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Research article

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Description of four new species of the Neotropical genus *Scione* Walker, 1850 (Diptera: Tabanidae)

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[4] urn:lsid:zoobank.org:author:8D23FAC4-99CE-4766-995A-6222968F5E86

Abstract. After 94 years after the last revision of the genus and after 22 years since the last species was named, we describe four new species of *Scione* from Ecuador and Peru: *S. cooperi* sp. nov., *S. gertrudeae* sp. nov., *S. kroeberi* sp. nov. and *S. merianae* sp. nov. We provide diagnoses, descriptions, photographs and discussions for each of the species.

Keywords. Horse flies, Scionini, new taxa, revision.

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Introduction

Scione Walker, 1850 was proposed as a subgenus of *Pangonia* Latreille, 1809, monotypic for *P. incompleta* Macquart, 1846. A few decades later, *Scione* was elevated to a genus by Ricardo (1900) and later designated as the type genus of the tribe Scionini by Enderlein (1922). The genus presently has 42 valid species (Coscarón & Papavero 2009) distributed exclusively in the Neotropical region, with greater species richness in the Andean region from Peru to Colombia with most species commonly found

in mountainous regions at high altitudes (Fairchild 1942, 1986). Data on the biology and ecology of *Scione* are scarce, there are only specific comments on the behavior of some species. Wilkerson (1979) and Fairchild (1986) mention that some species are commonly captured from horses and even humans. Fairchild (1986) reports that one species, *S. rufescens* (Ricardo, 1900), has a predominantly crepuscular habit and that two other species from Panama, *S. maculipennis* (Schiner, 1868) and *S. costaricana* Szilády, 1926, fly throughout the year, while *S. rufescens* appears to have a well-defined season, between the months of April and September. However, there is no work on the seasonality, abundance or distribution patterns of *Scione* and the immature stages of the species are unknown (Coscarón & Papavero 2014).

According to Mackerras (1955), *Scione* is closely related to *Fidena* Walker, 1850, and *Scaptia* Walker, 1850. More recently, Lessard *et al.* (2013) provided a phylogenetic hypothesis, based on molecular data, for the tribe Scionini and recognized the monophyly of *Scione*. In the analysis, *Scione* is recovered as a sister group to the clade formed by *Parosca* Enderlein, 1922 and *Pseudoscione* Lutz, 1918. It is worth noting that *Parosca* was previously considered a synonym of *Pseudoscione*, and the latter as a subgenus of *Scaptia*. Lessard (2014) revalidated the genus *Parosca* and reestablished the generic status for *Pseudoscione*. According to the author, *Scione* is distinguished from *Parosca* and *Pseudoscione* by conical palps and wings generally with closed r_5 and m_3 cells, with *Parosca* and *Pseudoscione* sharing shorter and wider palps and wings with open r_5 and m_3 cells.

The last revision of *Scione* was made 94 years ago (Kröber 1930), but since then, the genus has only been treated occasionally through the descriptions of new species, and more recently, in phylogenetic proposals for the Scionini tribe (Lessard *et al.* 2013; Lessard 2014).

Scione is a problematic genus, because in addition to the high number of species, several of them are morphologically very similar and the primary types of nine species are lost or destroyed (Fairchild 1942; Fairchild & Burger 1994; Tyler *et al.* 2023). Herein, we diagnose and describe four new species in *Scione*.

Material and methods

The examined material was obtained through loans or photos from the following institutions:

AMNH = American Museum of Natural History, New York, USA
CAS = Department of Entomology, California Academy of Sciences, San Francisco, USA
C-JB = Colección Jaime Buestán, Guayaquil, Ecuador
MECN = Colleción Entomológica Instituto Nacional de Biodiversidad, Quito, Ecuador
MNHUB = Nuseum für Naturkunde der Humboldt-Universität, Berlin, Germany
NHMUK = The Natural History Museum, London, UK
NMW = Naturhistorisches Museum, Wien, Austria
UNMSM = Museu de Historia Natural da Universidad Nacional Mayor de San Marcos, Peru

The terminology follows Cumming & Wood (2017). The frontal index (F.I.) and divergence index (D.I.) were measured for the frons according to Fairchild (1985). We calculated the clypeal index (C.I.) through the ratio between axes ‘a’ and ‘b’ (Fig. 1), where “a” is the measurement of the straight line drawn from the apex of the clypeus to the margin of the eye and “b” is the measurement of the straight line drawn perpendicular to “a” from the dorsal margin of the subcallus to the ventral margin of the gena (I.S. Gorayeb, pers. comm.).

The specimens were examined and digitally photographed through a Leica MC120HD camera attached to a Leica M165C stereoscopic microscope. We used Adobe Photoshop CC 2022 for photo editing and Inkscape ver. 1.3.2 to assemble the boards.

