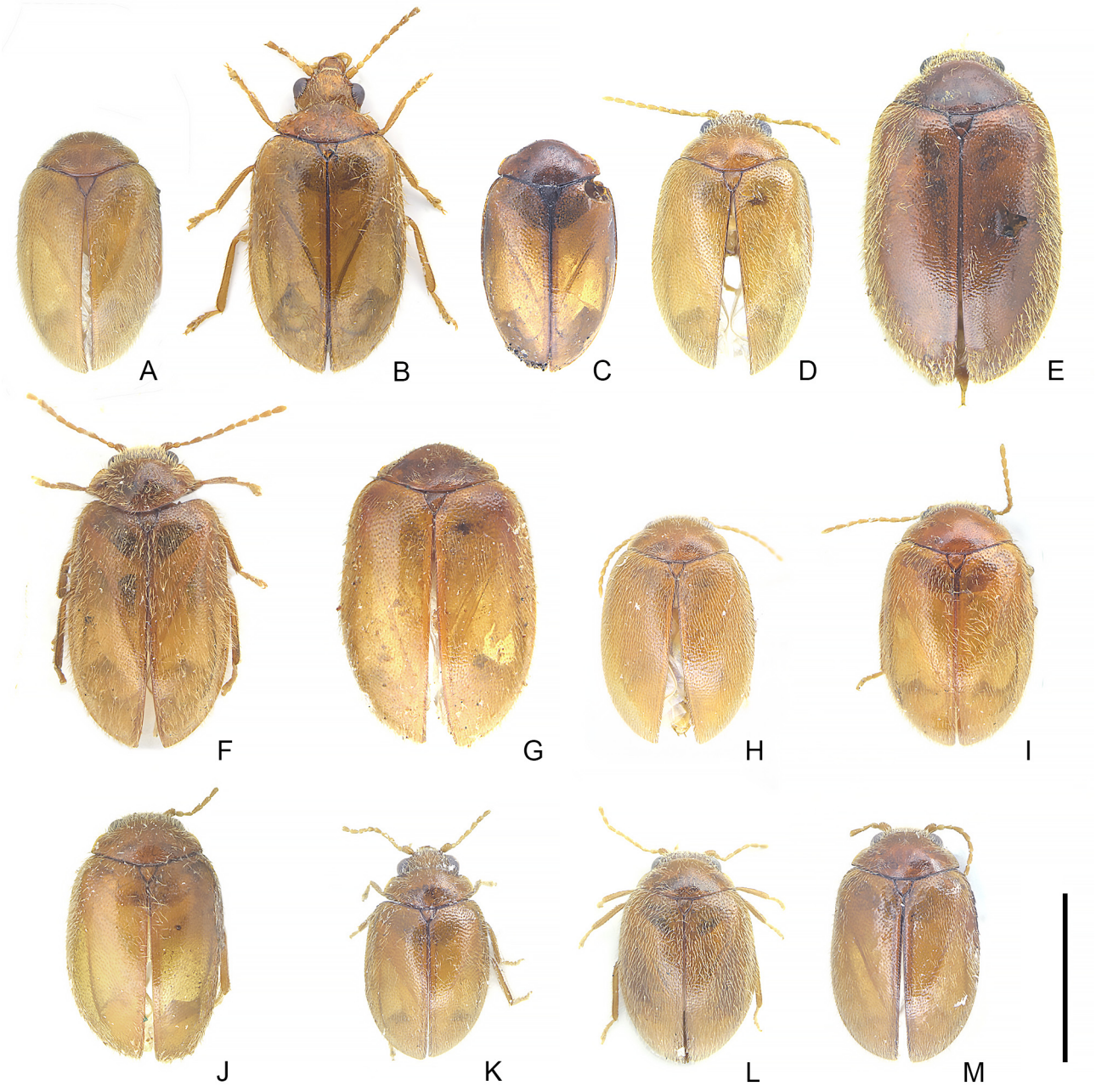

FIGURE 1. *Neocyphon* species, habitus in dorsal view. A) *N. diiorioi* **sp. nov.**, paratype, male; B) *N. ecuadorensis* **sp. nov.**, holotype, male; C) *N. lojaensis* **sp. nov.**, holotype, male; D) *N. mesopotamicus* **sp. nov.**, paratype, male; E) *N. platensis* **sp. nov.**, paratype, female; F) *N. pseudoplatensis* **sp. nov.**, paratype, female; G) *N. teresopolisensis* **sp. nov.**, holotype, male; H) *N. corumbanus* (Pic), male; I) *N. guatemalensis* (Champion), lectotype, female; J) *N. guianensis* **sp. nov.**, holotype, male; K) *N. humberti* (Pic), male; L) *N. peruvianus* **sp. nov.**, paratype, male; M) *N. ratzlaffi* **sp. nov.**, paratype, male. Scale bar: 3 mm.

FIGURE 2. Historical labels of *Neocyphon* type specimens. A) *N. corumbanus* (Pic), paralectotype; B) *N. guatemalensis* (Champion), paralectotype; C) *N. guatemalensis*, lectotype; D) *N. humberti* (Pic), holotype; E) *N. lojaensis* **sp. nov.**, holotype; F) *N. teresopolisensis* **sp. nov.**, holotype.

While the knowledge of *Contacyphon* and species historically included in the genus is rather satisfactory in Palaearctic, Nearctic, Oriental, and Australasian realms, it is insufficient in Neotropical and Afrotropical realms. Currently, there are about 30 named species of *Contacyphon* known from the Neotropical realm (Zwick *et al.* 2013; Ruta 2019, 2021), some of which clearly belong to different genera and await either a formal transfer or description. During studies on American marsh beetles, a group of *Contacyphon*-like taxa was identified independently by two of the authors (JHE and MLL). These taxa resemble *Contacyphon* in several aspects, including a buttonhole configuration of subgenal ridges and the presence of a brush organ in the female genital tract. At the same time, they form a consistent group that shares additional characters, such as the morphology of the male genitalia and a peculiar depression on the apical abdominal ventrite of females. These synapomorphies justify erecting a new genus, which is described in the present paper.

Methods

JHE's measurements were done with a Leica/Wild MZ8 stereomicroscope and a Leica DMLB compound microscope; RR's measurements and photos were done with a Nikon SMZ 1500 stereomicroscope and Nikon Eclipse N*i* compound microscope with Nikon D5100 camera attached; MLL's measurements and photos were done with a Leica MZ6 stereomicroscope and an Olympus CX31 compound microscope with Sony DSC-W530 camera attached. The drawing of the metathoracic wing was prepared by tracing photographs using Adobe Illustrator (CC 2021). Photos were stacked using either Helicon Focus or Combine ZP and adjusted with Affinity Photo or edited with Adobe Photoshop CS5 Extended. SEM images were obtained using a Zeiss SUPRA™ 40 scanning electron microscope at the Centro de Microscopías Avanzadas (University of Buenos Aires) (Figs 3, 4, 6, 7) and a HITACHI S-3400N microscope in the laboratory of the Museum and Institute of Zoology, Polish Academy of Sciences (Warsaw, Poland) (Fig. 8). Images were assembled into figures in Adobe Illustrator (CC 2021) and Adobe Photoshop.

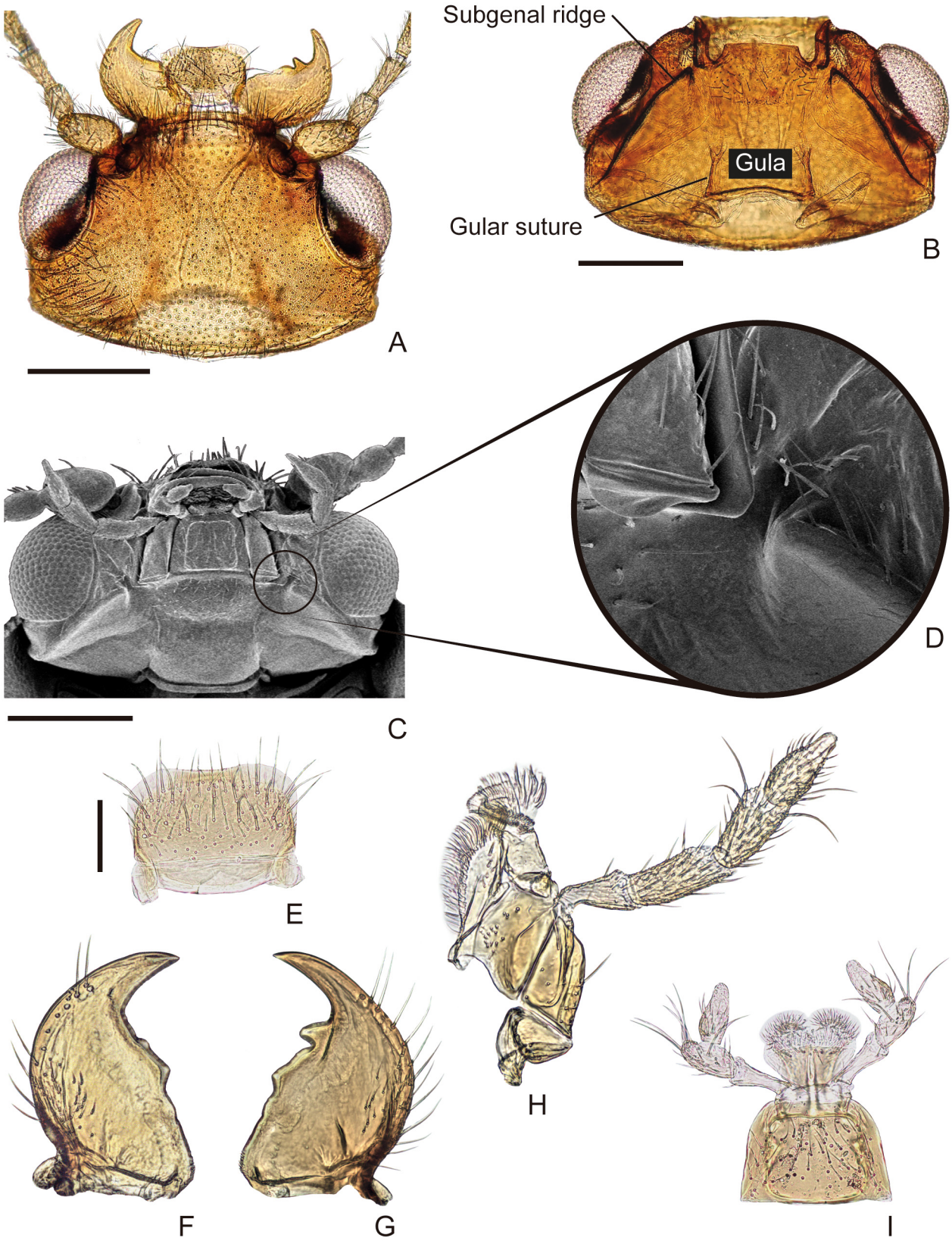

FIGURE 3. *Neocyphon* gen. nov., morphology of head. A) *N. pseudoplatensis* **sp. nov.**, dorsal view; B) *N. platensis* **sp. nov.**, ventral view; C) *N. mesopotamicus* **sp. nov.**, front-ventral view; D) same, detail of area indicated in C; E) *N. platensis* **sp. nov.**, labrum; F) *N. platensis* **sp. nov.**, left mandible; G) *N. platensis* **sp. nov.**, right mandible; H) *N. platensis* **sp. nov.**, maxilla; I) *N. platensis* **sp. nov.**, labium. Scale bars: 0.25 mm for A–C, 0.1 mm for D–I.

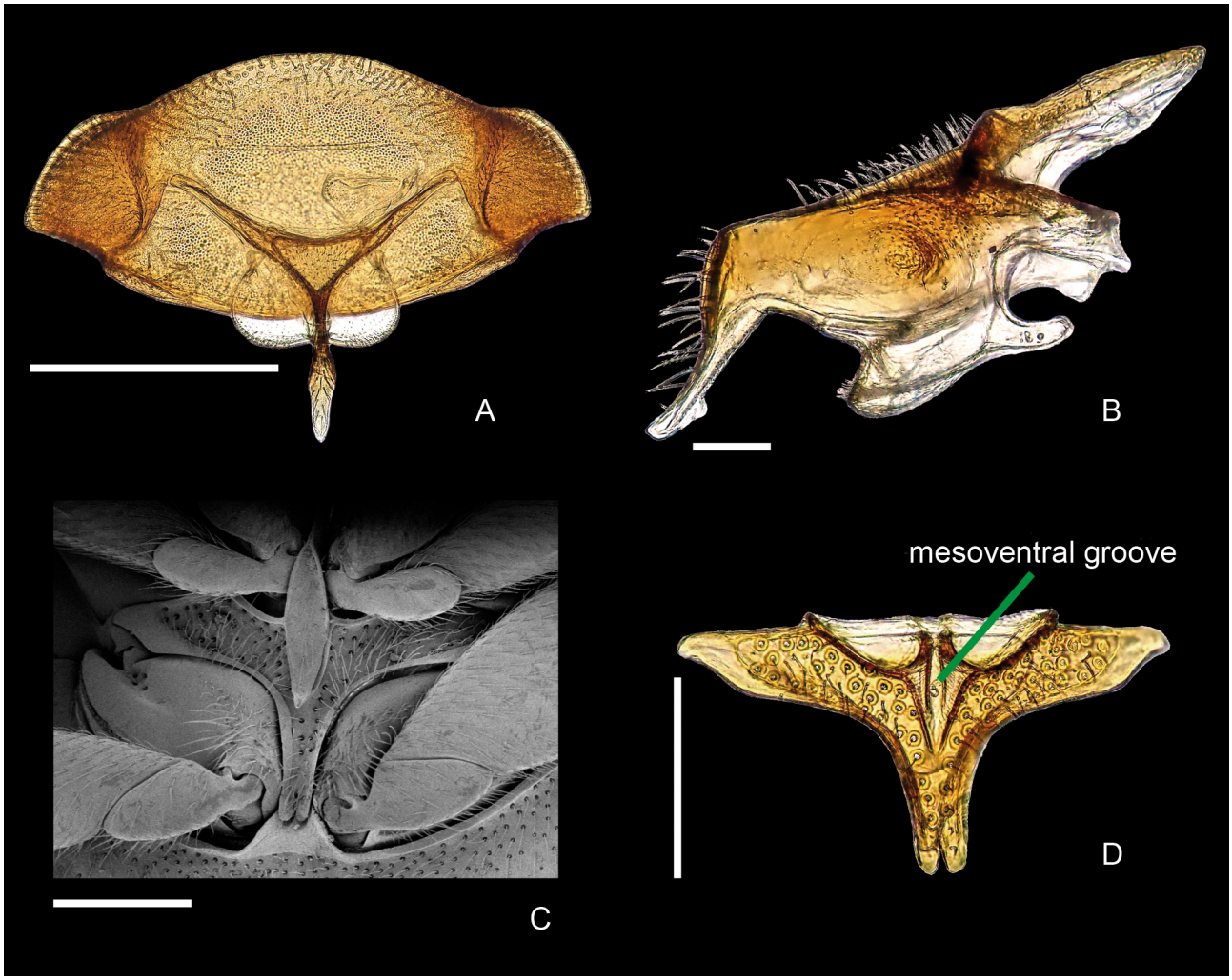

FIGURE 4. *Neocyphon* gen. nov., morphology of prothorax and mesothorax. A) *N. mesopotamicus* **sp. nov.**, prothoracic sclerites, ventral view; B) *N. platensis* **sp. nov.**, prosternum, lateral view; C) *N. platensis* **sp. nov.**, mesoventrite; D) *N. mesopotamicus* **sp. nov.**, mesoventrite showing mesoventral groove. Scale bars: 0.5 mm for A, 0.1 mm for B, 0.25 mm for C–D.

Punctation of dorsal portion of beetles is described when observed in diffused light. Wing venation terminology follows Lawrence *et al.* (2021). Total length is measured from above and extends from the anterior edge of pronotum to the apex of elytra. Elytral length is measured along the suture from the base of the scutellar shield to the apex. Abbreviations used in the text: EL—elytra length, EW—elytra width, L—length, PL—pronotum length, PW—pronotum width, TL—total length, W—width.

Biogeographical regionalization of South America is after Morrone (2017) and Morrone *et al.* (2022). Maps were generated with QGIS 3.34.7-Prizren software, GEBCO grid was used in maps (https://www.gebco.net/data_and_products/gebco_web_services/web_map_service/mapserv).

Depositories: **CMNH**—Carnegie Museum of Natural History, Pittsburgh, PA, USA; **DBET**—Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Wrocław, Poland; **FSCA**—Florida State Collection of Arthropods, Gainesville, FL, USA; **JHE**—JH Epler collection, Crawfordville, FL, USA; **LEBA**—Laboratory of Entomology, Buenos Aires, Argentina; **MACN**—Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina; **MCSN-VD**—Muséum Cantonal des Sciences Naturelles (Département Zoologie), Lausanne, Switzerland; **MIIZ**—Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland; **MNHN**—Muséum national d'Histoire naturelle, Paris, France; **MSNG**—Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy; BMNH—Natural History Museum, London, United Kingdom; **SEMC**—University of Kansas, Snow Entomological Collections, Lawrence, KS, USA; **USNM**—Smithsonian National Museum of

Natural History, Washington, D.C., USA; **UVG**—Universidad del Valle de Guatemala, Guatemala City, Guatemala; **WSUC**—James Entomological Collection, Washington State University, Pullman, Washington, USA.

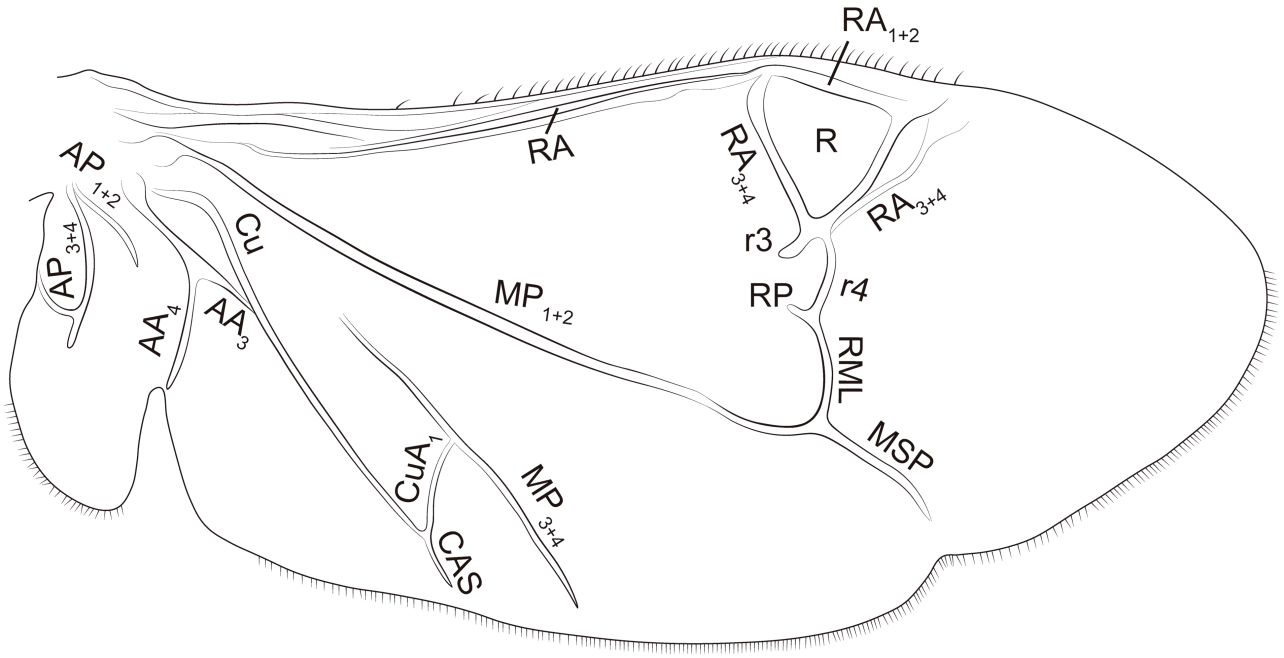

FIGURE 5. *Neocyphon pseudoplatensis* **sp. nov.**, metathoracic wing. Abbreviations: AA_3–AA_4—branches of Anal Anterior, AP_{1+2}–AP_{3+4}—branches of Anal Posterior, CAS—Cubitoanal Strut, Cu—Cubitus, CuA_1—branch of Cubitus Anterior, MP_{1+2}–MP_{3+4}—branches of Media Posterior, MSP—Medial Spur, r3 and r4—Radial Cross-Veins, R—Radial Cell, RA—Radius Anterior, RML—Radiomedial Loop, RP—Radius Posterior.

Taxonomy

Neocyphon Ruta, Libonatti, Epler & Klausnitzer gen. nov.

Type species: *Neocyphon platensis* Ruta, Libonatti, Epler & Klausnitzer **sp. nov.** (present designation).

Etymology. The generic name is derived from the genus name *Cyphon* and the prefix "neo-," from the Greek *neos* (meaning "new" or "recent"), in allusion to the fact that the genus is distributed in the New World (the Americas), predominantly Neotropical. Gender masculine.

Diagnosis. Small (TL 2.3–4.0 mm), oval, yellowish to light brown beetles, externally resembling *Contacyphon* (Fig. 1). Subgenal ridge with buttonhole configuration (Figs 3B–D); mesoventral groove for receiving prosternal process elongate, with V-shaped posterior edge, anteriorly open (Figs 4C–D); metaventral carina continuous with metanepisternal carina (Fig. 6D). Male terminal segments with reduced sternite VIII, aedeagus modified: tegmen tightly connected to middle region of penis, with a pair of digitiform apical parameres and a pair of basal apodemes (Figs 16C–D). Abdomen of females bearing a tuft of setae on a central depression of ventrite 5 (Figs 7A, C), brush organ present (Fig. 15B); prehensor well-sclerotized, usually with paired processes armed with denticles (Fig. 17C).

Description. Body oval or elongate, depressed, light brown (Fig. 1). Head relatively wide at base (Fig. 3A), gular sutures short (Fig. 3B), with button-hole configuration of subgenal ridges (Figs 3C–D). Anterior margin of labrum subtly concave (Fig. 3E). Mandibles asymmetrical, the right-handed one with a median denticle, the left-handed one without denticles (Figs 3F–G). Maxillary palpi with palpomeres 2–4 of similar length (Fig. 3H). Apical labial palpomere arising from the side of palpomere 2 (Fig. 3I). Antenna filiform, scape cylindrical with subtle ridge on anterior portion, antennomere 2 subglobular, antennomere 3 very narrow, subconical, slightly longer than antennomere 2, antennomeres 4–10 subconical, ca. 1.5× longer than antennomere 2, apical antennomere spindle-shaped. Eyes moderately large, protuberant. Prosternal process with apical portion lanceolate, pointed at both apices, and ventrally bent (Figs 4A–B). Mesoventral groove for receiving prosternal process elongate, with V-

shaped posterior edge, anteriorly open (Figs 4C–D). Mesoventral process wide and moderately notched (Fig. 4D). Metathoracic wings (Fig. 5) ca. 2.1× longer than its width, Radial Cell (R) subtriangular, Radiomedial Loop (RML) arcuate, forming oblique angle with MP_{1+2}; CuA_1 short, joining MP_{3+4}; anal field with well-marked AP. Anterior portion of mesanepisternum, mesoventrite, outer portion of mesocoxa, metanepisternum, marginal portions of metaventrite, anterior portion of metacoxa, middle portion and anterior margin of abdominal ventrite 1 bearing setae whose alveoli are broadened, circular depressions (Figs 6A–C). Metaventral carina continuous with metanepisternal carina (Fig. 6D). Metaventral discrimen approximately half the length of metaventrite from posterior edge (Fig. 6D). Abdomen with glabrous area on each side of ventrite 1 (Figs 7A–B); with granular punctures (according to Ruta 2014) in central portion and near anterior margin; ventrites 2–5 completely covered with setae; tergite VII with apical plate covered with small combs of short microtrichia, posterior margin arched and sclerotized. Male terminalia and genitalia: tergite VIII well sclerotized, comprising an apical plate and a pair of apodemes, apical plate covered with small combs of short microtrichia on basal half, minute setae and pores on the area near posterior margin, posterior margin arched and sclerotized, covered with long microtrichia (Fig. 16A); sternite VIII absent; tergite IX composed of two separate, rod-shaped hemitergites, apically ventralized and associated with sternite IX (Fig. 16B); sternite IX approximately Y-shaped (Fig. 16B); penis and tegmen fused together; tegmen tightly connected to middle region of penis, with a pair of digitiform apical parameres and a pair of basal apodemes (Figs 16C–D); penis with pala elongate, thin, and acute, trigonium elongate and simple. Female genitalia: ovipositor long; accessory gland multi-lobed; brush organ present; prehensor well-sclerotized (Figs 8, 15, 17); bursella with cuticular ornaments circular and concave. Sexual dimorphism: females bearing a tuft of setae on a central subrectangular depression (fovea) of ventrite 5 (Figs 7A, C), males devoid of tufts of setae and depressions in ventrite 5.

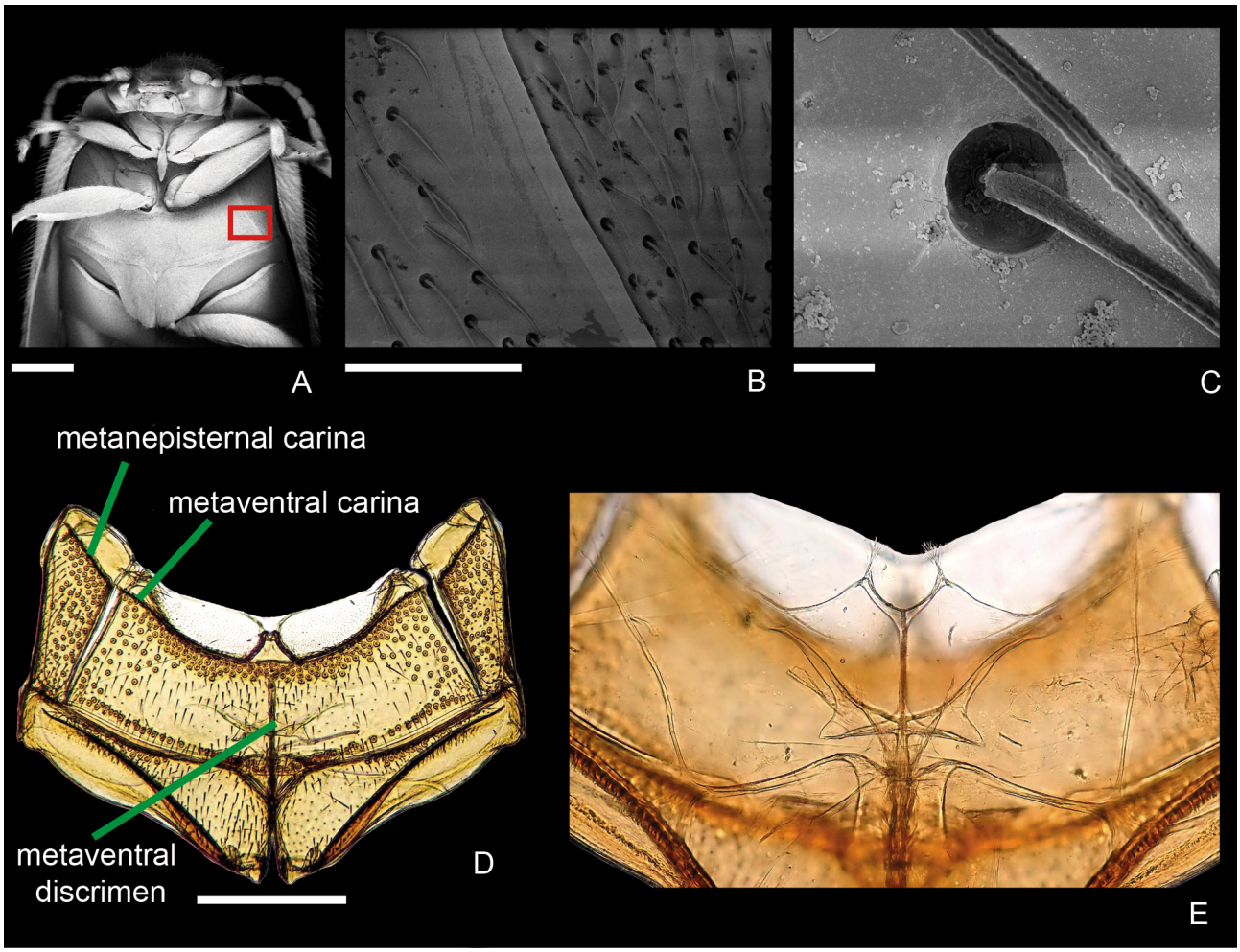

FIGURE 6. *Neocyphon* gen. nov., morphology of metathorax; A) *N. platensis* **sp. nov.**, head and thorax, ventral view; B) same, detail of area indicated in A; C) same, detail of setal socket of metaventrite; D) *N. mesopotamicus* **sp. nov.**, metathorax, ventral view; E) *N. platensis* **sp. nov.**, metendosternite, dorsal view. Scale bars: 0.5 mm for A, 0.1 mm for B, 0.005 mm for C, 0.25 mm for D, E not scaled.

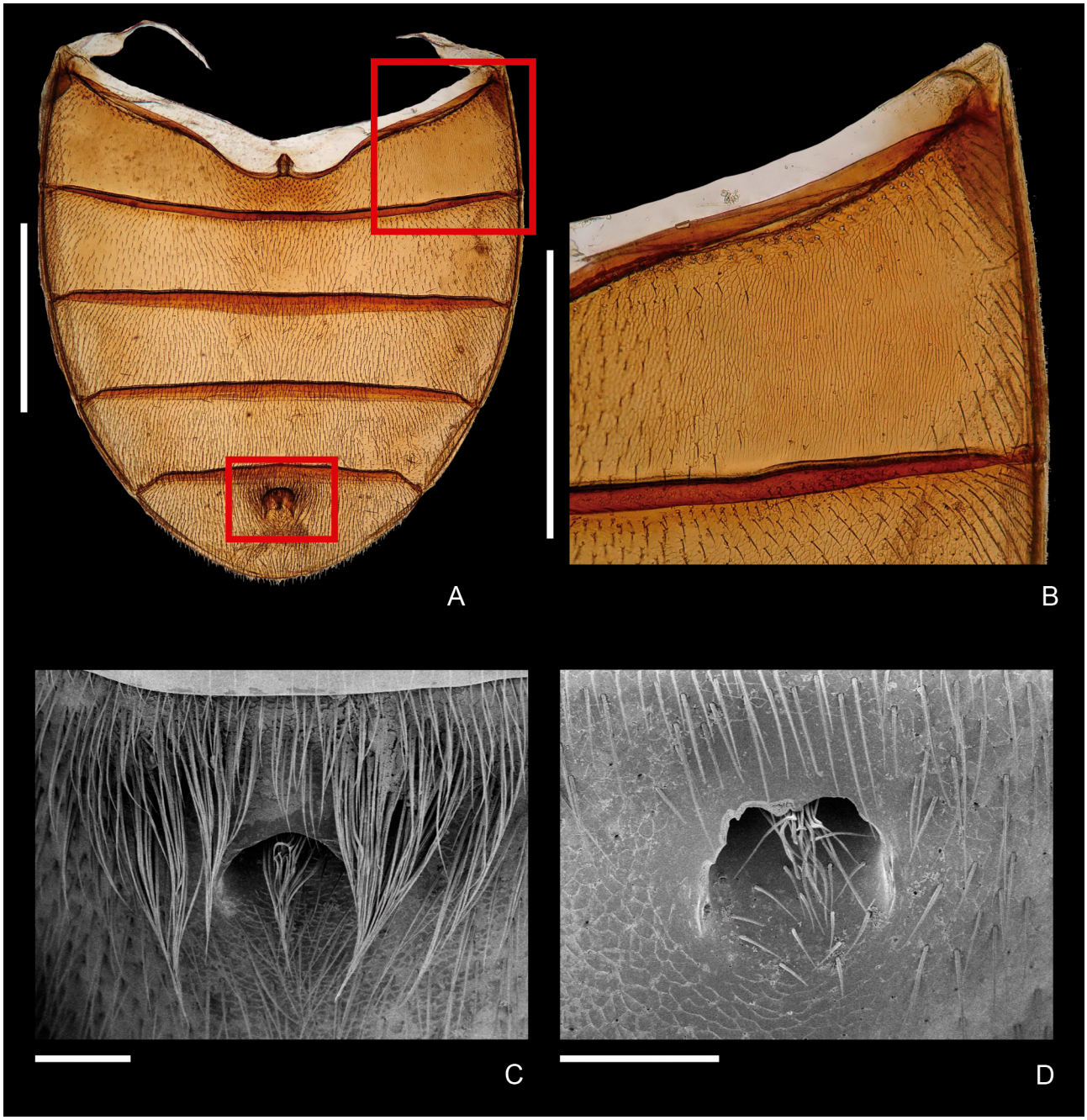

FIGURE 7. *Neocyphon* gen. nov., female abdomen. A) *N. platensis* **sp. nov.**, abdomen, ventral view; B) same, detail of the area of ventrite 1 indicated in A; C) same, detail of the area of ventrite 5 indicated in A; D) *N. mesopotamicus* **sp. nov.**, detail of the same area of ventrite 5. Scale bars: 1 mm for A, 0.5 mm for B, 0.05 mm for C–D.

Immatures. The immature stages of *Neocyphon* are unknown.

Biology. Very limited data, restricted to collecting circumstances. Adult beetles occur in a wide range of habitats, although microhabitats where larvae develop remain unknown.

Note. Based on the shared structure of the aedeagus but differing in several features of the male terminalia, we recognize two groups of species within the new genus: Group I and Group II. The type species of the genus, *Neocyphon platensis*, belongs to Group I. The species of *Neocyphon* included in Group II significantly differ from *N. platensis* in the structure of male terminal segments: tergite IX is absent; sternite IX is approximately V-shaped consisting of two hemisternites, widened apically and covered with microtrichia in apical portions.

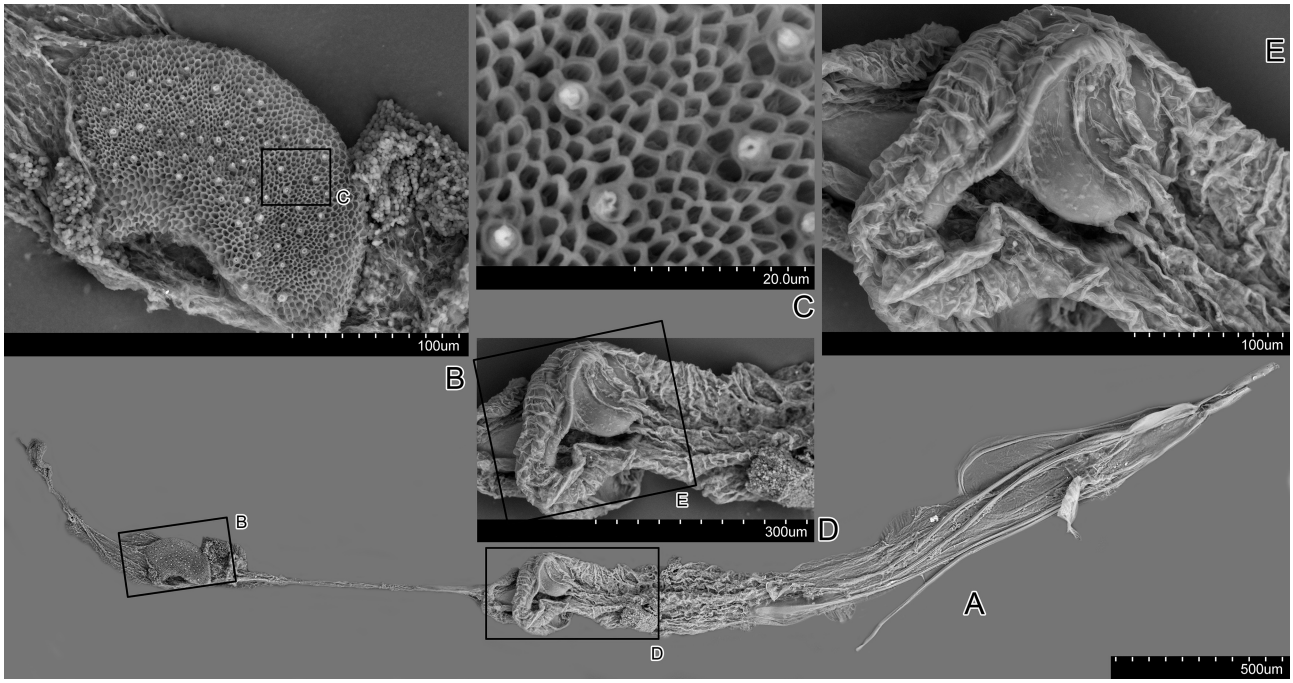

FIGURE 8. *Neocyphon mesopotamicus* **sp. nov.**, SEM images of female genitalia. A) genital tract; B) brush organ; C) brush organ, close-up; D) prehensor; E) prehensor, close-up.

Group I

Species included in the group are larger (TL 2.45–4.00 mm) than members of Group II (TL 2.30–3.20 mm), their body is more elongate, and the basal portion of elytra has subparallel sides in some species.

Male terminal segments and genitalia. Tergite VIII unmodified (Figs 9A, 11A, 13A, 14A, 16A, 18A, 20A), sternite VIII absent, tergite IX composed of two separate, rod-shaped hemitergites (Figs 9B, 11B, 13B, 14B, 16B, 18B), sternite IX Y- or V-shaped (Figs 9B, 11C, 13C, 14B, 16B, 18B), tegmen tightly connected to middle region of penis, with a pair of digitiform apical parameres and a pair of basal apodemes; penis with pala elongate, thin, and acute, trigonium elongate and simple (Figs 9C, 11D, 13D, 14C, 16C, 18C).

Distribution. More southern species, distributed from Ecuador to SE South America.

Neocyphon diiorioi Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1A, 9, 10)

Type material. Holotype: ♂ **(MACN), PARAGUAY:** Canindeyú, Reserva Natural del Bosque Mbaracayú, Aguará-ñú, 14.XII.2003, Coll. O. R. Di Iorio. **Paratypes: BRAZIL:** Minas Gerais, Aguas Vermelhas, XII.1983, Coll. M. Alvarenga, 2 ♂, 1 ♀ (CMNH). **PARAGUAY:** Itapua, San Pedro Mi, San Rafael Reserve, 26°31′24″S, 55°48′18″W, 90 m, 28 NOV 2000, Z. H. Falin, PAR1F00 065 ex: UV light, savannah, 3 exx. (SEMC).

Diagnosis. Externally resembling species of Group II of *Neocyphon* and *N. mesopotamicus* sp. nov. Male genitalia similar to those in *N. ecuadorensis* **sp. nov.** and *N. lojaensis* **sp. nov.**, but apodemes are as long as pala (pala distinctly shorter than apodemes in *N. ecuadorensis* **sp. nov.** and *N. lojaensis* **sp. nov.**). Body small, TL 2.82 mm, oval (Fig. 1A). Male tergite IX modified, forming a pair of rods, almost straight in basal 2/3, curved in apical portion; sternite IX large, V-shaped, consisting of two rods fused in basal portion, each rod is widened in apical part, and the widening has a groove for reception of apical portion of tergite IX (Fig. 9B); tegmen with straight apodemes and digitiform parameres, parameres narrowed in apical portion (Fig. 9C). Trigonium of penis slightly shorter than parameres, pointed (Fig. 9C). Prehensor elongate, dorsoventrally flattened, posterior subconical processes covered with numerous strong spines (Fig. 10).

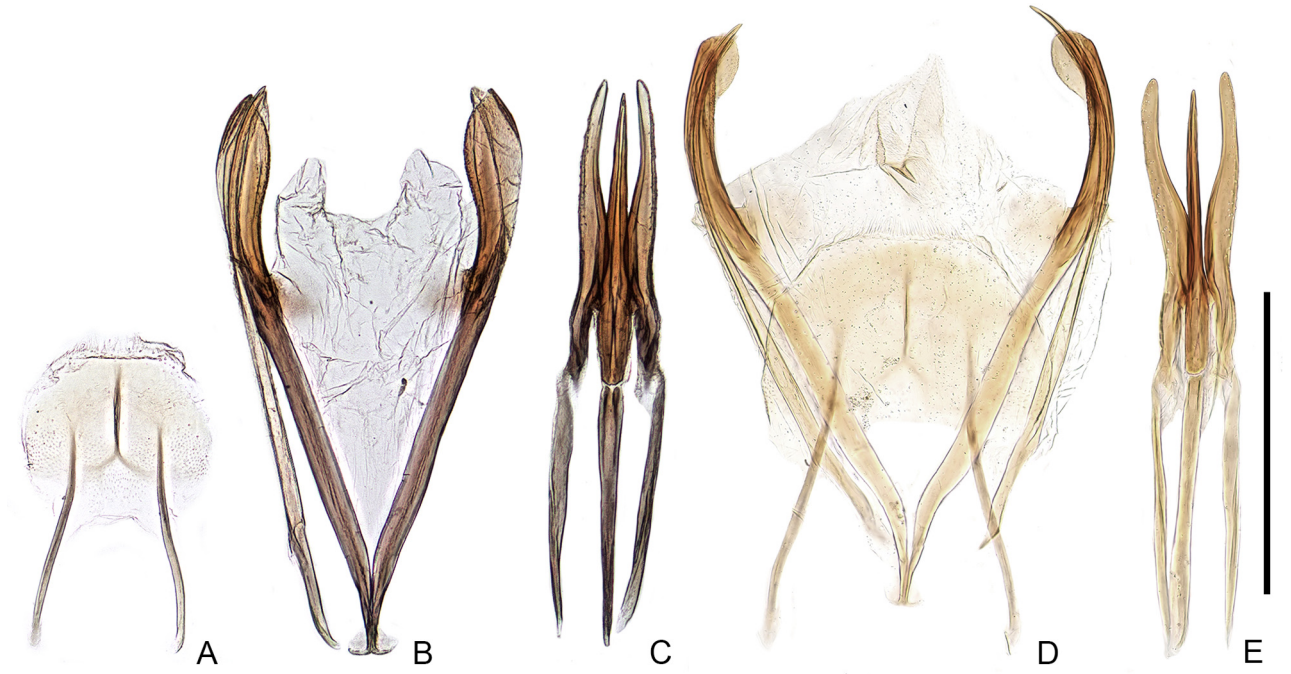

FIGURE 9. *Neocyphon diiorioi* **sp. nov.**, male genitalia. A) tergite VII, dorsal view; B) sternite IX and tergite IX, ventral view (right hemitergite IX was removed); C) aedeagus, ventral view; D) tergite VIII, sternite IX, and tergite IX, specimen from Brazil; E) aedeagus, specimen from Brazil. Scale bar: 0.5 mm.