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Diptera Linnaeus, 1758
Family Tabanidae Latreille, 1802
Subfamily Pangoniinae Rondani, 1856
Tribe Scionini Enderlein, 1922
Genus *Scione* Walker, 1850

Scione cooperi sp. nov.
urn:lsid:zoobank.org:act:35288954-8BF0-484B-8E22-9A0D62118901
Figs 2–3

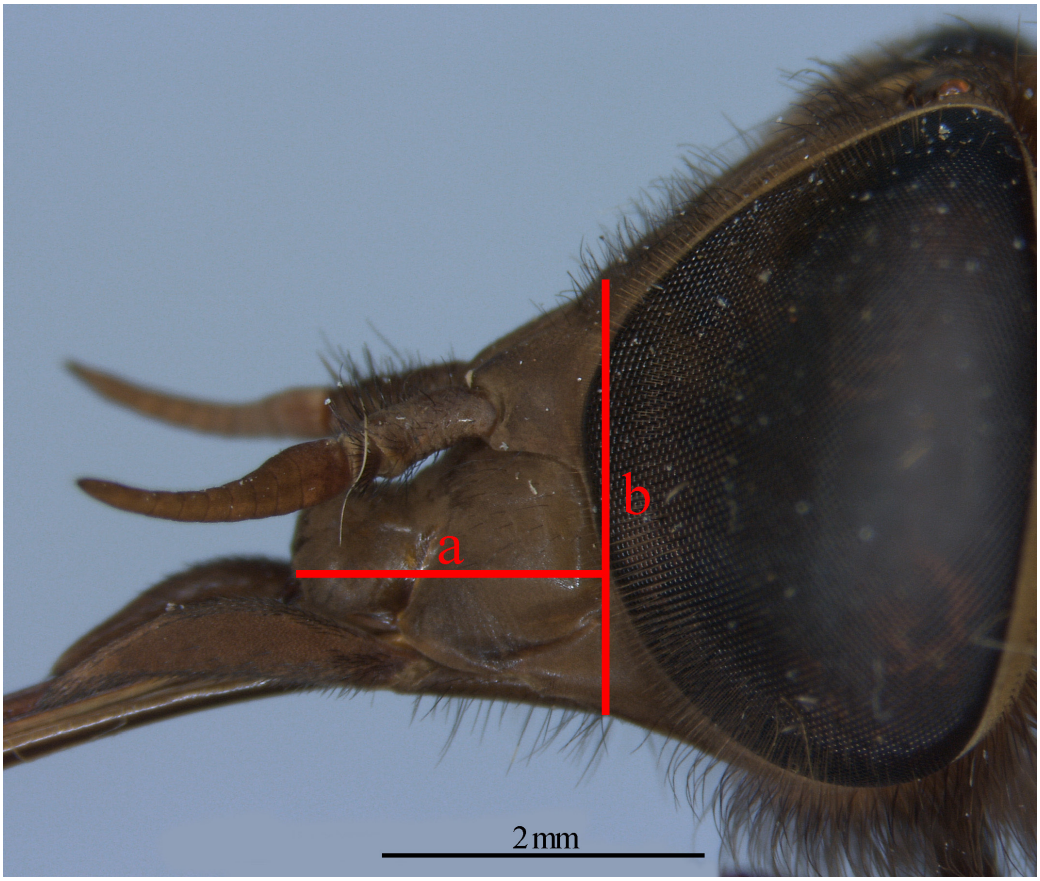

Fig. 1. Head of *Scione rufescens* (Ricardo, 1900) in lateral view indicating the calculation of the clypeal index. Where 'a' is the measurement of the straight line drawn from the apex of the clypeus to the margin of the eye and 'b' is the measurement of the straight line drawn perpendicular to 'a' from the dorsal margin of the subcallus to the ventral margin of the gena. The clypeal index (C.I.) is obtained from the ratio of a/b.

Diagnosis

Frons brown with grayish pruinosity and black setulae. Clypeus brown with black setulae. Parafacial and gena covered by yellowish pruinosity, gena with dense and long yellowish setulae. Scape and pedicel dark brown with black setulae, flagellum orange with blackish last flagellomeres. First segment of palpus black with yellowish setulae, second segment dark orange to black with short black setulae.