FIGURE 10. *Neocyphon diiorioi* **sp. nov.**, female genitalia. A) genital tract; B) prehensor. Scale bars: 1.0 mm for A, 0.5 mm for B.

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1A). Body yellowish.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by 1–2× puncture diameter.

Pronotum approximately 2× as wide as long; anterolateral angles slightly projecting anteriorly; punctation on pronotum and scutellar shield similar to that on head. Elytral punctation markedly coarser than that on head, pronotum and scutellar shield, punctures separated by ca. 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.72 mm, W 0.47 mm) with apical plate approximately trapezoidal, posterior margin truncate (Fig. 9A). Tergite IX (L 0.95 mm) consisting of two rod-like hemitergites; each of hemitergites straight in basal 2/3, hooked and pointed at apex. Sternite IX (L 0.98 mm, W 0.75 mm) long (Fig. 9B), V-shaped, apical portions of arms widened, with grooves for reception of tergite IX. Aedeagus (L 0.98 mm, W 0.17 mm) symmetrical, parameres narrow, digitiform, narrowing toward apices and slightly curved, with rounded apices, apodemes widely oval in basal portion, exceeding base of pala (Fig. 9C), trigonium of penis slightly shorter than parameres, pointed at apex (Fig. 9C).

Female genitalia. Prehensor elongate, narrow (L 0.81 mm), dorsoventrally flattened, anterior portion wide, trilobate, posterior half consisting of two subconical processes densely covered with strong spines (Fig. 10).

Measurements. Male (n = 1): TL 2.82 mm, PL 0.58 mm, PW 1.16 mm, EL 2.39 mm, EW 1.66 mm. Female (n = 1): TL 3.1 mm, PL 0.6 mm, PW 1.33 mm, EL 2.57 mm, EW 1.93 mm.

Etymology. Named in honor of Dr. Osvaldo Rubén Di Iorio (1959–2016), an outstanding Argentine entomologist at the University of Buenos Aires, who collected the holotype; the specific epithet is a noun in the genitive case.

Distribution. Known from eastern Brazil and Paraguay.

Notes. The species co-occurs with *N. mesopotamicus*.

Neocyphon ecuadorensis Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1B, 11, 12)

Type material. Holotype: ♂ **(DBET), ECUADOR:** Napo prov., Cosanga vic., Yanayacu Station, Bamboo hill trail, 2125m, S 00°36′18.4″, W 77°53′09.0″, 9 XII 2009, leg. Rafał Ruta. **Paratypes: ECUADOR:** Napo prov., Cosanga vic., Yanayacu Station, 2000-2200m, 00°35′ S / 77°53′ W, 23-24 XI 2009, leg. Rafał Ruta, 2 ♂ (DBET); same data, except 15 XII 2009, leg. L. Borowiec, 1 ♂ (DBET); same data, except 17 XII 2009, leg. R. Ruta, 1 ♀ (DBET); Napo prov., Cosanga vic., Yanayacu Station, stream trail, 2000-2200m, 00°35′ S / 77°53′ W, 27 XI 2009, leg. Rafał Ruta, 1 ♀ (DBET); Napo prov., road Cosanga – Yanayacu, collecting along the road, 25 XI 2009, leg. R. Ruta, 1 ♂, 2 ♀ (DBET); Napo prov., Cosanga – Yanayacu road, 2 XII 2009, leg. Rafał Ruta, 1 ♀ (DBET); Napo prov., Cosanga vic., Yanayacu Station, Bamboo hill trail & stream, 2125m, S 00°36′18.4″ / W 77°53′09.0″, 5 XII 2009, leg. Rafał Ruta, 3 ♂ (DBET); Napo prov., Cosanga vic., Yanayacu Station, Bamboo hill trail, swamp forest, 2125m, S 00°36′18.4″ / W 77°53′09.0″, 9 XII 2009, leg. Rafał Ruta, 1 ♀ (DBET); Napo prov., Cosanga vic., Yanayacu Station, stream trail, 200-2200m, 00°35′ S / 77°53′ W, 12 XII 2009, leg. Rafał Ruta, 1 ♂ (DBET); road Yanayacu-Rio Aliso, 30 XI 2009, leg. L. Borowiec, 1 ♂, 1 ♀ (DBET); Napo prov., Cosanga env. 30.xi.2009, Yanayacu-Las Caucheras Rd., montane forest 2000 m, beating of forest vegetation, L. Sekerka & K. Stajerova lgt., 4 exx. (BMNH).

Diagnosis. Externally resembles smaller individuals of *N. platensis* **sp. nov.**, *N. pseudoplatensis* **sp. nov.** or *N. teresopolisensis* **sp. nov.** Male genitalia similar to *N. diiorioi* **sp. nov.** (but apodemes are as long as pala in this species), and *N. lojaensis* **sp. nov.** (but apodemes are straight and not widened at base in this species). Body of moderate size, TL 3.1–3.8 mm, oval (Fig. 1B). Male tergite IX modified, forming a pair of strongly curved rods, with pointed and hooked apices (Fig. 11B). Sternite IX large, V-shaped, consisting of two rods fused in basal portion, each rod is widened in apical part, and the widening has a groove for reception of apical portion of tergite IX (Fig. 11C). Tegmen with curved apodemes and digitiform parameres (Fig. 11D). Trigonium of penis slightly shorter than parameres, pointed (Fig. 11D). Prehensor elongated, covered with numerous strong spines (Fig. 12).

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae. Body yellowish to testaceous, elytral suture often darkened, dark brown.

Head wide, approximately 1.6× as wide as interocular space; punctation very fine, punctures separated by 2× puncture diameter.

FIGURE 11. *Neocyphon ecuadorensis* **sp. nov.**, male genitalia. A) tergite VIII; B) tergite IX; C) sternite IX; D) aedeagus. Scale bar: 0.5 mm.

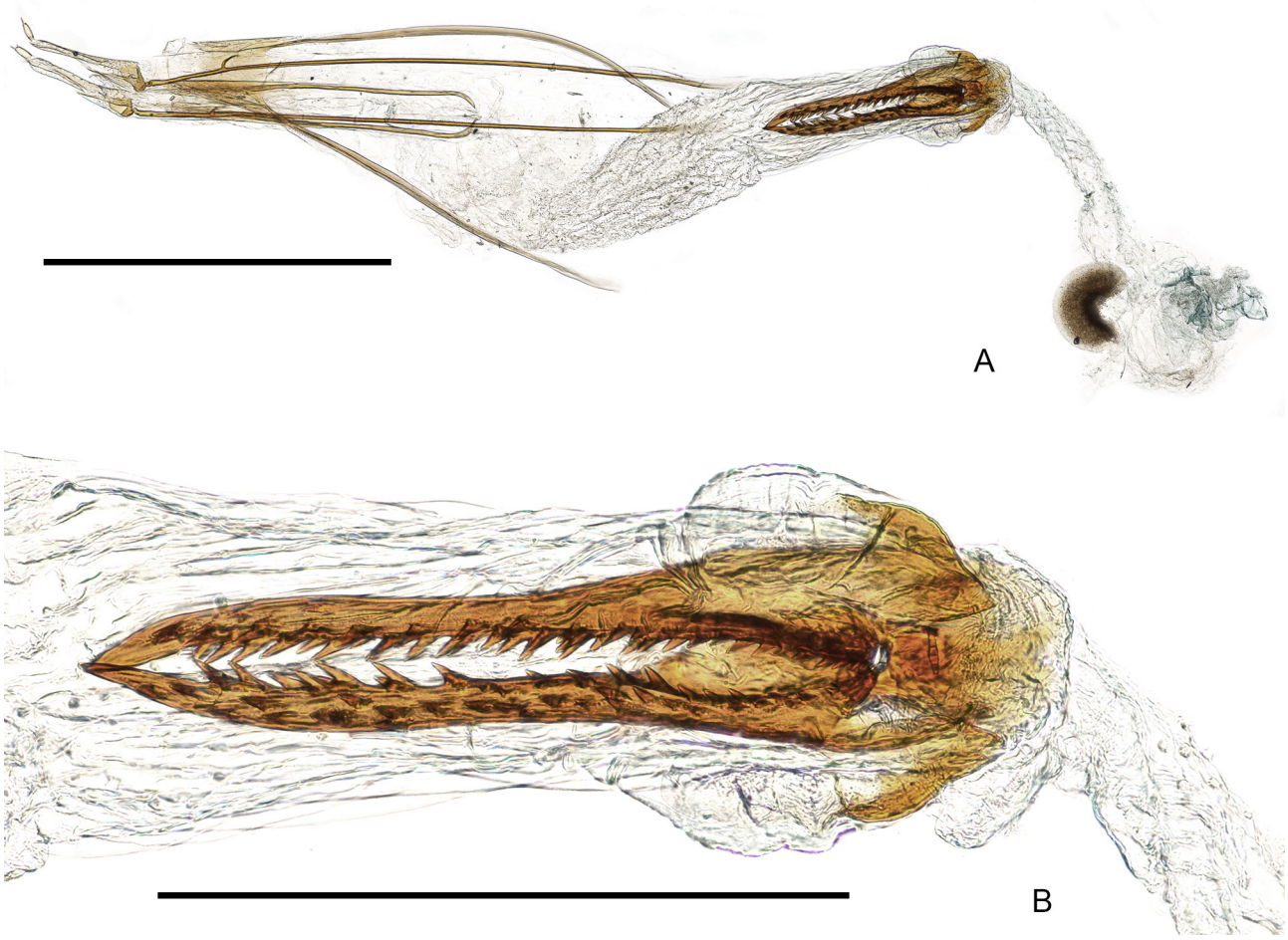

FIGURE 12. *Neocyphon ecuadorensis* **sp. nov.**, female genitalia. A) genital tract; B) prehensor. Scale bars: 1.0 mm for A, 0.5 mm for B.

Pronotum approximately 2.1× as wide as long; anterolateral angles slightly projecting anteriorly; punctation on pronotum and scutellar shield similar to that on head. Elytral punctation markedly coarser than that on head, pronotum and scutellar shield, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.75 mm, W 0.50 mm) with apical plate approximately trapezoidal, posterior margin truncate (Fig. 11A). Tergite IX (L 0.83 mm) (Fig. 11B) consisting of two strongly curved, rod-like hemitergites; each of hemitergites hooked and pointed at apex. Sternite IX (L 1.05 mm, W 0.49 mm) long (Fig. 11C), V-shaped, apical portions of arms widened, with grooves for reception of tergite IX. Aedeagus (L 0.83 mm, W 0.43 mm) symmetrical, parameres narrow, digitiform, with rounded apices, apodemes widely oval in basal portion, exceeding base of pala (Fig. 11D), trigonium of penis shorter than parameres, pointed at apex (Fig. 11D).

Female genitalia. Prehensor elongate, narrow (L 0.65 mm), V-shaped, mesal portion of processes densely covered with strong spines (Fig. 12).

Measurements. Males (n = 8): TL 3.10–3.65 mm, PL 0.55–0.68 mm, PW 1.20–1.50 mm, EL 2.65–3.10 mm, EW 1.80–2.20 mm. Females (n = 6): TL 3.30–3.80 mm, PL 0.60–0.70 mm, PW 1.30–1.53 mm, EL 2.80–3.25 mm, EW 1.95–2.35 mm.

Etymology. After Ecuador, where the type locality is situated; the specific epithet is an adjective in the nominative singular.

Distribution. Ecuador: Napo province. All specimens were collected in a small area of Andean cloud forest covering slopes of Antisana Mtn, in the proximity of Yanayacu Biological Station near Cosanga at an altitude of ca. 2000–2200 m asl. Specimens were collected in wet parts of the forest with dense vegetation.

Neocyphon lojaensis Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1C, 13)

Type material. Holotype: ♂ **(MNHN**; ex coll. M. Pic, see Fig. 2E**), ECUADOR:** Loja.

Diagnosis. Externally resembles smaller specimens of *N. ecuadorensis* **sp. nov.** but differs in male genitalia, especially straight apodemes (which are strongly curved in *N. ecuadorensis* **sp. nov.**). Body of small size, TL 2.95 mm, oval (Fig. 1C). Male tergite IX modified, forming a pair of strongly curved rods (Fig. 13B). Sternite IX large, V-shaped, consisting of two rods fused in basal portion, each rod widened in apical part, widening with groove for reception of apical portion of tergite IX (Fig. 13C). Tegmen with straight apodemes and digitiform parameres (Fig. 13D). Trigonium of penis as long as parameres, pointed (Fig. 13D).

Description. Body oval, discontinuous between pronotum and base of elytra, widest at middle, covered with suberect, whitish setae which are missing in large portions of elytra in holotype (Fig. 1C). Head and pronotum testaceous, scutellar shield brown, elytra yellowish with dark suture.

Head wide, approximately 1.6× as wide as interocular space; punctation very fine, punctures separated by 1× puncture diameter.

FIGURE 13. *Neocyphon lojaensis* **sp. nov.**, male genitalia. A) tergite VIII; B) tergite IX; C) sternite IX; D) aedeagus. Scale bar: 0.5 mm.

Pronotum approximately 2.2× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.65 mm, W 0.40 mm) with apical plate approximately trapezoidal, posterior margin truncate (Fig. 13A). Tergite IX (L 0.7 mm) consisting of two curved, rod-like hemitergites (Fig. 13B), apices of both hemitergites broken in holotype. Sternite IX (L 0.63 mm, W 0.40 mm) long (Fig. 13C), V-shaped, apical portions of arms widened, with grooves for reception of tergite IX. Aedeagus (L 0.63 mm, W 0.18 mm) symmetrical, parameres narrow, curved, with rounded apices, apodemes straight in basal portion, exceeding base of pala (Fig. 13D), trigonium of penis as long as parameres, pointed at apex (Fig. 13D).

Female unknown.

Measurements. Male (n = 1): TL 2.95 mm, PL 0.56 mm, PW 1.25 mm, EL 2.44 mm, EW 1.73 mm.

Etymology. After the locus typicus, Loja; the specific epithet is an adjective in the nominative singular.

Distribution. The species is known only from the type locality, Loja, in southern Ecuador.

Neocyphon mesopotamicus Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1D, 14, 15)

Type material. Holotype: ♂ **(MACN), ARGENTINA:** Corrientes, RP 86 hacia el Parque Nacional Mburucuyá, 28° 3′ 39″ S 58° 9′ 32″ W, 10.XII.2012, light trap, Coll. M. C. Michat & P. L. M. Torres. **Paratypes: ARGENTINA:** same data as holotype, 100 ♂ and 32 ♀ (MACN); Corrientes, Reserva Natural del Iberá, Colonia Pelegrini, 2.XII.2012, light trap, Coll. S. A. Mazzucconi, 1 ♂ (MACN); Gran Chaco, Bords du Rio Tapenaga, Colonie Florencia, E. R. Wagner 1903, 1 ♀ (MNHN). **BRAZIL:** Minas Gerais, Pedra Azul, 800m, XI.1972, M. Alvarenga, 1 ex. (CMNH); Est. Rio de Janeiro, Araruama, XI.1981, Coll. M. Alvarenga, 1 ♂ and 1 ♀ (CMNH); Bahia, Brasil, Agosto 1979, F. P. Benton, Brit. Mus. 1982-309, 1 ex. (BMNH). **PARAGUAY:** Itapua, San Pedro Mi, San Rafael Reserve, 26°31′24″S, 55°48′18″W, 90 m, 28 NOV 2000, Z. H. Falin, PAR1F00 065 ex: UV light, savannah, 1 ex. (SEMC); same data, except 27 NOV 2000, PAR1F00 058, ex: pyrethrum fogging shrubs, 1 ex. (SEMC); Itapua, Karonay, 17 km W, San Rafael Reserve, 26°45′53″S, 55°50′37″W, 90-110 m, 17 NOV 2000, Z. H. Falin, PAR1F00 001 ex: UV light, 2 exx. (SEMC).

Additional material examined. ARGENTINA: same data as holotype, dissected for optical microscopy and SEM studies, 2 ♀ (LEBA); Misiones, Parque Nacional Iguazú, 27.XII.2010, light trap, Coll. M. C. Michat, 1 ♂ (LEBA).

Diagnosis. Externally resembling species of Group II of *Neocyphon* and *N. diioirioi* sp. nov. Unusually elongate male genitalia similar allow to easily distinguish this species from other members of the genus. Body small, oval (Fig. 1D). Male genitalia extremely elongate (Fig. 14E), sternite IX very thin, forked at middle, and terminating in triangular plates (Fig. 14B), tegmen with parameres wide at base, narrowing to apex, apodemes short, not exceeding base of pala (Fig. 14E), penis with apex rounded (Fig. 14C). Prehensor approximately triangular, furrowed medially, devoid of spiny structures (Fig. 15D).

Description. Body oval, very subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1D). Body reddish testaceous, some specimens darkened along suture and costal margin of elytra.

Head wide, approximately 1.6× as wide as interocular space; punctation very fine, punctures separated by 1× puncture diameter.

Pronotum approximately 2.0× as wide as long; anterolateral angles slightly projecting anteriorly; punctation on pronotum and scutellar shield similar to that on head. Elytral punctation markedly coarser than that on head, pronotum and scutellar shield, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.57 mm, W 0.33 mm) with apical plate approximately trapezoidal, posterior margin notched medially (Fig. 14A). Tergite IX and sternite IX markedly long, twice as long as tergite VIII (Figs 14B, E). Sternite IX (L 1.05 mm, W 0.27 mm) very thin, forked at middle, and terminating in triangular plates (Fig. 14B). Hemitergites IX very long (L 1.07 mm) and slightly curved (Fig. 14B). Tegmen (L 0.48 mm, W 0.15 mm) with parameres wide at base, narrowing to apex, apodemes almost straight, parallel, short, not exceeding base of pala (Fig. 14C). Trigonium of penis with apex rounded (Fig. 14D).

Female genitalia. Prehensor approximately triangular, furrowed medially, devoid of spiny structures (Fig. 15).

Measurements. Males (n = 10): TL 2.45–2.97 mm, PL 0.49–0.55 mm, PW 1.04–1.25 mm, EL 1.87–2.45 mm, EW 1.53–1.77 mm. Females (n = 10): TL 2.63–2.97 mm, PL 0.49–0.55 mm, PW 1.10–1.22 mm, EL 2.26–2.54 mm, EW 1.53–1.71 mm.

Etymology. The name refers to the fact that the species was found in the Argentine geographic area known as Mesopotamia; the specific epithet is an adjective in the nominative singular.

Distribution. Northeastern Argentina, Paraguay and eastern Brazil.

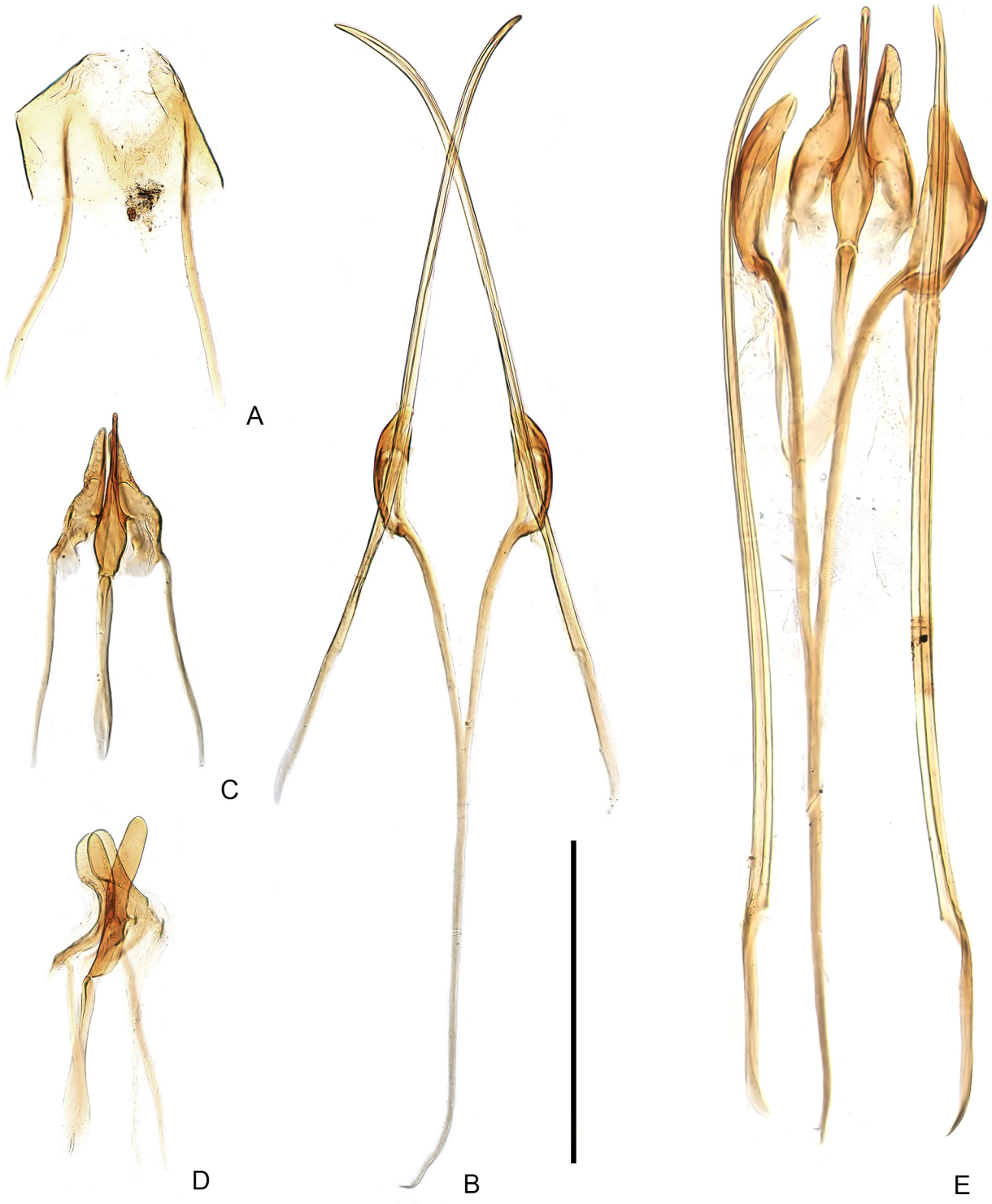

FIGURE 14. *Neocyphon mesopotamicus* **sp. nov.**, male genitalia. A) tergite VIII; B) sternite IX and tergite IX; C) aedeagus, dorsal view; D) aedeagus, lateral view; E) sternite IX, tergite IX and aedeagus, not separated. Scale bar: 0.5 mm for A–D, E is not scaled.

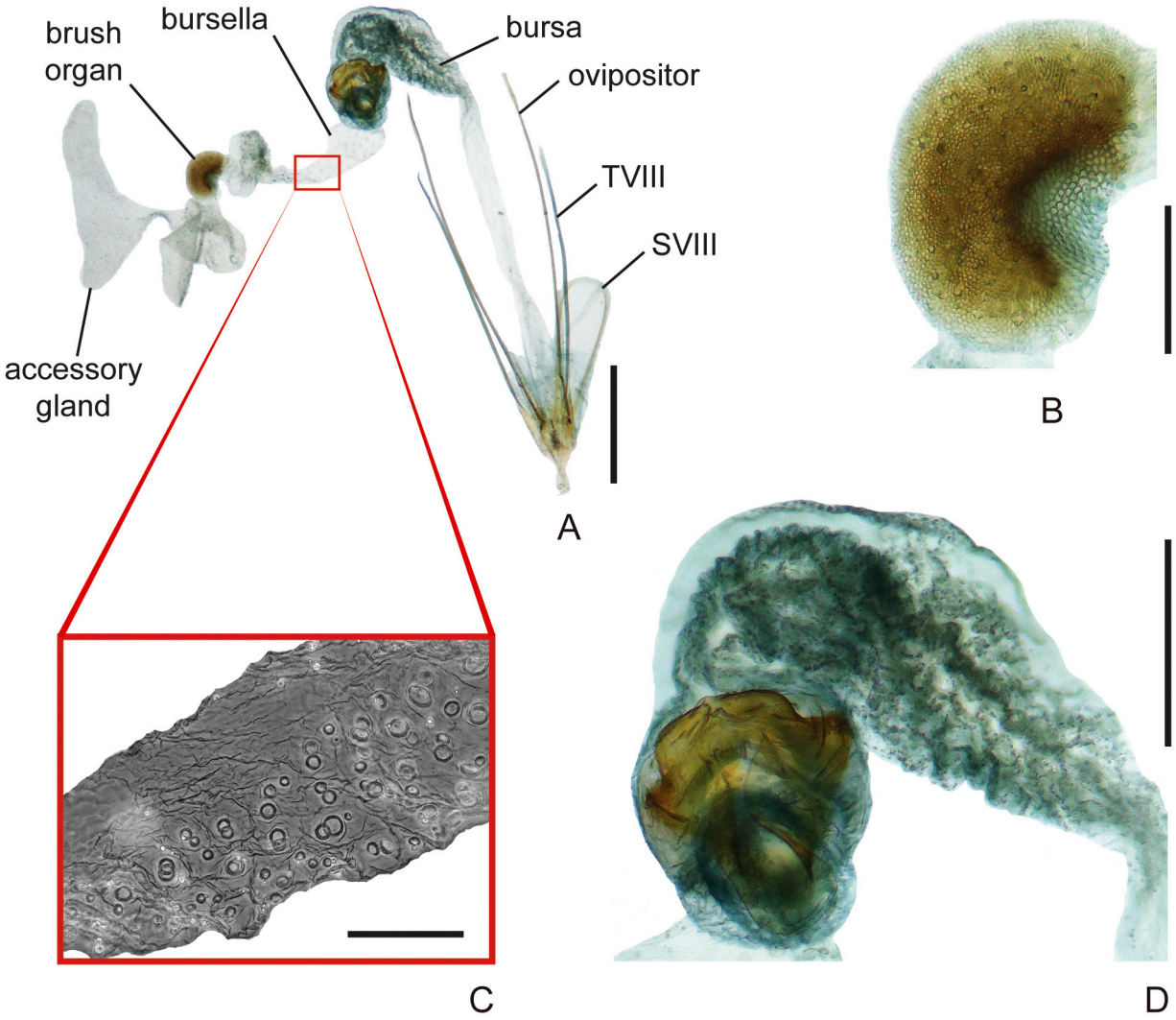

FIGURE 15. *Neocyphon mesopotamicus* **sp. nov.**, female genitalia. A) terminalia and genitalia (except ovaries); B) brush organ; C) detail of area indicated in A; D) bursal sclerite. Scale bars: 0.5 mm for A, 0.1 mm for B, 0.05 mm for C, 0.25 mm for D.

***Neocyphon platensis* Ruta, Libonatti, Epler & Klausnitzer sp. nov.**
(Figs 1E, 16, 17)

Type material. Holotype: ♂ **(MACN), ARGENTINA:** Buenos Aires, Magdalena, Reserva El Destino, 20.XI.2011, light trap, Coll. M. L. Libonatti. **Paratypes: ARGENTINA:** same data as holotype, 1 ♂ and 17 ♀ (MACN). **URUGUAY:** Montevideo, Coll. Sivori, 3 ♀ (MSNG).

Additional material examined. ARGENTINA: same data as holotype, dissected for optical microscopy and SEM studies, 1 ♂ and 1 ♀ (LEBA).

Diagnosis. One of the largest members of the genus, externally similar to *N. pseudoplatensis* **sp. nov.** and *N. teresopolisensis* **sp. nov.** but easy to distinguish on the basis of male genital characters: sternite IX terminating in triangular, curved plates in *N. platensis* **sp. nov.** and *N. teresopolisensis* **sp. nov.** (the plates are rectangular in *N. pseudoplatensis* **sp. nov.**), but both species differ in the shape of hemitergites IX – in *N. teresopolisensis* **sp. nov.** are strongly curved in apical portion, and in *N. platensis* **sp. nov.** hemitergites are subtly curved. Body relatively large, TL 3.75–4 mm, elongate, reddish testaceous (Fig. 1E). Tergite IX and sternite IX markedly long, almost twice as long as tergite VIII (Fig.16B), sternite IX forked preapically, terminating in triangular plates (Fig. 16B), tegmen

with parameres elongate and thin, apodemes curved, exceeding base of pala (Fig. 16C), penis with apex acute (Fig. 16D). Prehensor comprising an elongate rod-like sclerite, a pair of wide triangular sclerites densely covered with spiny structures, and a pair of laminar sclerites (Fig. 17).

Description. Body reddish testaceous, except a thin brown stripe along the margins of pronotum, scutellar shield and elytra, and a pale testaceous stripe that begins in the anterolateral corner of elytron, extends backwards to the apex of elytron along the costal margin, and is connected to a short transverse spot behind humerus.

Head wide, approximately 1.6× as wide as interocular space; punctation very fine, punctures separated by 1× puncture diameter.

Pronotum approximately 2× as wide as long; punctation on pronotum and scutellar shield similar to that on head, but separated by 2× puncture diameter. Elytral punctation markedly coarser than that on head, pronotum and scutellar shield, punctures separated by 0.5–2.0× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.82 mm, W 0.63 mm) with apical plate approximately trapezoidal, posterior margin straight (Fig. 16A), microsculpture as in *Neocyphon mesopotamicus*. Sternite IX and tergite IX markedly long, twice as long as tergite VIII. Sternite IX (L 1.59 mm, W 0.35 mm) wide basally, forked preapically, and terminating in triangular plates (Fig. 16B). Hemitergites IX (L 1.25 mm) slightly curved, almost as long as sternite IX (Fig. 16B). Tegmen (L 1.39 mm, W 0.28 mm) with parameres elongate and thin, apodemes curved, exceeding base of pala (Fig. 16C). Penis with apex acute (Fig. 16C).

Female genitalia. Prehensor comprising an elongate rod-like sclerite, a pair of wide triangular sclerites densely covered with spiny structures, and a pair of laminar sclerites (Fig. 17).

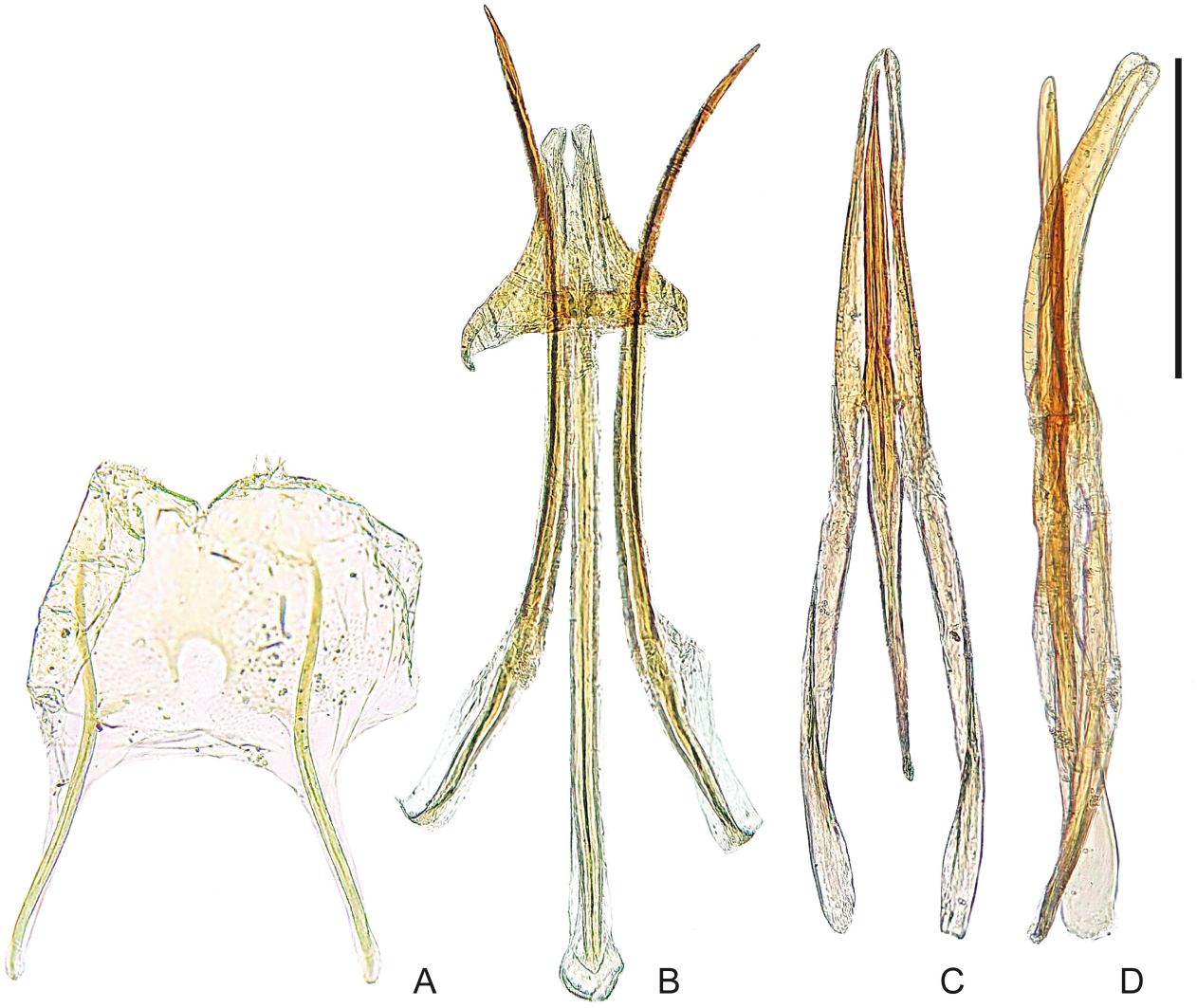

FIGURE 16. *Neocyphon platensis* **sp. nov.**, male genitalia. A) tergite VIII, dorsal view; B) sternite IX and tergite IX, ventral view; C) aedeagus, ventral view; D) aedeagus, left view. Scale bar: 0. 5 mm.

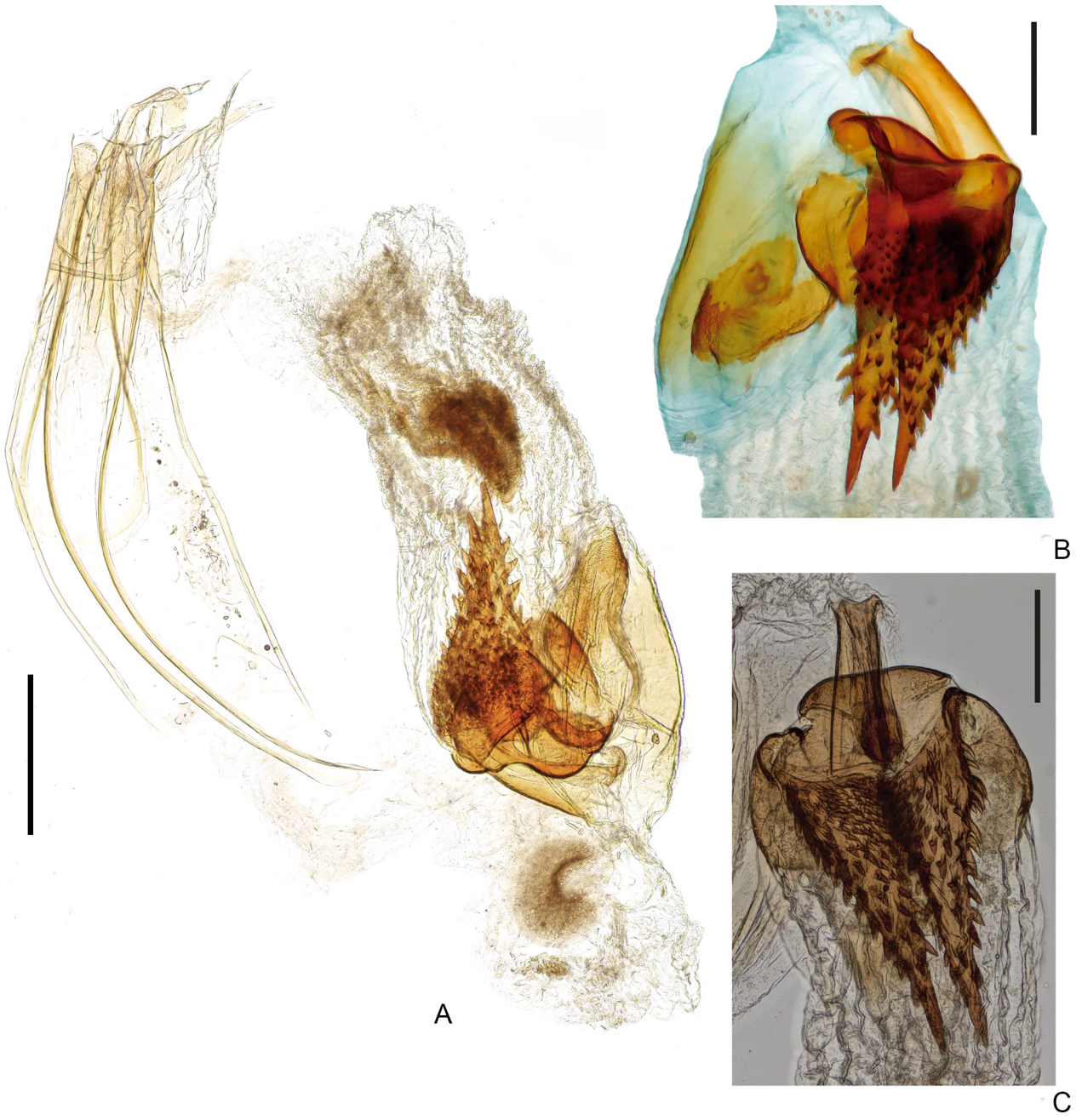

FIGURE 17. *Neocyphon platensis* **sp. nov.**, female genitalia. A) genital tract; B) prehensor, lateral view; C) prehensor, dorsal view. Scale bars: 0.5 mm for A, 0.25 mm for B and C.

Measurements. Males (n = 2): TL 3.75–4.00 mm, PL 0.73 mm, PW 1.51–1.66 mm, EL 3.26–3.41 mm, EW 2.09–2.24 mm. Females (n = 10): TL 4.04–4.58 mm, PL 0.73–0.88 mm, PW 1.56–1.80 mm, EL 3.51–3.90 mm, EW 2.34–2.58 mm.

Etymology. The epithet refers to the fact that the species was found in a coastal locality of the Río de la Plata estuary; the specific epithet is an adjective in the nominative singular.

Distribution. Argentina (Buenos Aires Province) and Uruguay.

***Neocyphon pseudoplatensis* Ruta, Libonatti, Epler & Klausnitzer sp. nov.**
(Figs 1F, 18, 19)

Type material. Holotype: ♂ **(MACN), ARGENTINA:** Buenos Aires, Magdalena, Reserva El Destino, 26.XI.2012, beating, Coll. M. L. Libonatti. **Paratypes: ARGENTINA:** same data as holotype, 1 ♂ and 1 ♀ (MACN); same data except 25.XI.2012, 1 ♀ (MACN); Buenos Aires, Isla Martin García, 1938, M. J. Viana, 1 ♂, 1 ♀, 2 exx. (MNHN).

Additional material examined. ARGENTINA: same data as holotype, dissected for optical microscopy study, 1 ♀ (LEBA).

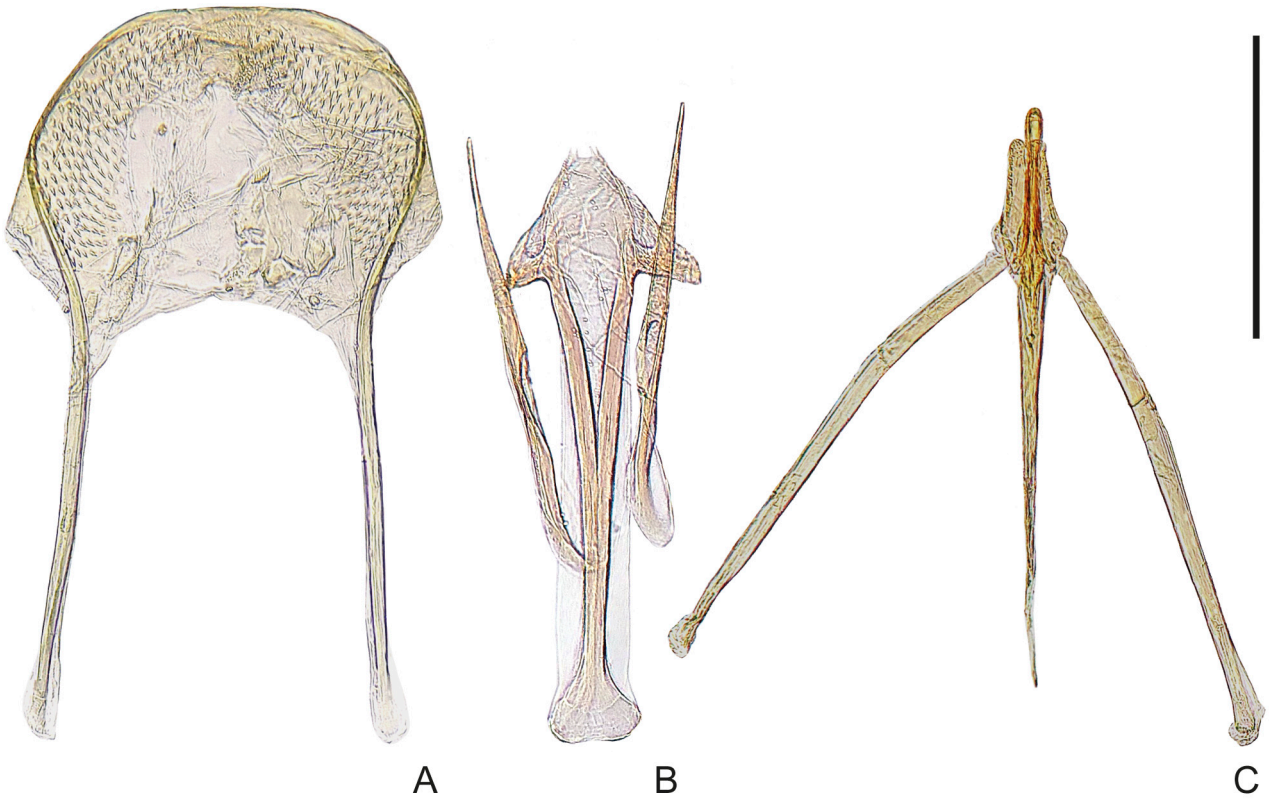

FIGURE 18. *Neocyphon pseudoplatensis* **sp. nov.**, male genitalia. A) tergite VIII, dorsal view; B) sternite IX and tergite IX, ventral view; C) adeagus, ventral view. Scale bar: 0.5 mm.