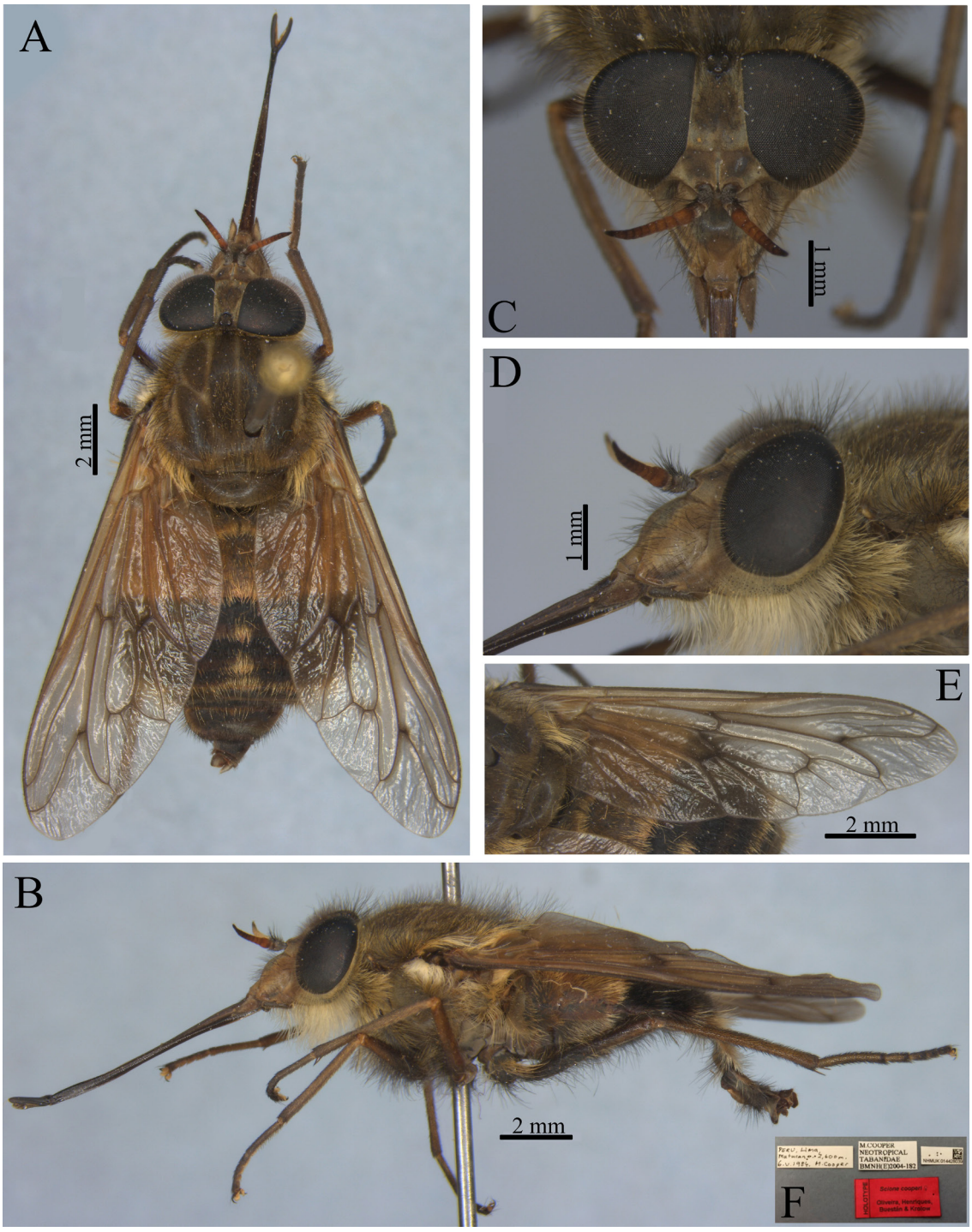

Fig. 2. *Scione cooperi* sp. nov., ♀, holotype (NHMUK). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C.** Head, frontal view. **D**. Head, side view. **E**. Wing, dorsal view. **F**. Labels.

Thorax dark brown with five inconspicuous yellowish longitudinal stripes and sparse black and gold setulae. Wing slightly smoky with brown veins and faint spots in the crossveins. Abdomen with first two tergites brown with orange sides and bands of yellowish setulae along posterior tergal margins. Other tergites black, tergites 3 and 4 with small central tuft of yellowish setulae. Tergite 5 with band of yellowish setulae.

Etymology

The specific epithet cooperi is derived from Martin Cooper, collector of specimens and great collector of insects.

Type material

Holotype

PERU • ♀ (in good condition, missing the hind right leg); Lima, Matucana; elev. 2.600 m; 6 May 1984; M. Cooper leg.; "HOLOTYPE / *Scione cooperi* Oliveira ♀ / Oliveira, Henriques, Buestán & Krolow" [red label]; "Neotropical, Tabanidae / BMNH(E)2004-182/ NHMUK 014428039" [white label]; NHMUK.

Paratypes

PERU • 1 ♂ (in good condition); same data as for holotype; "NHMUK 014428043" [white label] [photographed specimen]; NHMUK • 1 ♂ (in good condition); same data as for holotype; "NHMUK 014428044" [white label]; NHMUK.

Description

Female (Fig. 2)

Measurements. Body length: 14 mm, wing length: 12.5 mm.

Head. Frons slightly divergent below, frontal index 1.6 and divergence index 0.8. Front with dark brown spot. Vertex dark brown with rather long black setulae, ocellar triangle moderately prominent, black ocelli. Frons and subcallus brown with grayish pruinosity. Frons with black setulae. Parafacial and gena brown with yellowish pruinosity, gena with dense and long yellowish setulae. Clypeus brown with black setulae, clypeal index 0.8. Scape and pedicel dark brown with grayish pruinosity and black setulae. Flagellum orange, last flagellomeres blackish. First segment of palpus black and with long and dense yellowish setulae in anterior region and short and less dense black setulae in posterior region, second segment dark orange to black with short black setulae. Proboscis shiny black, about 5 × the height of the frons.

Thorax. Scutum and scutellum dark brown with sparse black and gold setulae, scutellum with long setulae. Scutum with five faint longitudinal light stripes, the sublateral and lateral stripes connected with clear stripes at transverse suture. Notopleuron with tufts of black setulae. Anepisternum with dense and long whitish yellow tuft of setulae. Katepisternum and anepimeron with tufts of dense and long yellowish setulae. Post-alar callus with tuft of yellowish setulae. Slightly smoky wing with brown veins and faint spots in crossveins. M_2 vein incomplete, reaching ⅔ of its actual size. The r_5 and m_3 cells cells closed and petiolate, r_5 cell petiole measuring about half length of the M_2 vein, and m_3 cell petiole reaching half length of r_5 cell petiole. Coxae black with grayish pruinosity and long black and yellowish setulae. Trochanters dark orange to brown with short black setulae. Femora black in proximal half and orange at distal end, long and dense black setulae and sparse yellowish setulae. Tibiae and tarsi orange with short black setulae.

Abdomen. Black with a tapering posterior end and dense black setulae. Tergites 1–2 orange with yellowish posterior band of integument and setulae. Other tergites black, tergites 3–4 with small central

tuft of yellowish setulae. Tergite 5 with posterior band of yellowish setulae. Sternites black with orange posterior margin and dense black and whitish setulae.