Diagnosis. One of the largest members of the genus, externally similar to *N. platensis* **sp. nov.** and *N. teresopolisensis* **sp. nov.** but male sternite IX terminating in rectangular plates (in contrast to *N. platensis* **sp. nov.** and *N. teresopolisensis* **sp. nov.** where the plates are subtriangular). Tergite IX and sternite IX short, shorter than tergite VIII (Fig. 18B), sternite IX with apical third forked into a pair of subrectangular sclerotized extensions, connected by a more membranous triangular plate (Fig. 18D), tergite IX consisting of almost straight hemitergites, tegmen with parameres wide, apodemes very slightly curved, approximately 3× as long as parameres and exceeding base of pala (Fig. 18C), trigonium of penis longer than parameres, apex rounded (Fig. 18C). Prehensor comprising a short rod-like sclerite, a pair of narrow triangular sclerites densely covered with spiny structures, lacking additional laminar sclerites (Fig. 19).

Description. Body oval, discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1F). Body yellow.

Head wide, approximately 1.5× as wide as interocular space; punctation very fine, punctures separated by 1× puncture diameter.

Pronotum approximately 2.1× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 1.20 mm, W 0.72 mm) with apical plate arched, bearing small, spine-shaped microtrichia (Figs 18A). Sternite IX and tergite IX short, shorter than tergite VIII (Fig. 18B). Sternite IX (L 0.96 mm, W 0.32 mm) forked in apical third in a pair of rectangular plates (Fig. 18B). Tegmen (L 1.20 mm, W 0.48 mm) with parameres wide, apodemes very slightly curved (apodemes appear more separated in Fig. 18C than in reality, as an artifact of slide preparation (flattening)), approximately 3× as long as parameres and exceeding base of pala (Fig. 18C). Trigonium of penis longer than parameres, with apex rounded (Fig. 18C).

Female genitalia. Prehensor comprising a short, rod-like sclerite and a pair of narrow triangular sclerites densely covered with spiny structures, lacking additional laminar sclerites (Fig. 19).

Measurements. Males (n = 2): TL 3.46–3.65 mm, PL 0.68 mm, PW 1.41–1.51 mm, EL 2.97–3.12 mm, EW 1.95–2.00 mm. Females (n = 2): TL 3.56–3.60 mm, PL 0.73 mm, PW 1.46 mm, EL 2.92–3.17 mm, EW 2.00–2.09 mm.

Etymology. From the Greek *ψεῦδο*, which means "fake", in reference to the misleading resemblance of this species with *Neocyphon platensis* **sp. nov.**; the specific epithet is an adjective in the nominative singular.

Distribution. Argentina (Buenos Aires Province).

FIGURE 19. *Neocyphon pseudoplatensis* **sp. nov.**, prehensor, dorsal view. Scale bar: 0.25 mm.

Neocyphon teresopolisensis Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1G, 20)

Type material. Holotype: ♂ (MNHN), BRAZIL: Theresop.[olis] (label: Fig. 2F).

Diagnosis. Externally similar to *N. platensis* **sp. nov.** and *N. pseudoplatensis* **sp. nov.** but easy to identify on the base of male genital characters: hemitergites IX curved in apical portion (subtly curved in *N. platensis* **sp. nov.**, and straight in *N. pseudoplatensis* **sp. nov.**). Male tergite VIII with two oblique, hooked structures in anterior portion (Fig. 20A, known only in *N. teresopolisensis* **sp. nov.**), tergite IX and sternite IX 1.5× as long as tergite VIII (Fig. 20B), sternite IX very thin, forked at apex, and terminating in triangular, curved plates (Fig. 20C), tergite IX rod-like, straight in basal 4/5, distinctly curved at apex, tegmen with wide parameres, apodemes short, slightly longer than base of pala (Fig. 20D), penis slightly shorter than parameres, apex pointed (Figs 20E–F).

Description. Body oval, discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1G). Body yellow.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by 1× puncture diameter.

Pronotum approximately 2.3× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter. Elytra with 3 subtly visible, longitudinal carinae.

Male terminalia and genitalia. Tergite VIII (L 0.90 mm, W 0.58 mm) with apical plate approximately trapezoidal, with two oblique, hooked structures in posterior portion (Figs 20A, F). Sternite IX and tergite IX markedly long, 1.5× as long as tergite VIII (Fig. 20B). Sternite IX very thin, forked at apex, and terminating in triangular, curved plates (Figs 20B, C). Tergite IX (L 1.33 mm) (Fig. 20B) consisting of two hemitergites, each hemitergite straight in basal 4/5 of its length and curved at apex. Aedeagus much smaller than terminal segments (L 0.80 mm, W 0.27 mm). Tegmen with parameres wide at base, with rounded apices (Figs 20D, E), apodemes sightly curved, and longer than pala. Trigonium of penis with pointed apex, slightly shorter than parameres (Fig. 20E).

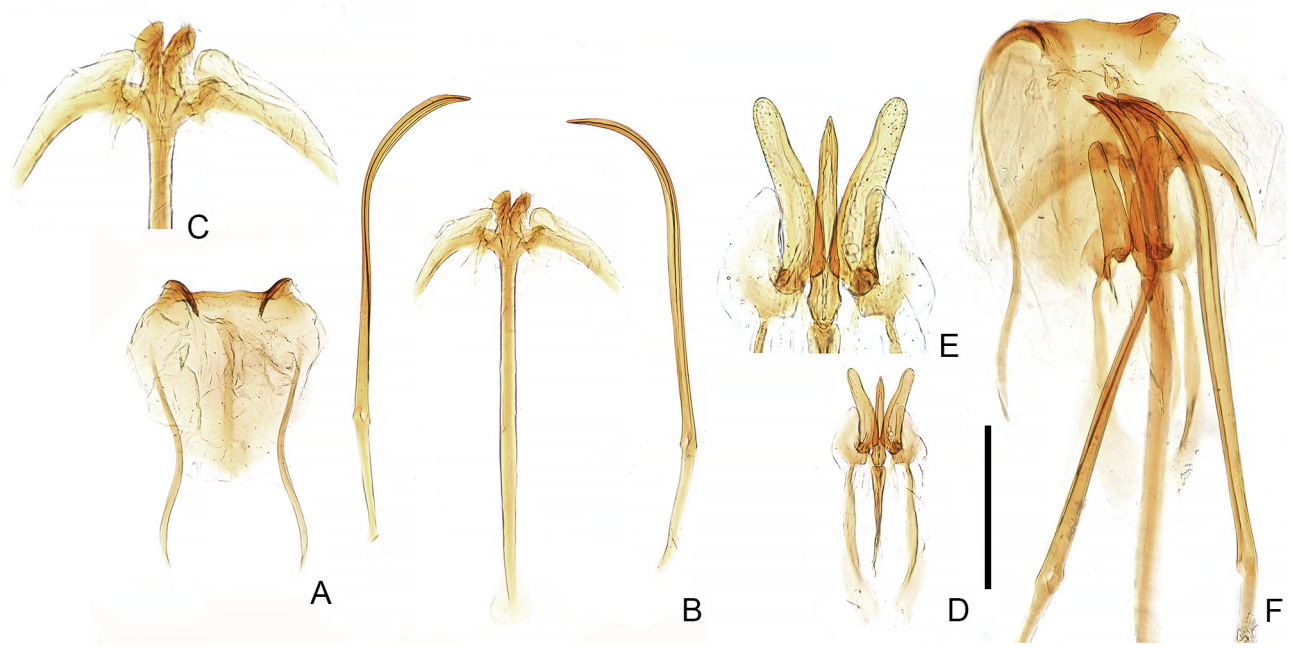

FIGURE 20. *Neocyphon teresopolisensis* **sp. nov.**, male genitalia. A) tergite VIII; B) tergite IX and sternite IX; C) sternite IX close-up; D) aedeagus; E) parameres and trigonium; F) male genitalia, semilateral view. Scale bar: 0.5 mm for A, B, D; C, E and F not scaled.

Female unknown.

Measurements. Male (n = 1): TL 3.81 mm, PL 0.68 mm, PW 1.53 mm, EL 3.12 mm, EW 2.05 mm.

Etymology. After locus typicus, Teresópolis; the specific epithet is an adjective in the nominative singular.

Notes. Based on the type of the label (Fig. 2E), the specimen was collected in the 19th century (A. Mantilleri, pers. comm.); its collector and provenance are unknown.

Distribution. Brazil, Rio de Janeiro state, known only from the type locality on the SE coast of the country.

Group II

All members of the group are externally very similar, and possible to identify only on the basis of male and female genitalia. In general, species included here are smaller (TL 2.3–3.2 mm) and more oval than members of Group I.

Male terminal segments and genitalia. Tergite VIII unmodified (Figs 21A, 23A, 25A, 26A, 28A, 30A), sternite VIII absent, tergite IX absent, sternite IX consisting of two hemisternites (Figs 21A, 23B, 25B, 26B, 28B,

30B), tegmen tightly connected to middle region of penis, with a pair of digitiform apical parameres and a pair of basal apodemes; penis with pala elongate, thin, and acute, trigonium elongate and simple (Figs 21B, 23C, 25C, 26C, 28C, 30C).

Distribution. More northern species, distributed from southern North America (Florida), Central America, and northern South America to Bolivia and Paraguay.

Neocyphon corumbanus (Pic, 1941) comb. nov.

(Figs 1H, 21, 22)

Cyphon corumbanum Pic, 1941: 3.
Contacyphon corumbanum (Pic, 1941): Zwick *et al.* 2013: 340.

Type material. Lectotype (present designation): ♂ **(MNHN), BRAZIL:** Corumba, Matto Grosso, with a label in Pic's hand "corumbanum n. sp.". **Paralectotypes:** same data as holotype, 5 ♂ (MNHN), 1 ♂ (BMNH, with labels "co-type" and "syntype", Fig. 2A).

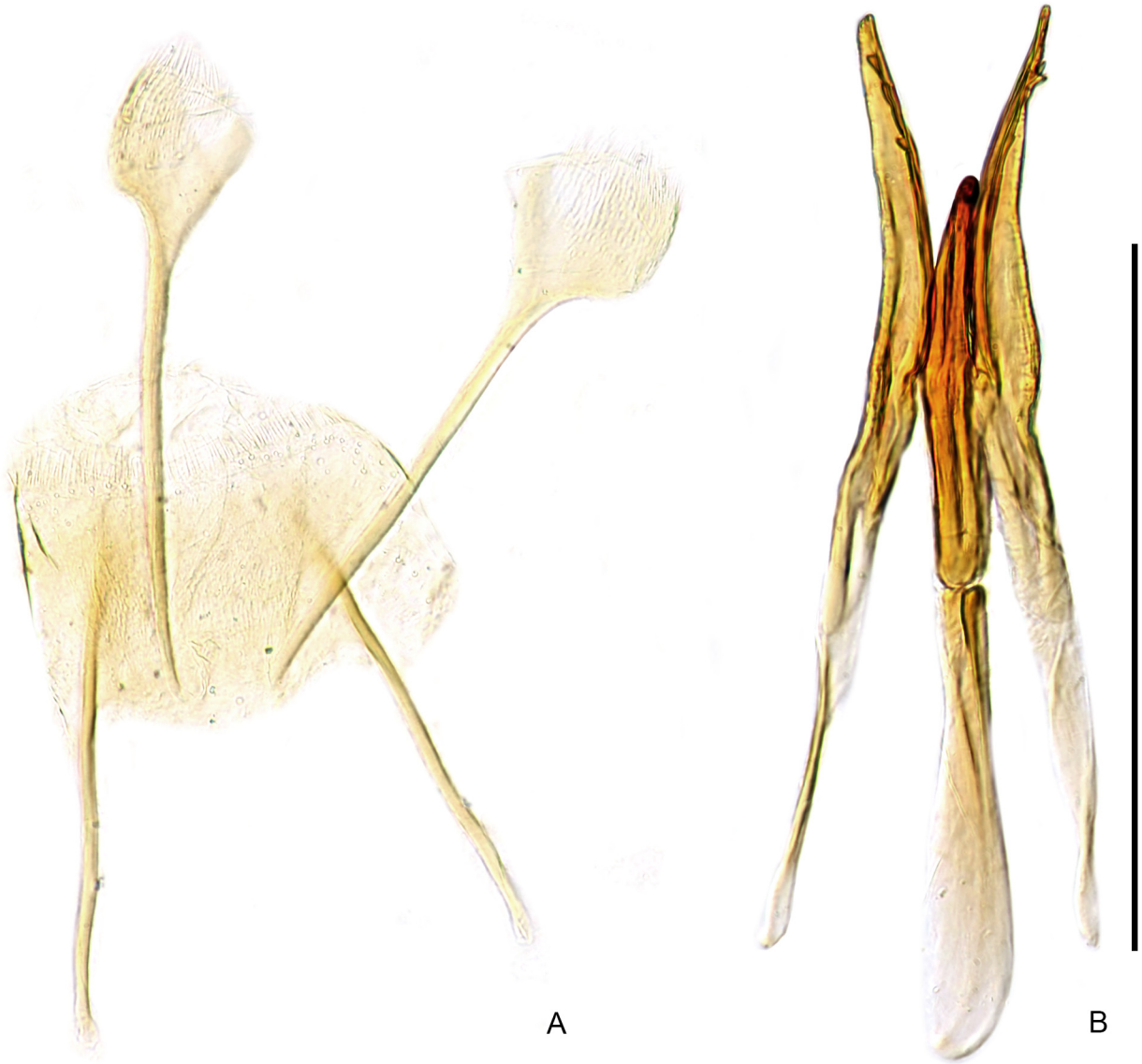

FIGURE 21. *Neocyphon corumbanus* (Pic), male genitalia. A) tergite VIII and sternite IX; B) aedeagus. Scale bar: 0.5 mm.

Additional material examined. BOLIVIA: El Beni, El Porvenir Stn, NE of San Borja, 5 August 1988, ex. malaise trap, Robert W. Brooks, BIOLAT-SI/MAB, 1 ex. (SEMC); same data but 6–9 August 1988, at lights, 1 ex. (SEMC); Santa Cruz, Andres Ibanez Prov., 8 km N Santa Cruz, El Vallecito, 17–20 Oct 1994, R. Ward, 5 ♂, 2 ♀ (CMNH); Santa Cruz Amboro National Park, Los Volcanes, c. 1000m, S 18°06′, W 63°36′, 20 XI–12 XII 2004, MV Light Sheet on stream beach, Barclay, M.V.L., & Mendel, H., BMNH(E)2004-280, 1 ex. (BMNH). **PARAGUAY:** Canindeyú, Reserva Natural del Bosque Mbaracayú, Aguará-ñú, 14.XII.2003, Coll. O. R. Di Iorio, 5 ♂, 9 ♀ (LEBA).

FIGURE 22. *Neocyphon corumbanus* (Pic), prehensor. A) lateral view; B) dorsal view. Scale bar: 0.5 mm.

Diagnosis. Differs from most other members of Group II of *Neocyphon* in details of male genitalia. Aedeagus as in *N. peruvianus* **sp. nov.**, but denticles on parameres larger and arranged in more regular row, ca. 3× longer than wide, trigonium shorter than parameres, hooked dorsad (Fig. 21B). Prehensor similar to that of *N. humberti* and *N. guatemalensis* but posterior processes not hooked and ventral process not covered with denticles (Fig. 22).

Redescription. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1H). Body yellow.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by 1× puncture diameter.

Pronotum approximately 2.2× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.43 mm, W 0.34 mm) with apical plate approximately trapezoidal, apodemes diverging basally (Fig. 21A). Sternite IX (L 0.52 mm, W 0.38 mm) consisting of paired hemisternites (Fig. 21A), each widening in suboval plate in apical portion. Aedeagus wide (L 0.75 mm, W 0.20 mm). Tegmen with parameres wide at base, narrowing to apex, subtriangular, covered with denticles regularly arranged in a row on dorsal side, apodemes almost straight, slightly diverging basally, short, not exceeding base of pala (Fig. 21B). Trigonium of penis slightly hooked dorsally at apex (Fig. 21B).

Female genitalia. Prehensor (L 0.47 mm) wider in basal (anterior) portion, apical (posterior) portion with two spine-like processes covered with small denticles and a single ventral process covered with subtle setation (Fig. 22).

Measurements. Males (n = 6): TL 2.60–2.85 mm, PL 0.50–0.55 mm, PW 1.15–1.25 mm, EL 2.15–2.30 mm, EW 1.65–1.75 mm. Females (n = 2): TL 2.70–2.80 mm, PL 0.53–0.55 mm, PW 1.23–1.25 mm, EL 2.25–2.30 mm, EW 1.65–1.80 mm.

Note. The specific epithet is an adjective and has been modified to agree in gender with *Neocyphon* (masculine).

Distribution. Known from Brazil, Bolivia and Paraguay.

FIGURE 23. *Neocyphon guatemalensis* (Champion), male genitalia. A) tergite VIII; B) sternite IX; C) aedeagus. Scale bar: 0.5 mm.

***Neocyphon guatemalensis* (Champion, 1897) comb. nov.**
(Figs 1I, 23, 24)

Cyphon guatemalensis Champion, 1897: 622.
Contacyphon guatemalensis (Champion, 1897): Zwick *et al.* 2013.

Type material. Lectotype (present designation): ♂ (BMNH), GUATEMALA: Torola, 1000 ft., Champion, B.C.A. Col. III. (1). Cyphon guatemalensis Ch. **Paralectotypes (present designation): GUATEMALA:** Senahi, Vera Paz, Champion, B.C.A. Col. III. (1), Cyphon guatemalensis Ch, 2 ♀ (BMNH).

Additional material examined. GUATEMALA: Escuintla Dept., Finca San Miguel ca 8 km SE of Escuintla, 530 m, N14.30950º W90.68219º, 7 Dec 2020, R.S. Zack collr., light traps, 1 ♂ (genitalia in microvial) (FSCA); Peten Dept., Parque Nacional El Rosario, E of Sayaxche. N 16.52414º W90.16009º, 30 June 2014, BL/MV lights, R.S. Zack coll., 2 ♂ (1 with genitalia in microvial) (UVG, WSUC); same data except 4 Dec 2021, Lt traps. R.S. Zack & J. Mansón, 1 ♂ (genitalia in microvial) (FSCA, UVG); Peten Dept., Rio Machaquila, ca 6 km W of Machaquila. 19 Oct 2017, N 16.39957º W 89.48642. 413 m, light traps, R.S. Zack collector, 1 ♀ (genitalia and ventrites in microvial) (WSUC). **MEXICO:** Vera Cruz, Nautla, mangrove swamp, 18.vi.83, R. Anderson, ex coll. D. A. Pollock, 1 ex. (DBET); Mexique, without precise locality data, 1 ♂ and 1 ♀ (MNHN).

Diagnosis. Differs from other members of Group II of *Neocyphon* in details of male genitalia. Aedeagus ca. 4× longer than wide, parameres with very sparse denticles on dorsal surface, trigonium much shorter than parameres, not hooked in lateral view (Fig. 23C). Prehensor with hooked posterior processes in lateral view, its anterior portion much wider than posterior one (Fig. 24).

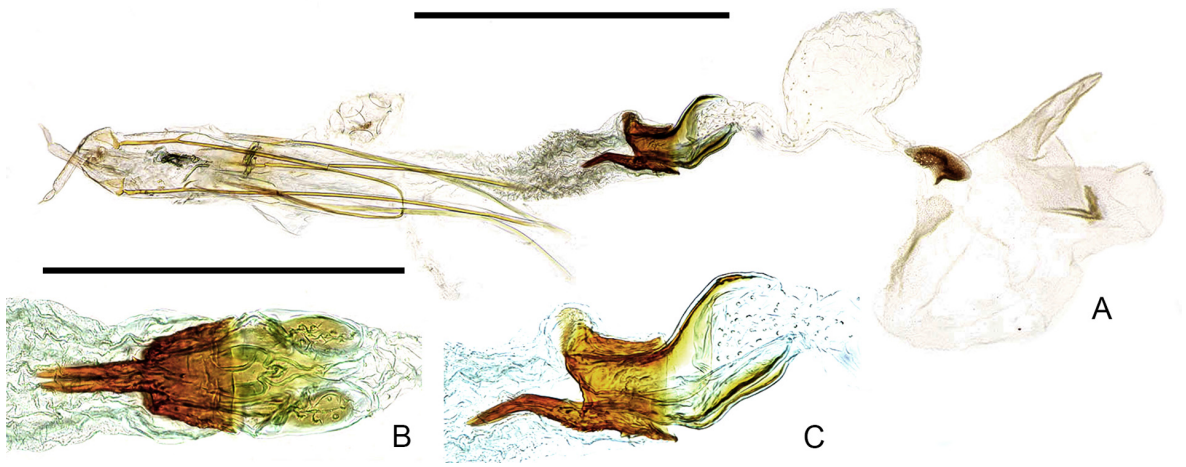

FIGURE 24. *Neocyphon guatemalensis* (Champion), female genitalia. A) genital tract; B) prehensor, dorsal view; C) prehensor, lateral view. Scale bars: 1.0 mm for A, 0.5 mm for B and C.

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1I). Body yellowish testaceous.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by ca 2× puncture diameter.