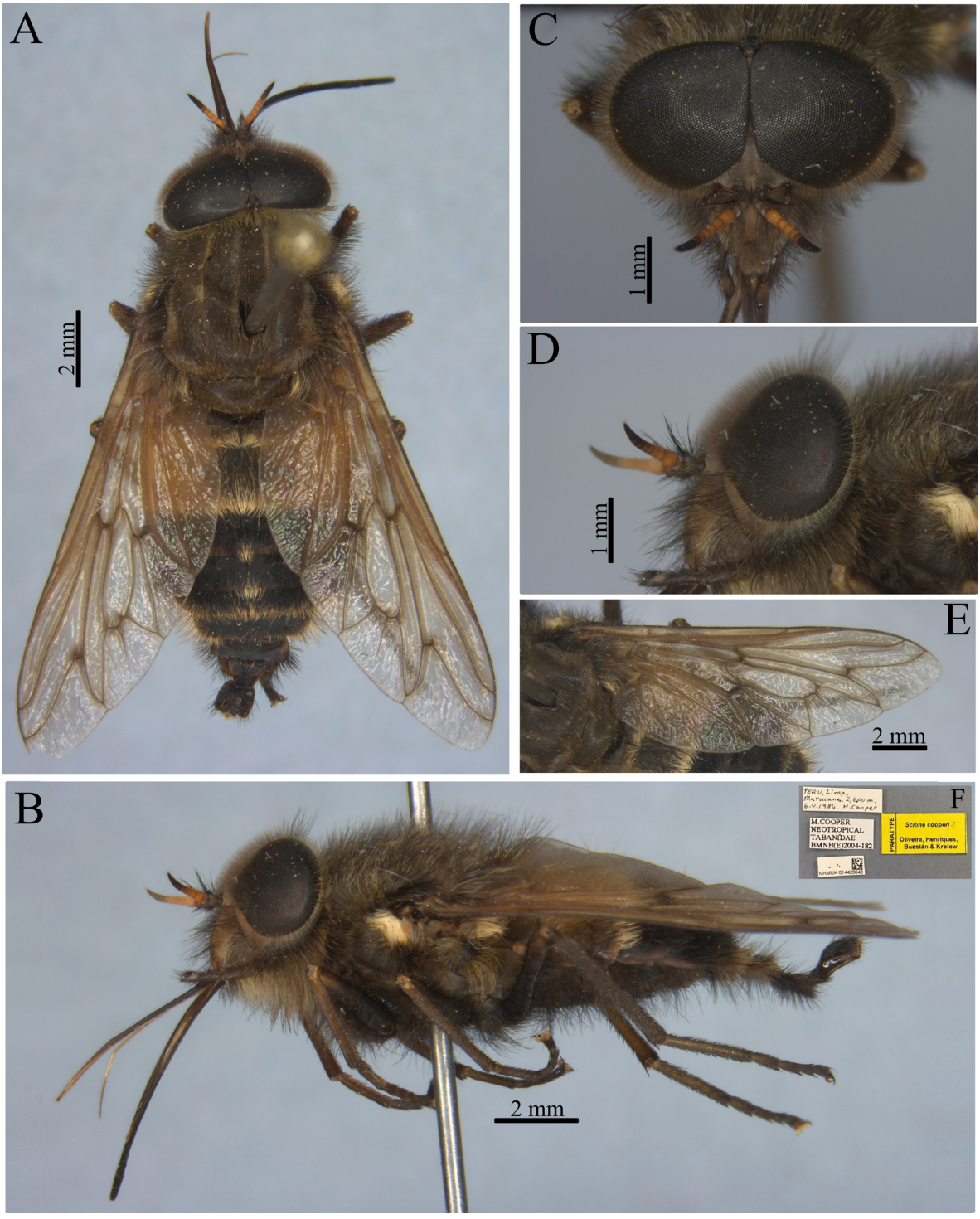

Fig. 3. *Scione cooperi* sp. nov., ♂, paratype (NHMUK). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head, frontal view. **D**. head, side view. **E**. Wing, dorsal view. **F**. Labels.

Paratype variations. Body length 14.2–14.5 mm; wing length: 11.5–12.3 mm; clypeal index 0.7. One of the paratypes has a short appendix on the fork of the R_{4+5} vein and on the discal cell of one of its wings. The r_5 and m_3 cell petiole length is also variable, with the m_3 petiole having the same size as that of r_5 in one specimen.

Male (Fig. 3)

As the female, except for the holoptic eyes, denser and longer body setulae and porrect palpus. In addition, the thoracic stripes are less evident and the body setulae are darker, especially on the gena and post-alar callus. The transverse setulose bands on tergites 1, 2 and 5 and the setulae tufts on tergites 3 and 4 are whitish in one of the specimens.

Distribution

Peru (Lima).

Remarks

The species most similar to *S. cooperi* sp. nov. are *S. brevistriga* Enderlein, 1925 and *S. huancabambae* Kröber, 1930. However, *S. brevistriga* has a predominantly yellowish abdomen and very evident thoracic stripes and *S. huancabambae*, according to the original description, has a thorax with 2 wide lateral black stripes and tergites 1, 5 and 6 have a median yellowish setulose triangle.

Scione gertrudeae sp. nov.

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Figs 4–5

Diagnosis

Frons with white pruinosity and dark brown spot. Vertex dark brown with long black setulae**.** Parafacial and gena brown with white pruinosity. Clypeus brown with whitish pruinosity. Scape and pedicel dark brown with black setulae, flagellum orange, last flagellomeres blackish. Palpus black. Thorax dark brown with five very evident longitudinal white stripes. Wing slightly smoky with brown veins and weak spots in the crossveins. Abdomen dark brown with black setulae. Tergites 1–2 yellowish brown with white posterior band of pruinosity and setulae along posterior margins. Other tergites darkened, tergites 3–5 with a small posterior median triangle of pruinosity and white setulae.

Etymology

In honor of Gertrude Ricardo, for her invaluable contributions to the knowledge of tabanids.

Type material

Holotype

ECUADOR • ♀ (in good condition); Tungurahua, above Banos; elev. 2.500 m; 14 May. 1978; M. Cooper leg.; "HOLOTYPE / *Scione gertrudeae* Oliveira, Henriques, Buestán & Krolow" [red label]; "Neotropical, Tabanidae / BMNH(E)2004-182/ NHMUK 014428020" [white label]; NHMUK.

Paratypes

ECUADOR • 1 ♀ (in good condition, hind tibia and tarsi lost, right wing with a small broken area); same data as for holotype; "NHMUK 014428024" [white label]; NHMUK • 1 ♀ (in good condition); same data as for holotype; "NHMUK 014428022" [white label]; NHMUK • 1 ♂ (in good condition, right antenna flagellum lost); same data as for holotype; "NHMUK 014428023" [white label]; NHMUK • 1 ♂ (in good condition, right antenna flagellum lost); same data as for holotype; "NHMUK 014428021"

[white label] [photographed specimen]; NHMUK • 1 ♂ (in good condition); same data as for holotype; "NHMUK 014428025" [white label]; NHMUK.

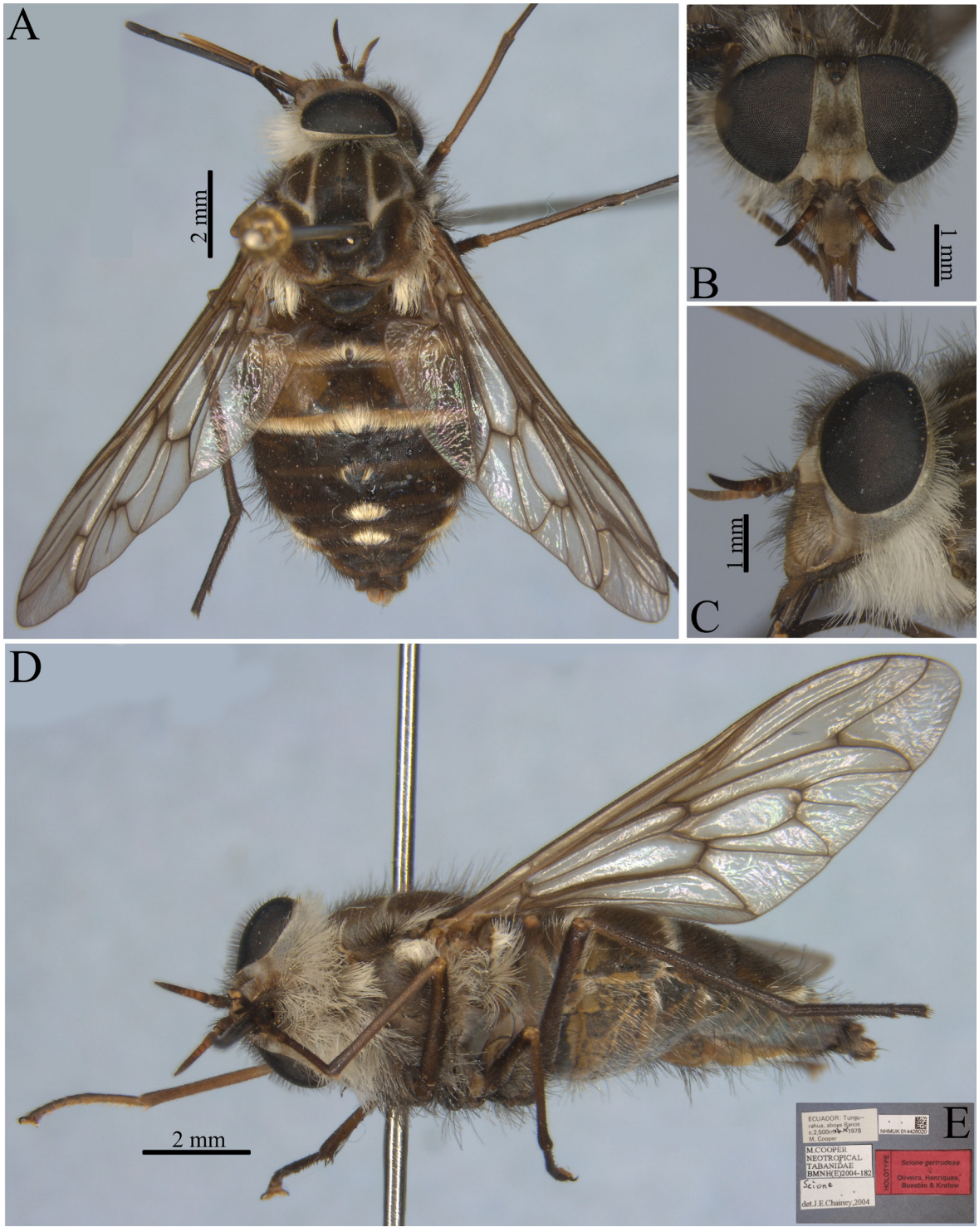

Fig. 4. *Scione gertrudeae* sp. nov., ♀, holotype (NHMUK). **A**. Habitus, dorsal view. **B**. Head, frontal view. **C**. Head, lateral view. **D**. Habitus, lateral view. **E**. Labels.