Pronotum approximately 2.4× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.48 mm, W 0.35 mm) with apical plate approximately trapezoidal, apodemes diverging basally (Fig. 23A). Sternite IX (L 0.60 mm, W 0.39 mm) consisting of paired hemisternites (Fig. 23B), each widening in suboval plate in apical portion. Aedeagus wide (L 0.87 mm, W 0.21 mm). Tegmen with narrow parameres, sides subparallel, subtle widened in apical portion, with one preapical dorsal tooth and another at about distal 1/3 of paramere, a ventral tooth at about distal 1/3 of paramere, apodemes almost straight, slightly diverging basally, short, not exceeding base of pala (Fig. 23C). Trigonium of penis narrow, rounded at apex, with minute, ventral preapical tooth visible in lateral aspect (Fig. 23C).

Female genitalia. Prehensor (L 0.45 mm, W 0.17 mm) wider in basal portion, apical (posterior) portion with two spine-like processes covered with small denticles, distinctly hooked in lateral view, and a single short, truncate ventral process covered with subtle setation (Fig. 24).

Measurements. Males (n = 3): TL 2.65–2.75 mm, PL 0.50–0.58 mm, PW 1.15–1.25 mm, EL 2.15–2.25 mm, EW 1.60–1.80 mm. Female (n = 3): TL 2.65–2.75 mm, PL 0.50–0.55 mm, PW 1.15–1.20 mm, EL 2.15–2.20 mm, EW 1.65–1.75 mm.

Distribution. Most localities are known in Guatemala, and a single one in Mexico.

Neocyphon guianensis Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1J, 25)

Type material. Holotype: ♂ (MNHN), French Guiana: Guyane Franc., Ounary, leg. P. Geay, 1900.

Diagnosis. Body moderately elongate-oval; light reddish-testaceous (Fig. 1J). Male genitalia similar to those of *N. ratzlaffi* **sp. nov.** but parameres without ventral series of preapical teeth; penis with acute apex (Fig. 25).

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1J). Body yellowish testaceous.

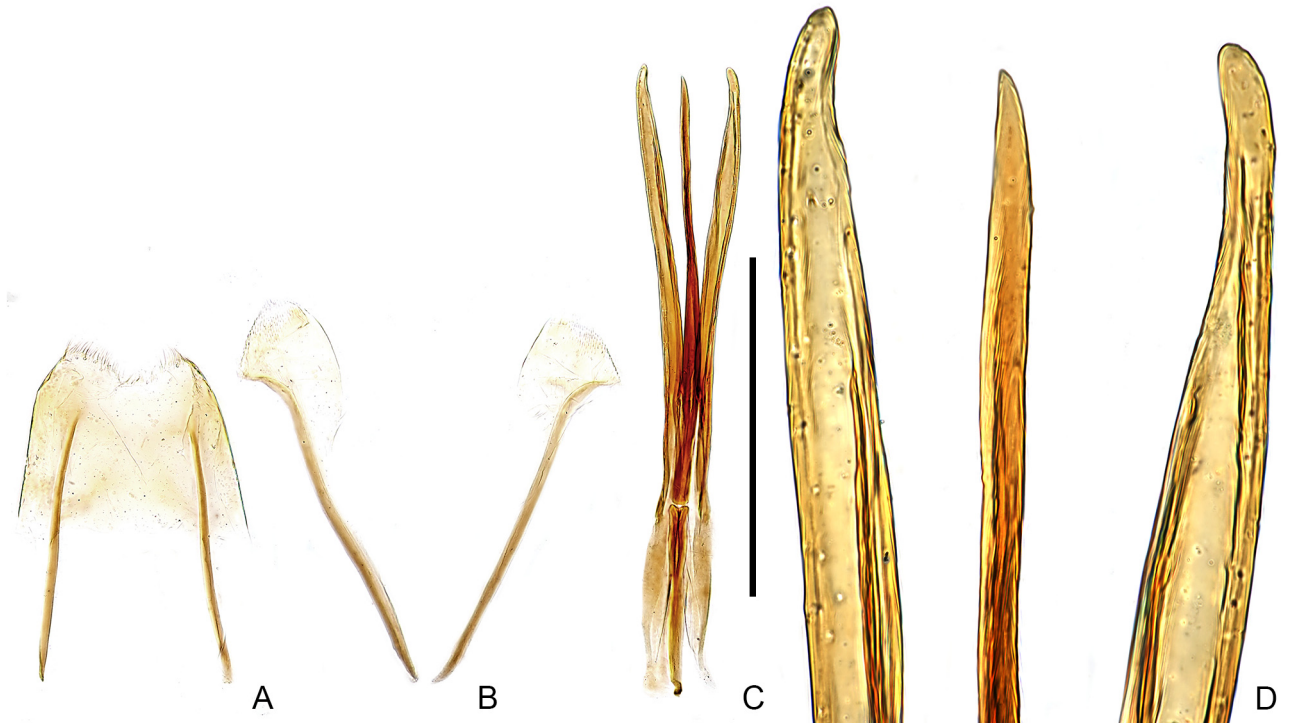

FIGURE 25. *Neocyphon guianensis* **sp. nov.**, male genitalia. A) tergite VIII; B) sternite IX; C) aedeagus; D) apex of aedeagus, close-up. Scale bar: 0.5 mm for A–C, D not scaled.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by 1–2× puncture diameter.

Pronotum approximately 2.2× as wide as long; anterolateral angles slightly projecting anteriorly; punctation on pronotum stronger than on head but rather subtle, punctures small, separated by ca. 1.0 diameter, punctation on scutellar shield similar to that on head. Elytral punctation markedly coarser than that on head, pronotum and scutellar shield, punctures separated by 1× puncture diameter.

Male terminalia and genitalia. Tergite VIII (L 0.52 mm, W 0.35 mm) with apical plate approximately trapezoidal, apodemes slightly basally (Fig. 25A). Sternite IX (L 0.60 mm, W 0.58 mm) consisting of paired hemisternites (Fig. 25B), each widening in suboval plate in apical portion. Aedeagus narrow (L 0.94 mm, W 0.16 mm). Tegmen with parameres narrow and elongate, without ventral series of preapical teeth, apodemes short, slightly diverging basally,

not exceeding base of pala (Fig. 25C). Trigonium of penis very narrow and pointed at apex, subtly hooked dorsally (Fig. 25C).

Female unknown.

Measurements. Male (n = 1): TL 2.85 mm, PL 0.60 mm, PW 1.30 mm, EL 2.35 mm, EW 1.90 mm.

Etymology. Named after Guiana, a terra typica of the species; the specific epithet is an adjective in the nominative singular.

Distribution. Known only from the type locality in French Guiana.

Neocyphon humberti (Pic, 1918) comb. nov.

(Figs 1K, 26, 27)

Cyphon humberti Pic, 1918: 21.

Type material. Holotype: ♂ **(MNHN), FRENCH GUIANA:** Passoura, November, Coll. Le Moult, with a label in Pic's hand "C. Humberti Pic".

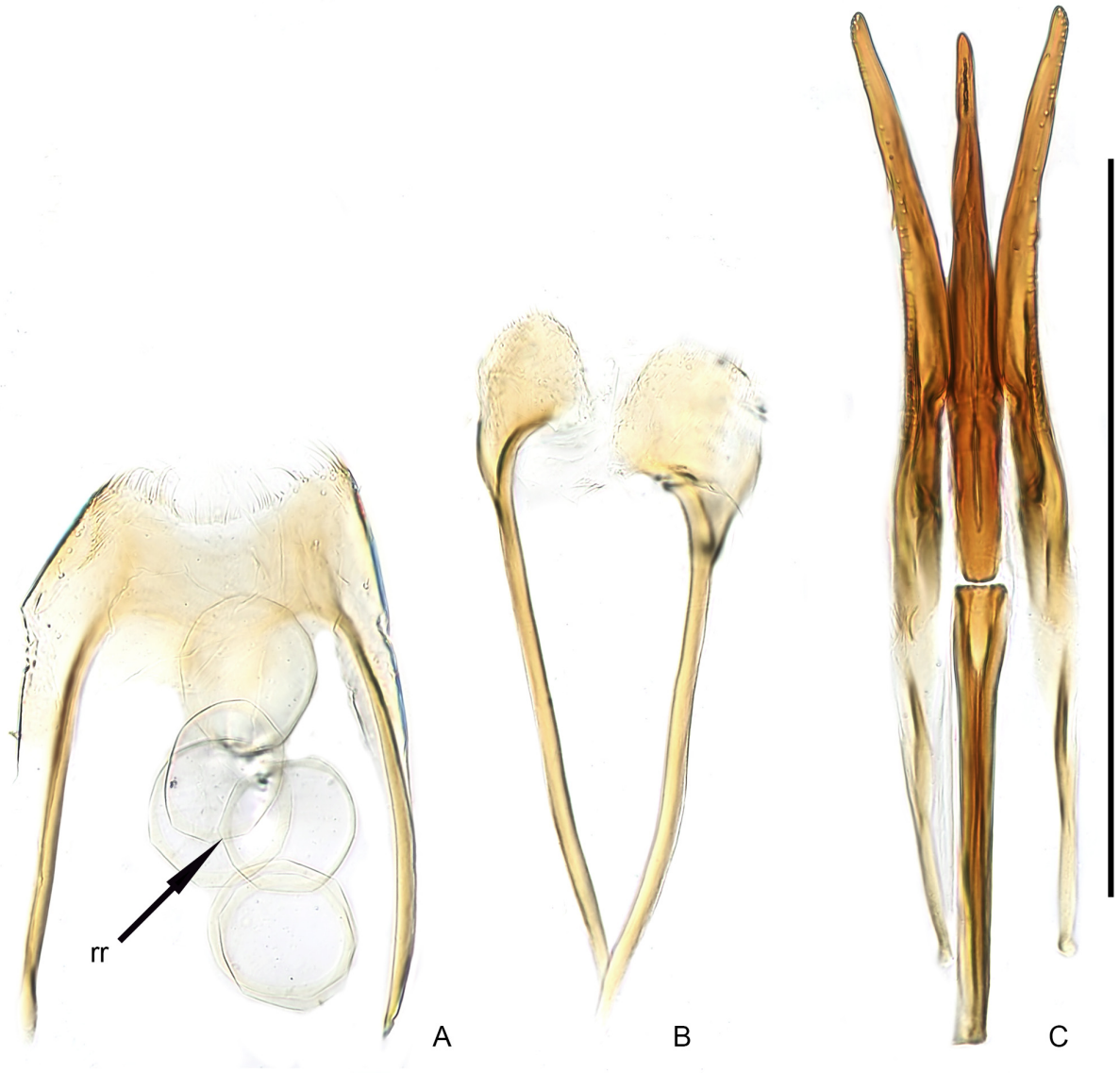

FIGURE 26. *Neocyphon humberti* (Pic), male genitalia. A) tergite VIII (rr – rectal rings); B) sternite IX; C) aedeagus. Scale bar: 0.5 mm.

Additional material examined. FRENCH GUIANA: Cayenne, 8.XII.2006, W of Le Larivot, Snížek lgt., 2 ♀, 1 ♂ (DBET); Guyane French NC, Kourou, Guatemala env., 15. XII.2006, M. Snížek lgt., 2 ♂ (DBET).

Diagnosis. Differs from other members of Group II of *Neocyphon* in details of male genitalia. Aedeagus ca. 4× longer than wide, parameres without denticles, trigonium as long as parameres (Fig. 26C). Prehensor with wide anterior and much narrower posterior portion, posterior part with paired subconical processes and a single globular process, covered with minute denticles (Fig. 27).

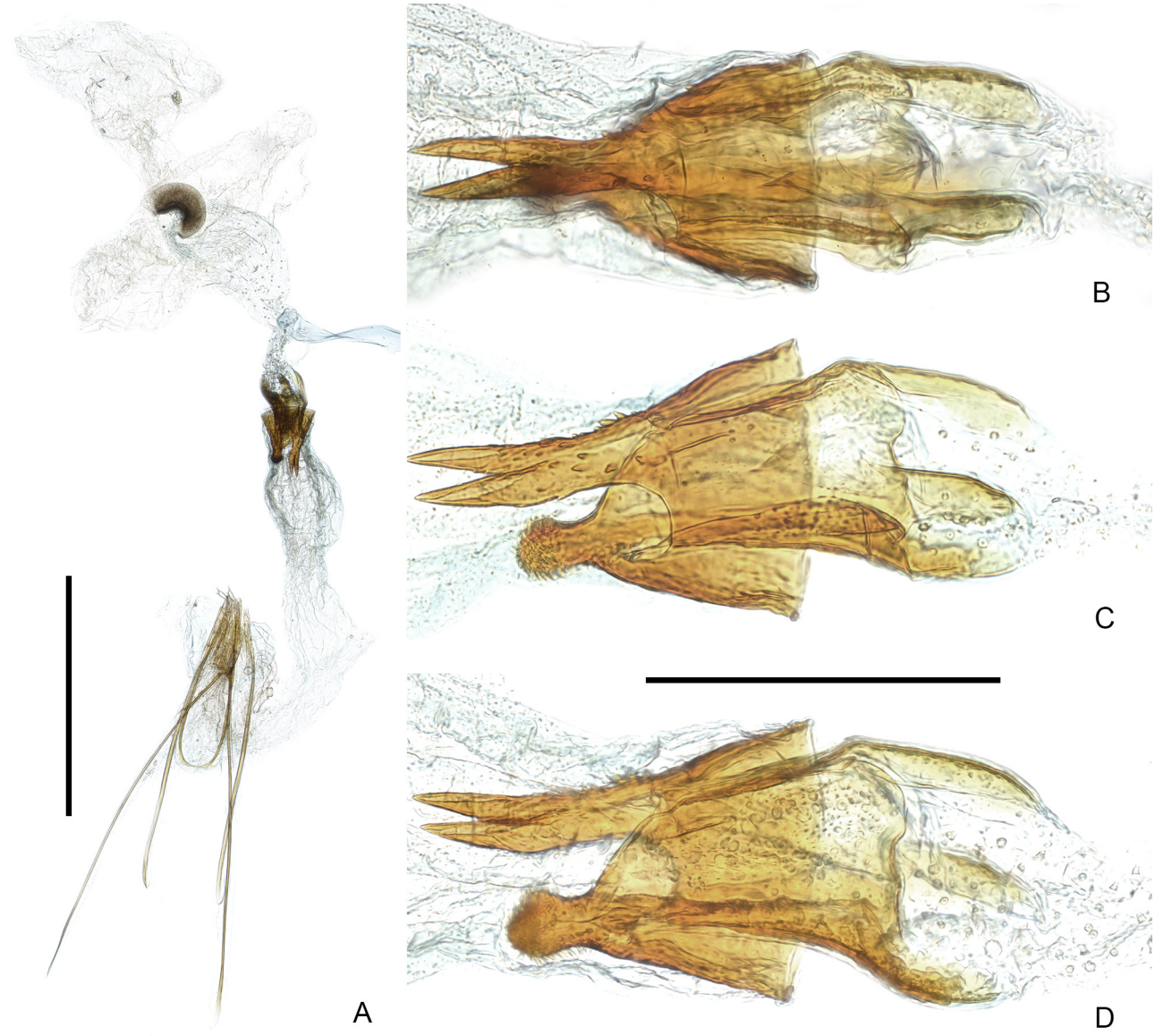

FIGURE 27. *Neocyphon humberti* (Pic), female genitalia. A) genital tract; B) prehensor in dorsal view; C) same, semilateral view; D) same, lateral view. Scale bars: 1.0 mm for A, 0.5 mm for B–D.

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1K). Body yellowish testaceous, elytral suture subtly darker.

Head wide, approximately 1.8× as wide as interocular space; punctation very fine, punctures separated by 1–2× puncture diameter.

Pronotum approximately 2.3× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter

Male terminalia and genitalia. Tergite VIII (L 0.40 mm, W 0.25 mm) with apical plate approximately trapezoidal, apodemes slightly diverging basally (Fig. 26A). Sternite IX (L 0.45 mm, W 0.19 mm) consisting of paired

hemisternites (Fig. 26B), each widening in suboval plate in apical portion. Aedeagus rather narrow (L 0.68 mm, W 0.15 mm). Tegmen with parameres narrowing to apex, subtriangular, without denticles, apodemes subparallel, short, not exceeding base of pala (Fig. 26C). Trigonium of penis not hooked, pointed at apex (Fig. 26C).

Female genitalia. Prehensor (L 0.45 mm) wider in anterior portion, posterior portion with two spine-like processes covered with small denticles and a single globular ventral process covered with sharp denticles (Fig. 27).

Measurements. Males (n = 3): TL 2.30–2.40 mm, PL 0.45–0.50 mm, PW 1.05–1.15 mm, EL 1.85–1.90 mm, EW 1.45–1.55 mm. Females (n = 2): TL 2.55–2.90 mm, PL 0.45–0.50 mm, PW 1.15–1.25 mm, EL 2.10–2.35 mm, EW 1.70–1.75 mm.

Distribution. Known from coastal region of French Guiana.

Neocyphon peruvianus Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1L, 28, 29)

Type material. Holotype: ♂ **(DBET), PERU:** Loreto, Iquitos, at light in the city, near Amazon River, 100m, 1-2 V 2004, leg. R. Westerduijn. **Paratypes: PERU:** same data as holotype except 12/13 V 2004, 1 ex. (DBET); same data except 15/16 V 2004, 2 exx. (DBET); same data except 12 IX 2004, 1 ex. (DBET).

Diagnosis. Differs from most other members of Group II of *Neocyphon* in details of male genitalia. Aedeagus as in *N. corumbanus*, but denticles on parameres smaller and irregularly scaterred, ca. 3× longer than wide (Fig. 28C), trigonium shorter than parameres, hooked dorsad (Fig. 28D). Prehensor tubular, similar as in *N. ratzlaffi* **sp. nov.** but moderately elongate (L/W = 2.2), and without dorsal denticle (Fig. 29).

FIGURE 28. *Neocyphon peruvianus* **sp. nov.**, male genitalia. A) tergite VIII; B) sternite IX; C) aedeagus, dorsal view; D) same, lateral view. Scale bar: 0.5 mm.

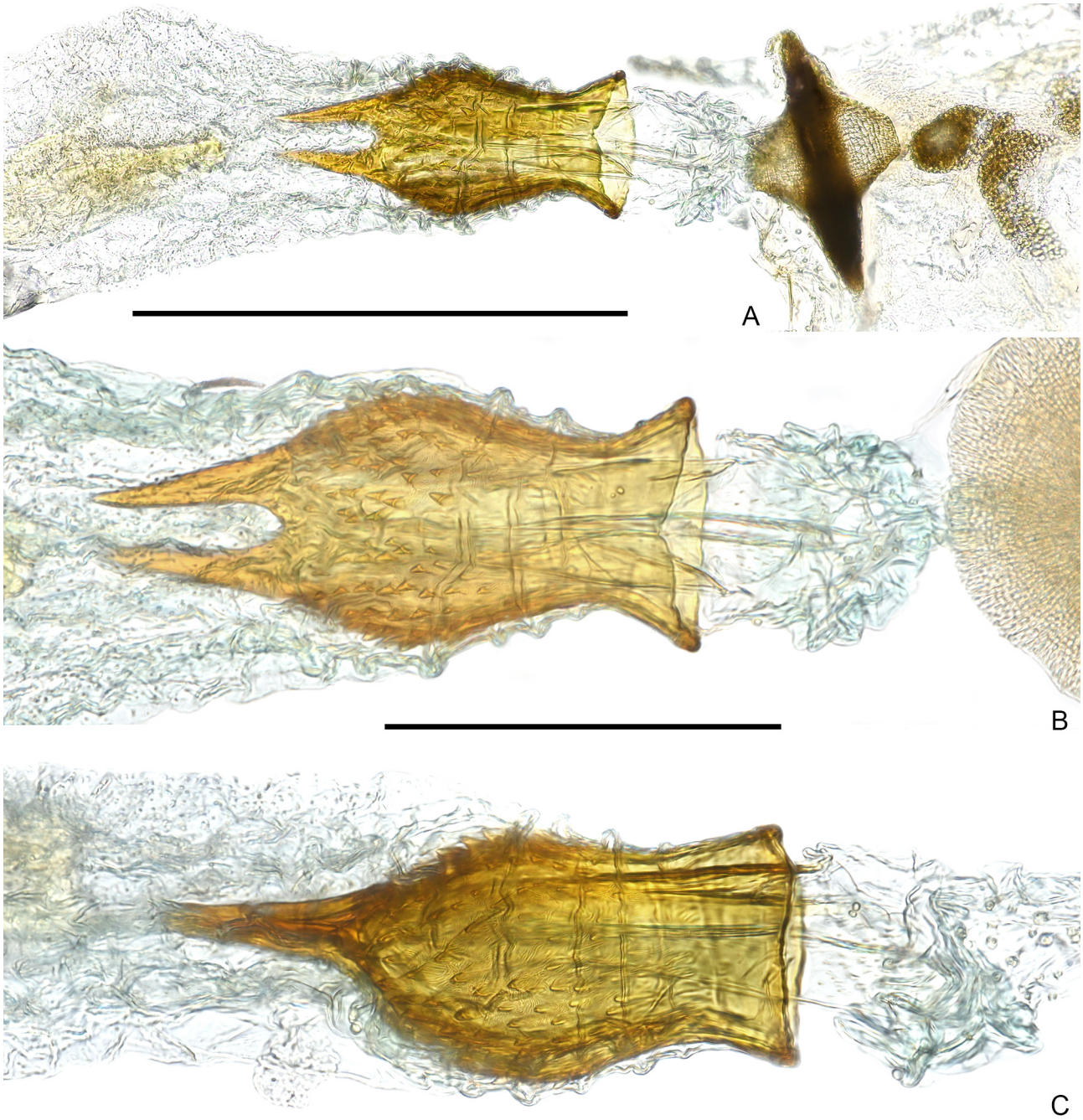

FIGURE 29. *Neocyphon peruvianus* **sp. nov.**, female genitalia. A) prehensor and brush organ; B) prehensor, dorsal view; C) prehensor, lateral view. Scale bars: 0.5 mm for A, 0.25 mm for B–C.