Description

Female (Fig. 4)

MEASUREMENTS. Body length: 12 mm, wing length: 11 mm.

HEAD. Frons slightly divergent below, frontal index 1.8 and divergence index 0.7. Vertex dark brown with rather long black setulae, ocellar triangle not very prominent, dark brown ocelli. Frons with black setulae and dark brown spot. Frons and subcallus with white pruinosity. Parafacialia and gena brown

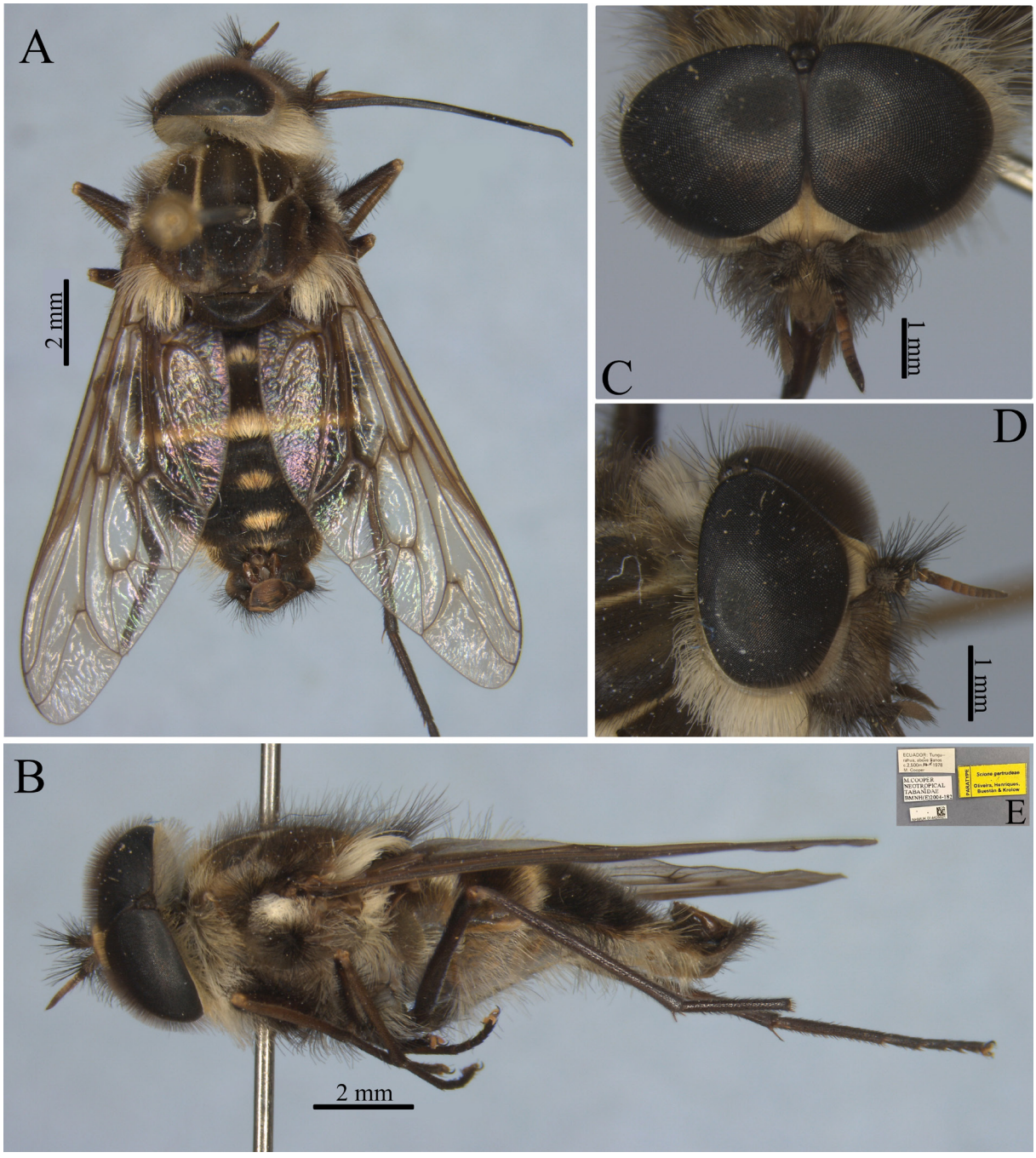

Fig. 5. *Scione gertrudeae* sp. nov., ♂, paratype (NHMUK). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head, frontal view. **D**. Head, lateral view. **E**. Labels.

with white pruinosity, gena with dense and long white setulae. Clypeus brown with whitish pruinosity and long black setulae, clypeal index 0.7. Scape and pedicel dark brown with black setulae, orange flagellum, blackish last flagellomeres. Palpus black, first segment with long and dense white setulae in the anterior region and short and black setulae in the posterior region, second segment with short black setulae. Proboscis shiny black, 4 × the height of the frons.