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1L). Body yellowish testaceous to light brown, suture subtly darker in some specimens.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by 1–2x puncture diameter.

Pronotum approximately 2.2× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter

Male terminalia and genitalia. Tergite VIII (L 0.41 mm, W 0.31 mm) with apical plate approximately trapezoidal, apodemes diverging basally (Fig. 28A). Sternite IX (L 0.54 mm, W 0.35 mm) consisting of paired

hemisternites, widening in suboval plate in apical portion (Fig. 28B). Aedeagus wide (L 0.75 mm, W 0.12 mm). Tegmen with parameres wide at base, narrowing to apex, subtriangular, covered with denticles irregularly scaterred on dorsal side, apodemes almost straight, slightly diverging basally, short, not exceeding base of pala (Fig. 28C). Trigonium of penis slightly hooked dorsally at apex (Fig. 28D).

Female genitalia. Prehensor tubular (L 0.38 mm, W 0.16 mm), with two large triangular posterior processes, without medial spine (Fig. 29).

Measurements. Male (n = 3): TL 2.45–2.55 mm, PL 0.50–0.55 mm, PW 1.10–1.25 mm, EL 1.95–2.10 mm, EW 1.60–1.65 mm. Female (n = 1): TL 2.8 mm, PL 0.55 mm, PW 1.20 mm, EL 2.25 mm, EW 1.70 mm.

Etymology. Named after Peru, terra typica of the species; the specific epithet is an adjective in the nominative singular.

Distribution. Known from a single locality in Peru.

Neocyphon ratzlaffi Ruta, Libonatti, Epler & Klausnitzer sp. nov.

(Figs 1M, 30, 31)

Cyphon sp. 3: Epler 2010: 16.7; Undescribed Genus: Gimmel & Epler 2024: 331.

Type material. Holotype: ♂ **(FSCA), USA: FLORIDA:** Miami-Dade County, North Miami, Oleta River State Park, 18 July 2007, black light, leg. Vince Golia. **Paratypes**: **USA: FLORIDA:** Collier Co., end of Big Cypress boardwalk, Fakahatchee Strand SP, 13-iv-2007, leg. DR Denson, AR Rasmussen, C-09-02, 19-3, 1 ♂ (genitalia in microvial), 1 ♀ (complete specimen on slide 19-4) (JHE); Collier Co., pond at cabin off East Main Tram, Fakahatchee Strand State Park, 26˚01′43.5″, -81˚23′51.7″, leg. D.R. Denson, A. Rasmussen, 13-iv-2007, 1 ♂ (complete specimen on slide 19-2), 1 ♀ (JHE); Highlands Co., Lake Placid, Archbold Field Station, 14-v-1993, mercury vapor light, leg. Vince Golia, 20-02, 1 ♂ (JHE); Martin Co., unnamed small pond, Jonathan Dickinson State Park, uv pan trap, leg. DR Denson, AK Rasmussen, 14-iv-2007, C-09-01, 19-5, 1 ♀ (genitalia on slide 19-5) (JHE); Miami-Dade Co., mangrove canal behind cabins, Oleta River State Park, leg. AK Rasmussen, DR Denson, uv pan trap, 13-iv-2007, 1 ♂ (genitalia in microvial), 1 ♂ (complete specimen on slide 19-1), 1 ♂ (genitalia on slide 19-10), 1 ♀ (genitalia in microvial) (JHE); Miami-Dade Co., North Miami, Oleta River State Park, 18-vii-2007, “night sweeping”, leg. Vince Golia, 1 ♂ (JHE); Orange Co., swamp area off Bear Island Road, R[eedy] C[reek] I[mprovement] D[istrict], N 28˚23′3.99″, W -81˚35′28.80″, uv pan trap, 31-viii-2009, leg. D.R. Denson, 1 ♀ (genitalia in microvial) (JHE); Palm Beach Co., Lake Worth, Harbour Greens Drive, mercury vapor light, 5-viii-2007, leg. Vince Golia, 1 ♂ (JHE). **BAHAMAS:** Andros Is., Forfar Field Sta., Stafford Creek, 6-vi-2001, M.C. Thomas, blacklight trap in a coastal coppice, 1 ♂ (FSCA); Andros Is., Forfar Field Sta. nr. Stafford Creek, 8-vi-2004, M.C. Thomas, BLT, 1 ♂ (FSCA); same data, except 9-vi-2004, 1 ♂ (FSCA); Great Inagua, 2–3 mi. N Salt Pond Hill, 14-vii-2007 blacklight trap, Thomas, Turnbow & Smith, 1 ♂, 1 ♀ (FSCA); Great Inagua, vic. Middle Pond, blacklight trap in mangrove forest, 15-vii-2007, Thomas, Turnbow & Smith, 1 ♂, 2 ♀ (FSCA); Great Inagua, Northwest Point, blacklight trap in dry leguminous forest, 11-vii-2007, colls. Thomas, Turnbow & Smith, 2 ♂ (1 ♂ with genitalia in microvial) (FSCA); Great Inagua, Salt Pond Hill, blacklight trap, 10-vii-2007, Thomas, Turnbow & Smith 1 ♂ (genitalia in microvial) (FSCA); Andros Island, Maidenhair Coppice, 2.1 mi S, 0.7 mi E Staniard Creek, ex: low interior coppice litter, 27 APR 1994, R. S. Anderson 1 ex., (SEMC); Andros Island, Church′s Blue Hole, 1.7 mi E Love hill, ex: high \ interior coppice litter, 26 APR 1994, R. S. Anderson, 1 ex. (SEMC); Riding Rock Pt., San Salvador, 7–9. JAN 1974, B. Hocking”, 1 ♀ (BMNH); same data except 10. JAN 1974, 1 ♂ (BMNH). **CAYMAN ISLANDS:** Grand Cayman, Botanic Garden, 4-vi-2008, M.C. Thomas, R.H. Turnbow, B.K. Dossier, blacklight trap, 1 ♂ (FSCA); Grand Cayman, CI Botanic Garden, bl trap, 8 June 2008, Thomas & Turnbow, 2 ♂ (FSCA); Grand Cayman, vic. Gun Bay, blacklight trap, N19˚21.074′, W81˚05.727′, 3 June 2008, M.C. Thomas, R.H. Turnbow, B.K. Dozier, 1 ♂ (FSCA); Grand Cayman, Mastic Trail, S. trailhead, 28-v-2009, N19˚19.34.089′, W81˚19.305′, Thomas, Turnbow and Ball, blacklight trap, 1 ♂, 4 ♀ (FSCA); Grand Cayman, Queen Elizabeth Botanic Park, 21-v-2009, Thomas, Turnbow & Ball, blacklight trap, 3 ♂ (FSCA); Grand Cayman, Rum Point, 3 June 2008, R. Turnbow, 1 ♂ (FSCA); Grand Cayman, West end of Georgetown, light trap, 28.iv.1938, leg. C.B. Lewis, G.H. Thompson 1 ex. (BMNH); same data except 29.iv.1938, 1 ex. (BMNH). **CUBA:** Zapata, Playa Larga, 8–29.I.1967, leg. R. Bielawski et A. Riedel, 1 ex. (MIIZ); Prov. Habana, 20 km S Güines, 22.II.1967, leg. R. Bielawski et A. Riedel, 2 exx. (MIIZ).

DOMINICAN REPUBLIC: Hato Mayor. Parque Los Haitises, 3 km W Cueva de Arena, 19-04N, 69-29W, 20 m, mesic lowland forest, 7–9 July 1992, R. Davidson, J Rawlins, S. Thompson, C. Young, 1 ex. (CMNH); Ebano Verde, 1450m, 19.0377667N, 70.5184536W, 11.5.2024, leg. J. Pirkl, J. Hodeček, 1 ♂ (MCSN-VD).

Additional material examined. USA: FLORIDA: Highlands Co., Archbold Biological Station, Lake Annie; 5 April 2005; C.L. Staines, black light, 2 ♂ (USNM) (labeled as *Contacyphon* sp. 3 Epler by JHE).

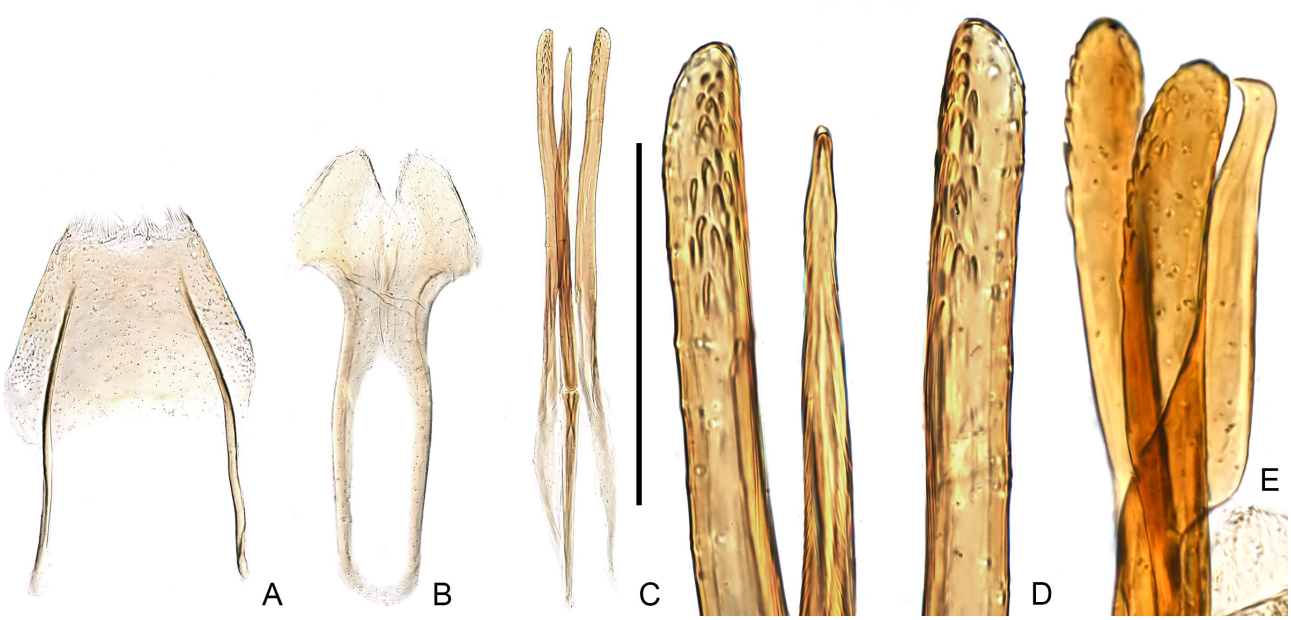

FIGURE 30. *Neocyphon ratzlaffi* **sp. nov.**, male genitalia. A) tergite VIII; B) sternite IX; C) aedeagus; D) same, close-up of apex in dorsal view; E) same, close-up of apex in lateral view. Scale bar: 0.5 mm for A–C, D–E not scaled.

Diagnosis. Body small, moderately elongate-oval, slightly more elongate than in other members of Group II; light reddish-testaceous (Fig. 1M). Male genitalia similar to *N. guatemalensis*, but parameres with distinct denticles in apical portions. Male genitalia with parameres with ventral series of preapical teeth; penis with acute apex, with ventral preapical tooth visible in lateral aspect (Fig. 30D). Prehensor tubular, elongate (L/W = ca. 4.5), with large medial spine (Fig. 31).

Description. Body oval, subtly discontinuous between pronotum and base of elytra, widest at middle, closely covered with long, suberect, golden setae (Fig. 1M). Body yellowish testaceous.

Head wide, approximately 1.7× as wide as interocular space; punctation very fine, punctures separated by 2–3× puncture diameter.

Pronotum approximately 2.4× as wide as long; anterolateral angles slightly projecting anteriorly, rounded; punctation on pronotum similar to that on head, punctation of scutellar shield more subtle. Elytral punctation markedly coarser than that on pronotum, punctures separated by 1× puncture diameter

Male terminalia and genitalia. Tergite VIII with posterior margin slightly concave (Fig. 30A). Sternite IX consisting of hemisternites, apodemes subparallel, posterior margin concave (Fig. 30B). Aedeagus elongate (L 0.78 mm, W 0.11 mm). Parameres with ventral series of preapical teeth (Figs 30C–D); penis with acute apex, with ventral preapical tooth visible in lateral aspect (Fig. 30E); this tooth varies from sharply pointed to a rounded hump.

Female genitalia. Prehensor tubular (L 0.50 mm, W 0.13 mm), with two large triangular posterior processes and large medial spine proximal to bases of triangular apices (Fig. 31).

Measurements. Males (n = 11): TL 1.95–3.20 mm, PL 0.40–0.65 mm, PW 1.08–1.50 mm, EL 1.90–2.45 mm, EW 1.50–2.10 mm. Females (n = 3): TL 2.83–3.10 mm, PL 0.58–0.60 mm, PW 1.20–1.40 mm, EL 2.25–2.50 mm, EW 1.80–2.00 mm.

Notes. The FSCA material from the Bahamas was part of the Bahamas Survey conducted by M.C. Thomas and R. Turnbow; Thomas had labeled the *Neocyphon* specimens as "*Cyphon* sp. 2", which is not the same as the "*Cyphon* sp. 2" of Epler (2010) (which is now known to be *Contacyphon setulipennis* (Klausnitzer, 1976) (Gimmel & Epler 2024)).

Etymology. Named for Dr. Willis S. Ratzlaff, one of JHE's undergraduate mentors when he was a student at Millersville State College in Millersville, Pennsylvania, USA, in the 1960s; the specific epithet is a noun in genitive singular, standing in apposition.

Distribution. Widely distributed species, ranging from Florida in the USA to the Bahamas, Cayman Is., Cuba, and Dominican Republic.

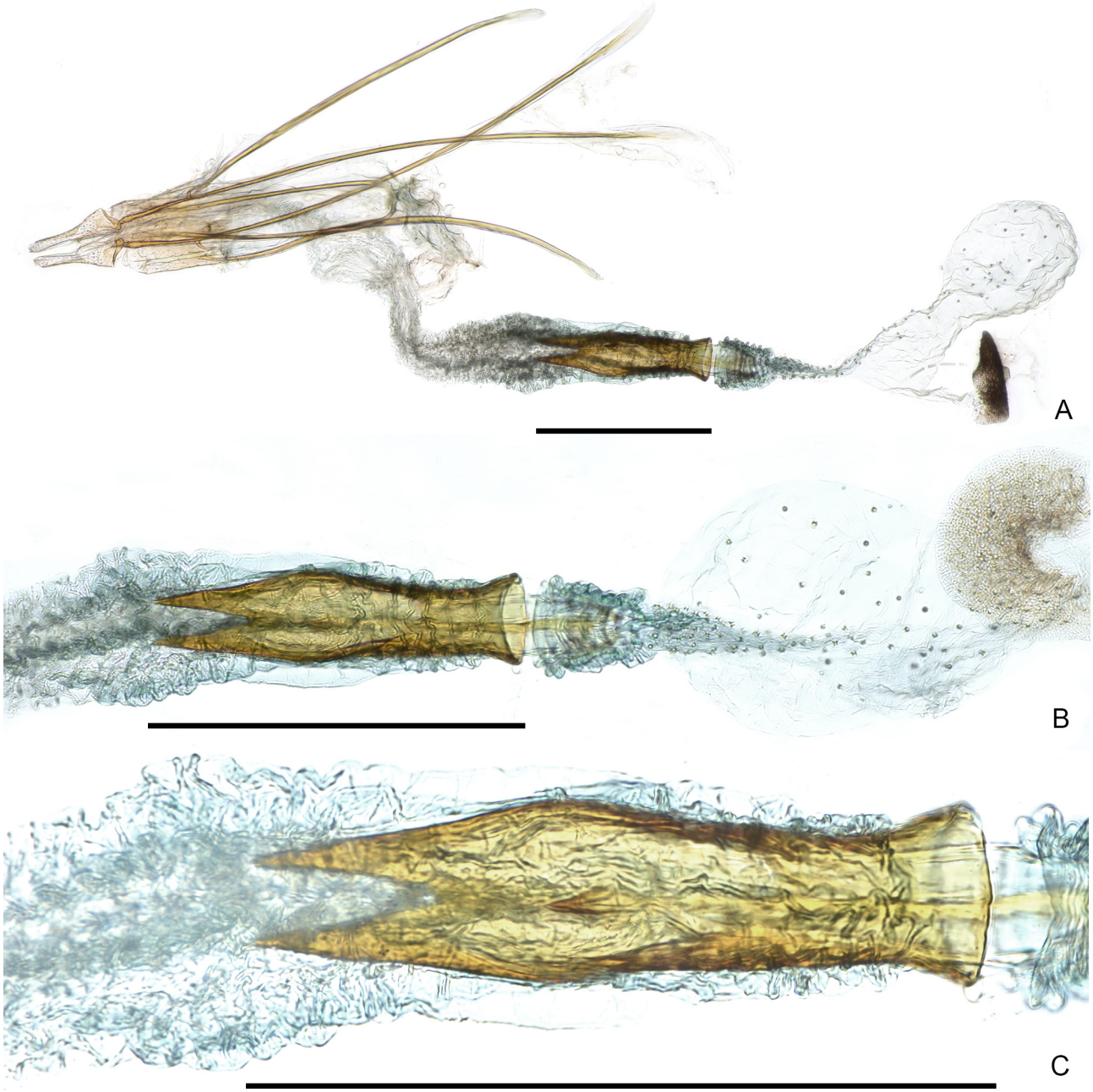

FIGURE 31. *Neocyphon ratzlaffi* **sp. nov.**, female genitalia. A) genital tract; B) prehensor and brush organ; C) prehensor. Scale bars: 0.5 mm.

Checklist of the genus *Neocyphon* Ruta, Libonatti, Epler & Klausnitzer gen. nov.

Group I

Neocyphon diiorioi **sp. nov.**	Brazil, Paraguay
Neocyphon ecuadorensis **sp. nov.**	Ecuador

Neocyphon lojaensis **sp. nov.**	Ecuador
Neocyphon mesopotamicus **sp. nov.**	Argentina, Brazil, Paraguay
Neocyphon platensis **sp. nov.**	Argentina, Uruguay
Neocyphon pseudoplatensis **sp. nov.**	Argentina
Neocyphon teresopolisensis **sp. nov.**	Brazil

Group II

Neocyphon corumbanus (Pic, 1941)	Brazil, Bolivia, Paraguay
Neocyphon guatemalensis (Champion, 1897)	Guatemala, Mexico
Neocyphon guianensis **sp. nov.**	French Guiana
Neocyphon humberti (Pic, 1918)	French Guiana
Neocyphon peruvianus **sp. nov.**	Peru
Neocyphon ratzlaffi **sp. nov.**	USA: Florida, The Bahamas, Cayman Is., Cuba, Dominican Republic

Keys to identification of *Neocyphon* species

Key to males

1.	Tergite IX rod-like (Fig. 34A)	2 (Group I)
-.	Tergite IX absent (Fig. 34B)	8 (Group II)
2.	Sternite IX V-shaped (Figs 9B, 11C, 13C)	3
-.	Sternite IX forked in middle or in apical portion (Figs 14B, 16B, 18B, 20B)	5
3.	Apodemes of aedeagus curved, trigonium shorter than parameres (Fig. 11D)	*N. ecuadorensis* **sp. nov.**
-.	Apodemes of aedeagus straight (Figs 9C, 13D)	4
4.	Pala distinctly shorter than apodemes. Parameres not narrowing in apical portion, trigonium slightly longer than parameres (Fig. 13D)	*N. lojaensis* **sp. nov.**
-.	Pala as long as apodemes. Parameres distinctly narrowing in apical portion, trigonium slightly shorter than parameres (Fig. 9C)	*N. diiorioi* **sp. nov.**
5.	Sternite IX forked in middle portion (Fig. 14B)	*N. mesopotamicus* **sp. nov.**
-.	Sternite IX forked in apical portion (Figs 16B, 18B, 20B)	6
6.	Sternite IX forked in apical 2/3 of its length (Fig. 18B)	*N. pseudoplatensis* **sp. nov.**
-.	Sternite IX forked at apex (Figs 16B, 20B)	7
7.	Apical portion of tergite VIII without hook-like sclerotizations (Fig. 16A), hemitergites IX subtly curved in apical part (Fig. 16B), parameres of aedeagus as long as its apodemes (Fig. 16C)	*N. platensis* **sp. nov.**
-.	Apical portion of tergite VIII with hook-like sclerotizations (Fig. 20A), hemitergites IX distinctly curved in apical 1/5 (Fig. 20B), parameres of aedeagus distinctly shorter than its apodemes (Fig. 20D)	*N. teresopolisensis* **sp. nov.**
8.	Aedeagus very narrow (L/W > 6) (Figs 25C, 30C)	9
-.	Aedeagus wider (L/W < 5) (Figs 21B, 23C, 26C, 28C)	10
9.	Apical portion of parameres with denticles (Figs 30C–E), sternite IX as in Fig. 30B	*N. ratzlaffi* **sp. nov.**
-.	Apical portion of parameres without denticles (Figs 25C–D), sternite IX as in Fig. 25B	*N. guianensis* **sp. nov.**
10.	Trigonium as long as parameres (Fig. 26C)	*N. humberti* (Pic)
-.	Trigonium distinctly shorter than parameres (Figs 21B, 23C, 28C)	11
11.	Trigonium not hooked, parameres without denticles or with very sparse denticles (Fig. 23C)	*N. guatemalensis* (Champion)
-.	Trigonium hooked (Fig. 28D), parameres with distinct denticles (Figs 21B, 28C)	12
12.	Denticles on parameres larger and arranged in more regular row (Fig. 21B)	*N. corumbanus* (Pic)
-.	Denticles on parameres smaller and irregularly scaterred (Fig. 28C)	*N. peruvianus* **sp. nov.**