Thorax. Scutum and scutellum dark brown with sparse black setulae, scutellum with long setulae. Scutum with five strong longitudinal white stripes, sublateral and lateral stripes connected with strong white stripes at the transverse suture. Notopleuron with tuft of black setulae. Anepisternum with tuft of long, dense black and white setulae. Katepisternum and anepimeron with tufts of long dense white setulae. Post-alar callus with tufts of white setulae. Wing slightly smoky with brown veins and weak spots in the crossveins. M_2 vein complete. r_5 and m_3 cells closed and petiolate, m_3 cell petiole almost imperceptible and of cell r_5 only slightly larger than that of m_3. Short, barely perceptible appendage on the fork of R_{4+5} vein and on discal cell. Coxae and trochanters dark brown with white pruinosity, coxae with long dense black and white setulae, trochanters with black setulae. Femora brown with most distal portion orange and black and white setulae. Tibiae orange with short dense black setulae. Tarsi brown with black setulae.

Abdomen. Tergites 1–2 yellowish brown and with posterior band of setulae and white pruinosity. Other tergites darkened, tergites 3–5 with small median triangle of pruinosity and white setulae in the posterior region. Sternites 1–2 yellowish, others darkened. All sternites with sparse black and white setulae.

Paratype variations. Body length 10.4–12.7 mm; wing length: 10.2–11.5 mm; frontal index 1.6–1.7; divergence index 0.7–0.8 and clypeal index 0.5–0.7. M_2 vein incomplete in some specimens, reaching ⅔ or more of its actual size. The r_5 and m_3 cell petiole length also variable, little longer in some specimens. Some specimens without appendix in fork of R_{4+5} vein or in discal cell, others with one or more.

Male (Fig. 5)

As the female, except for the holoptic eyes, denser and longer body setulae and porrect palpus. Two male specimens (NHMUK 014428021 and NHMUK 014428025) have orange to brown second palp segment.

Distribution

Ecuador (Tungurahua).

Remarks

The species most similar to *S. gertrudeae* sp. nov. are *S. maculipennis* (Schiner, 1868), and *S. acris* Philip, 1958. However, *S. maculipennis* has a reddish yellow abdomen, reddish brown antennae, palpus and clypeus, and *S. acris* has a predominantly yellowish abdomen, brownish frons and subcallus.

Scione kroeberi sp. nov.

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Fig. 6

Diagnosis

Frons brown with yellowish pruinosity and many long black setules with dark brown spot extending to vertex. Subcallus brown. Clypeus brown with many black setulae. Parafacial and gena with white pruinosity and dense, long white setulae. Scape and pedicel brown with black setulae, flagellum orange with last flagellomeres slightly blackened. Thorax with four very evident longitudinal white stripes.

Wing smoky with brown veins and dark brown spots in crossveins. Abdomen brown yellowish with black setulae. First three tergites lighter and others darkened. Tergites 1–6 with small posterior median triangle of setulae and pruinosity white.

Etymology

In honor of Otto Kröber, for his invaluable contributions to the knowledge of tabanids.

Type material

Holotype

PERU • ♀ (in good condition, but the right antenna is missing the last flagellomeres); Dept. Amazonas, Olmos-Pomacocha Hwy KM 318–326, rd. above Ingenio; elev. 1.800–2.200 m; 29–31 Jan. 1964; "P.C. Hutchison and J.K. Wright / Collectors" [white label]; "HOLOTYPE / *Scione kroeberi* Oliveira, Henriques, Buestán & Krolow" [red label]; CAS.

Paratypes

PERU • 1 ♀ (in good condition, but flagella lost); same data as for holotype [white label]; CAS • 1 ♀ (poorly preserved, wings broken on anterior margin); AM, Bongará, Shipasbamba; 5°51′38.94″ S, 78°41′22.04″ W; elev. 237 m; 24 Sep. 2020; L. Ramírez leg.; UNMSM • 1 ♀ (poorly preserved, right antenna with missing flagellum, left wing with broken posterior margin); AM, Bongará, Shipasbamba; 5°51′38.94″ S, 78°4′22.04″ W; elev. 237 m; 24 Sep. 2020; L. Ramírez leg.; UNMSM.

Description

Female (Fig. 6)

Measurements. Body length: 11.5 mm, wing length: 11 mm.

Head. Frons slightly divergent below, frontal index 1.7 and divergence index 0.8. Frons with dark brown spot that extends to vertex. Vertex dark brown with long black setulae, slightly prominent ocellar triangle, yellowish brown ocelli. Frons and subcallus brown with yellowish pruinosity, frons with dense black setulae and some copper setulae. Parafacialia brown with yellowish pruinosity and black setulae. Gena with whitish pruinosity and dense and long whitish setulae. Clypeus brown with black setulae, clypeal index 0.6. Scape and pedicel brown with grayish pruinosity and black setulae. Flagellum orange, last flagellomeres slightly blackened. First segment of palpus black and with long and dense yellowish setulae in anterior region and not so long and less dense black setulae in posterior region, second segment orange black and with few short black setulae. Proboscis shiny black, about 3 × as high as frons.

Thorax. Scutum dark brown with black and brownish setulae. Scutellum black with long black setulae. Scutum with four strong longitudinal white stripes, sublateral and lateral stripes connected with strong white stripes at transverse suture. Notopleuron with tuft of black setulae. Anepisternum with tuft of black and whitish dense and long setulae. Katepisternum and anepimeron with tufts of long dense whitish setulae. Post-alar callus with tufts of white setulae. Wing smoky with brown veins and dark brown spots in crossveins. M_2 vein incomplete reaching just over ⅔ of its actual size. r_5 and m_3 cells closed and petiolate, petioles are equivalent in size, slightly less than half length of M_2 vein. Coxae and trochanters dark brown with long dense black setulae. Femora, tibiae and tarsi brown. Femora with dense and long black setulae, tibiae and tarsi with dense and short black setulae.