Key to females (note that females of *N. guianensis* sp. nov., *N. lojaensis* sp. nov. and *N. teresopolisensis* sp. nov. are unknown)

1.	Prehensor as long as wide, devoid of spiny structures (Fig. 15D)	*N. mesopotamicus* **sp. nov.**
-.	Prehensor distinctly longer than its width, spines present in posterior portion	2
2.	Prehensor largely composed of two subtriangular processes covered with numerous strong spines (Figs 10B, 12B, 17C,	

19) 3
-. Prehensor tubular, with paired dorsal posterior projections (Figs 22, 24, 27, 29, 31) 6
3. Elongate posterior projections of prehensor shorter than its basal portion (Fig. 10B) . . . . . *N. diioirioi* **sp. nov.**
-. Elongate posterior projections of prehensor much longer than its basal portion (Figs 12B, 17C, 19) 4
4. Posterior projections of prehensor wide (L/W = 1.7) (Fig. 17C) . . . . . *N. platensis* **sp. nov.**
-. Posterior projections of prehensor narrow (L/W > 2.2) (Figs 12B, 19) 5
5. Posterior projections of prehensor armed with strong spines in posterior half, subparallel (Fig. 12B) . . . . . *N. ecuadorensis* **sp. nov.**
-. Posterior projections of prehensor without spines in posterior half, subconical (Fig. 19) . . . . . *N. pseudoplatensis* **sp. nov.**
6. Prehensor without ventral projections (Figs 29, 31) 7
-. Prehensor with paired dorsal and single ventral projections (Figs 22, 24, 27) 8
7. Prehensor more elongate (L/W = 4.5), with dorsal denticle (Fig. 31) . . . . . *N. ratzlaffi* **sp. nov.**
-. Prehensor less elongate (L/W = 2.2), without dorsal denticle (Fig. 29) . . . . . *N. peruvianus* **sp. nov.**
8. Posterior processes of prehensor curved in lateral view, globular process in posterior portion of prehensor absent (Fig. 24) . . . . . *N. guatemalensis* (Champion)
-. Posterior processes of prehensor straight or only subtly curved in lateral view, globular process in posterior portion of prehensor present (Figs 22, 27) 9
9. Process in posterior portion of prehensor covered with distinct spines, apex rounded (Fig. 27) . . . . . *N. humberti* (Pic)
-. Process in posterior portion of prehensor covered with subtle setation, apex truncate (Fig. 22) . . . . . *N. corumbanus* (Pic)

Discussion

The geographical range of *Neocyphon* covers the Neotropical realm and part of the Nearctic realm. The genus is distributed from Florida in the USA to northern Argentina (Fig. 32). Few species are known to have wider zoogeographical ranges: *N. ratzlaffii* **sp. nov.** occurs in the Antillean subregion and Florida (regionalization after: Morrone 2017, Morrone *et al.* 2022), *N. guatemalensis* occurs in the Mexican transition zone and the Mesoamerican dominion of the Brazilian subregion, and *N. mesopotamicus* **sp. nov.** co-occurs with *N. dioiirioi* **sp. nov.** in the Paraná Forest province. The remaining species are either known from single localities or very restricted areas comprising, for example, coastal areas of the Guianan Lowlands province (*N. humberti*), southern part of the Rondônia province (*N. corumbanum*), the Esteros del Iberá province (*N. platensis* **sp. nov.** and *N. pseudoplatensis* **sp. nov.**) or the Páramo province of the South American transition zone (*N. ecuadorensis* **sp. nov.** and *N. lojaensis* **sp. nov.**).

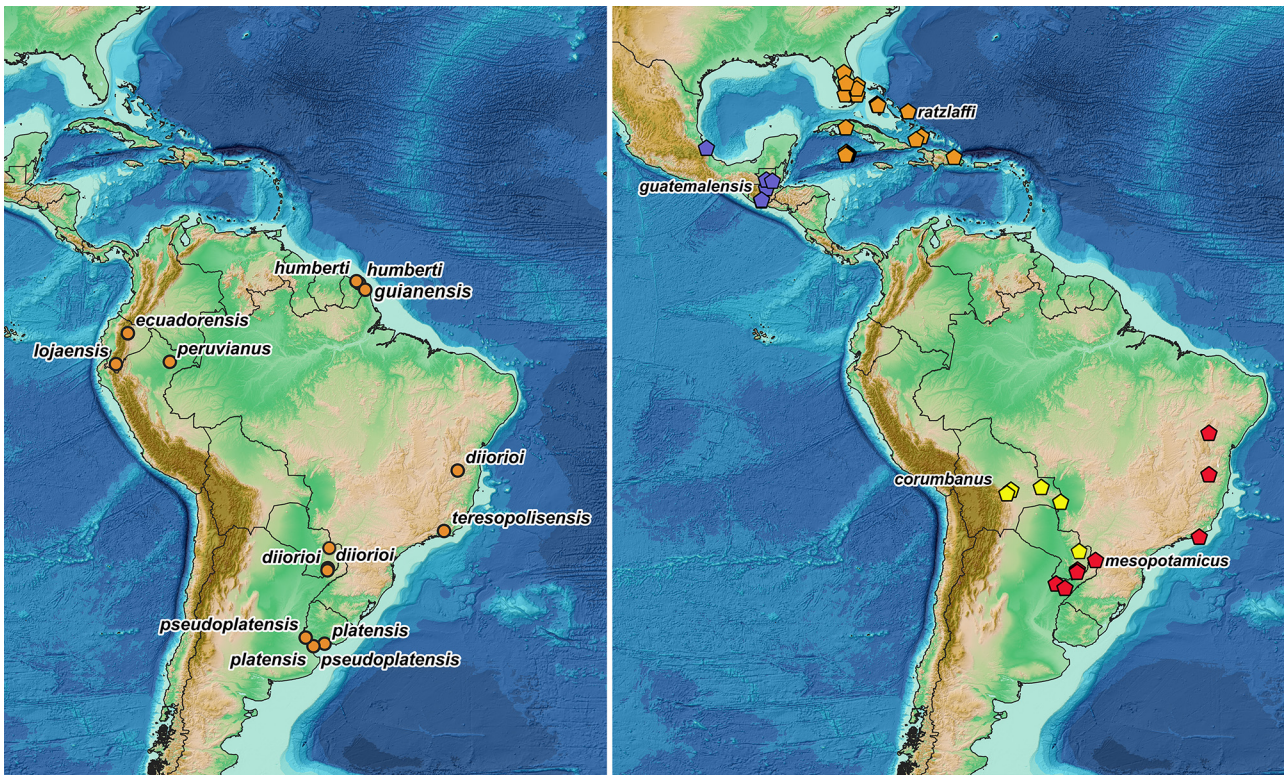

FIGURE 32. *Neocyphon* gen. nov., geographical distribution.

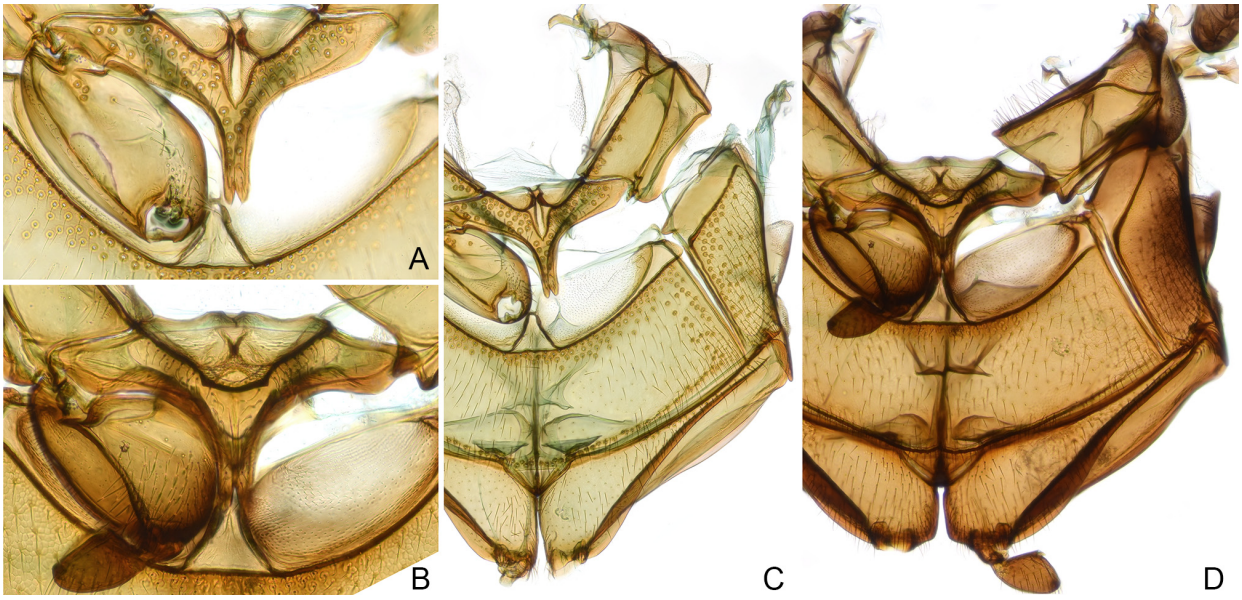

FIGURE 33. Mesoventrite (A, B) and meso- and metaventrite (C, D) of *Neocyphon ecuadorensis* **sp. nov.** (A, C), and *Contacyphon variabilis* (Thunberg, 1785) (B, D).

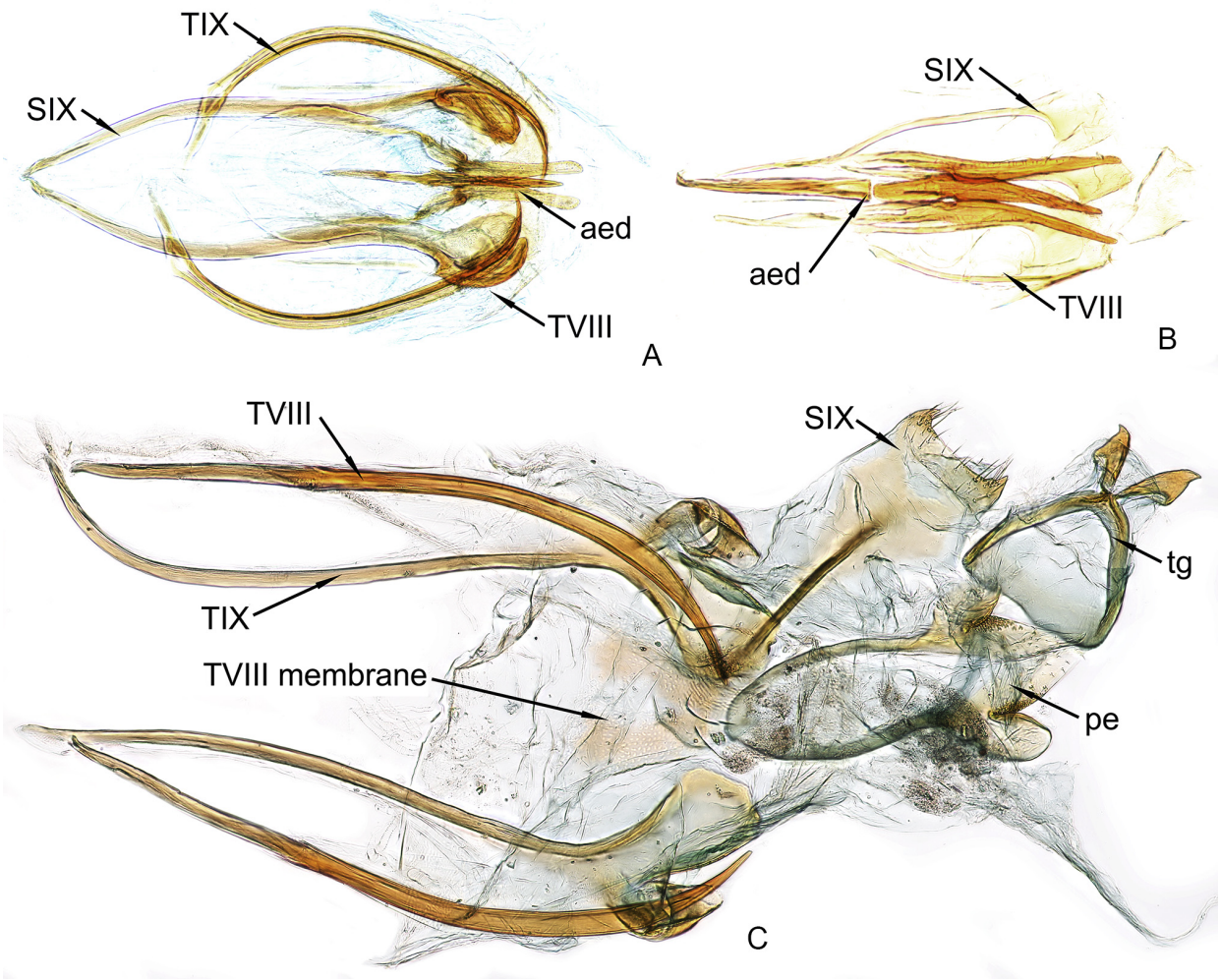

FIGURE 34. Male genitalia and terminal segments. A) *Neocyphon ecuadorensis* **sp. nov.**; B) *N. humberti* (Pic); C) *Contacyphon variabilis* (Thunberg). Abbreviations: pe – penis, SIX – sternite IX, TVIII – tergite VIII, TIX – tergite IX, tg – tegmen. Not to the same scale.

Analysis of terrestrial ecoregions (Olson *et al.* 2001) reveals that *Neocyphon* inhabits a wide range of habitats: from Everglades Flooded Grasslands, Bahamian-Antillean mangroves (*N. ratzlaffi* **sp. nov.**), Amazon-Orinoco-Southern Caribbean mangroves (*N. humberti*), Petén-Veracruz moist forests (*N. guatemalensis*), Chiquitano dry forests (*N. corumbanum*), Bahia interior forests, Alto Paraná Atlantic forests (*N. diiorioi* **sp. nov.**, *N. mesopotamicus* **sp. nov.**), Iquitos Várzea flooded forests (*N. peruvianus* **sp. nov.**) to Andean cloud forests (*N. ecuadorensis* sp. nov.and *N. lojaensis* **sp. nov.**). Elevations where *Neocyphon* was collected range from sea level (mangroves) to over 2000 m asl (Andean cloud forests). Very little is known about the microhabitats and biology of *Neocyphon*. *Neocyphon ecuadorensis* **sp. nov.** was collected in moist areas within a forest, while *Neocyphon pseudoplatensis* **sp. nov.** was obtained by beating from a tree growing very close to a water body in a forest near the coast of the Río de la Plata estuary.

Neocyphon is a genus resembling *Contacyphon* in a number of characters. The main differences include:

- the morphology of the groove for receiving the prosternal process, which is V-shaped in *Neocyphon* (Fig. 33A) while transversely rectangular and raised in *Contacyphon* (Fig. 33B);

- the metaventral carina is continuous with the metanepisternal carina (Fig. 6D, 33C); whereas the metanepisternal carina in *Contacyphon* is curved and therefore is discontinuous with the metaventral carina (Fig. 33D).

Male terminal segments and genitalia of *Neocyphon* (Figs 34A, B) exhibit a significant level of reduction. In all members of the genus, the aedeagus is symmetrical, composed of a fused tegmen and penis. Tergite VIII is unmodified in both species groups, tergite IX either consists of two paired, rod-like hemitergites (Group I, Fig. 34A) or is absent (Group II, Fig. 34B), sternite VIII is absent in both species groups, and sternite IX is Y- or V-shaped (Group I) or consisting of two hemisternites (Group II). In species Group I, rod-like hemitergites fit into longitudinal furrows in apical portions of sternite IX. Similar structures are known in the *variabilis* group of *Contacyphon* (Fig. 34C), but in this case tergite VIII consists of rod-like hemitergites that fit into furrows of the apical portions of tergite IX (Nyholm 1969).

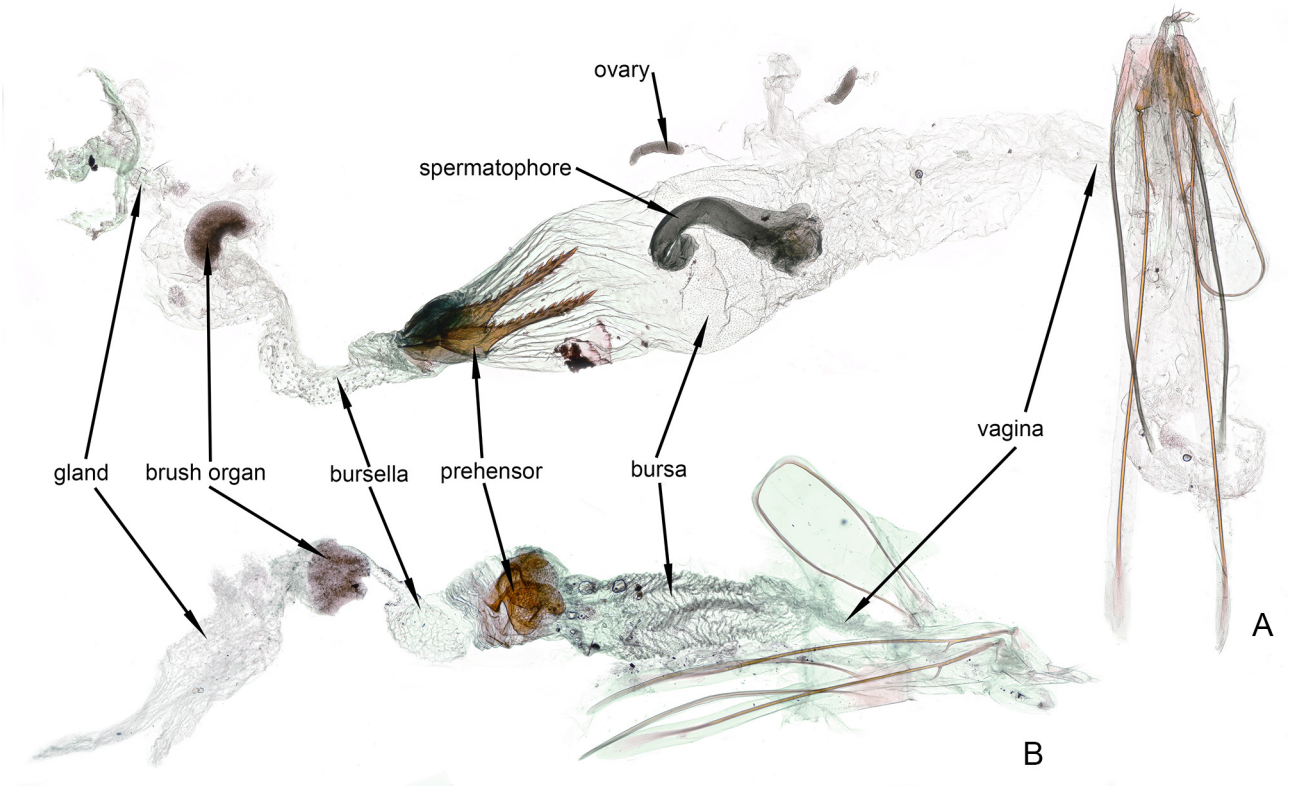

FIGURE 35. Female genital tract. A) *Neocyphon ecuadorensis* **sp. nov.**; B) *Contacyphon variabilis* (Thunberg). Not to the same scale.

The female genital tract of *Neocyphon* (Fig. 35A) clearly resembles that of *Contacyphon* (Fig. 35B) in several details. In both genera, a brush organ – a rather enigmatic structure described in detail and named by Zwick (2013) – is present. This structure was already described and illustrated by Nyholm (1969) as *pars sacculiformis* or "sackartig abgesetzter Teil der grossen Anhangsdrüse" (sack-like separated part of the large accessory gland). In *Neocyphon peruvianus* **sp. nov.**, the brush organ has a peculiar shape (Fig. 29), and a duct joining it with the prehensor is clearly visible (Figs. 29B, C). The presence of a brush organ was reported only for *Contacyphon* (Zwick 2013), therefore *Neocyphon* seems to be a close relative of *Contacyphon*, likely its sister group.

Studies on other South American species included in *Contacyphon* will continue. Some species will be transferred to *Ypsiloncyphon* Klausnitzer, 2009 and others will be described in new genera. Areas that are especially interesting and challenging are those in temperate regions of South America, largely corresponding to the Andean region, where certain Gondwanan lineages occur, and preliminary data (Ruta, Libonatti, unpublished) suggest some species are related to *Pseudomicrocara* Armstrong, 1953. According to current knowledge, it is unclear if 'true' *Contacyphon* occurs in the Neotropical realm. A large number of undescribed taxa are housed in museum collections and fieldwork in understudied areas of South America will likely increase this number even further.

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