Abdomen. Yellowish brown with dense black setulae. Tergites 1–3 yellowish, other tergites darkened. Tergites 1–6 with small posterior median triangle of setulae and pruinosity white. Sternites yellowish brown with sparse black setulae and inconspicuous posterior band of integument and setulae white on sternites 2–5.

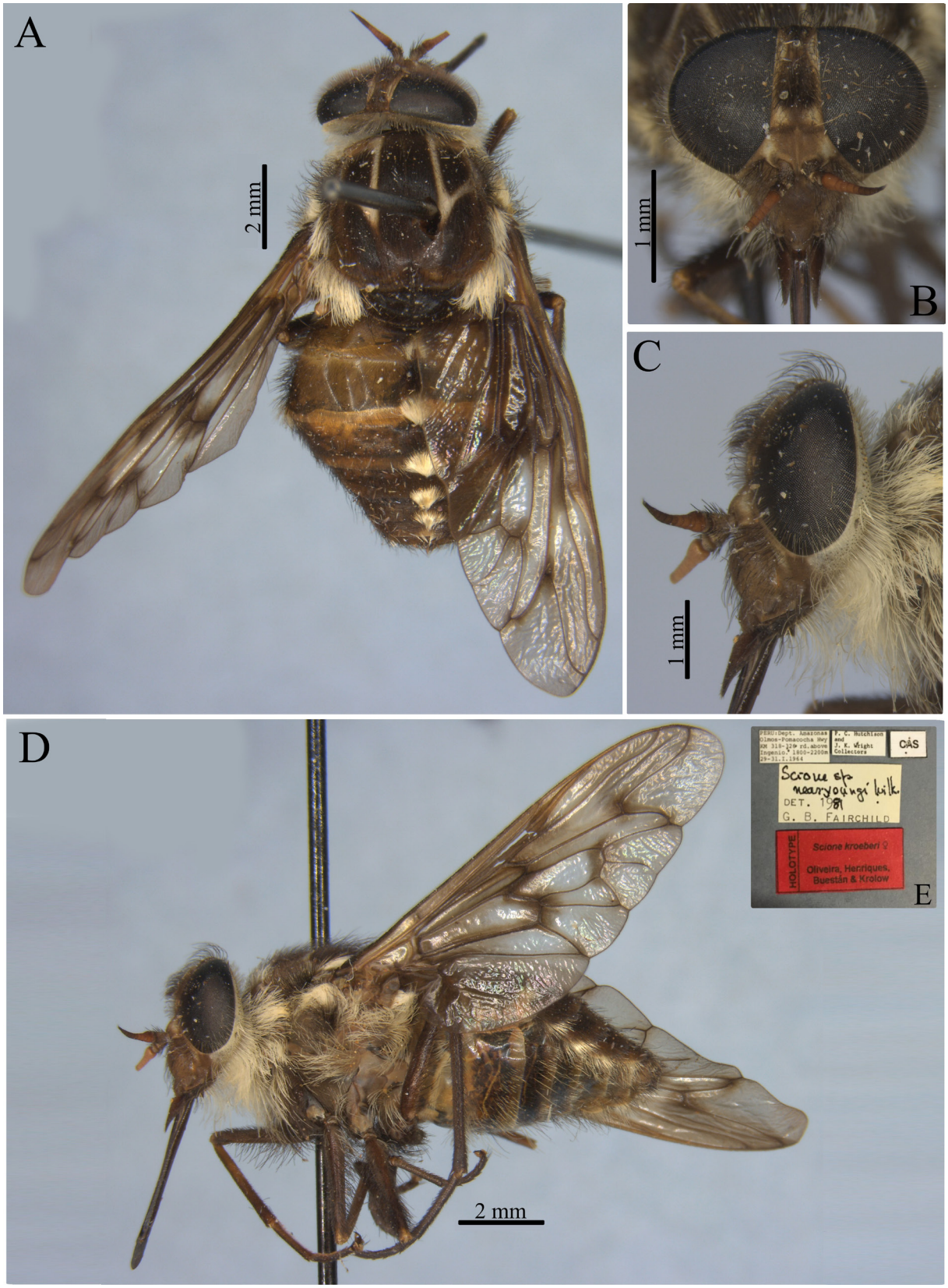

Fig. 6. *Scione kroeberi* sp. nov. ♀, holotype (CAS). **A**. Habitus, dorsal view. **B**. Head, frontal view. **C**. Head, side view. **D**. Habitus, lateral view. **E**. Labels.

Paratype variations. Body length 10.9–11.4 mm; wing length: 10.8–11.3 mm; frontal index 1.5–2.1, divergence index 0.7–0.8, clypeal index 0.7. M_2 vein complete in one of paratypes and incomplete in other, reaching ⅓ of its actual size. Two paratypes have second segment of palpus lighter and tufts of setulae on abdomen slightly yellowish. In one of paratypes, spots of intersect of veins are darker.

Distribution

Peru (Amazonas).

Remarks

The species most similar to *S. kroeberi* sp. nov. are *S. bilineata* Philip, 1969, *S. limbativena* Enderlein, 1925, *S. obscurefemorata*, Kröber, 1930 and *S. picta*, Szilády, 1926. However, *S. bilineata* has a brown scape and pedicel with whitish pruinosity and dense and long black setulae, orange flagellum, brown last flagellomere; dark brown palpus, first segment with dense and long black and yellowish setulae, second orange segment on the dorsal margin; brown thorax with dense and long orange setulae; wings with yellowish veins and brown spots in the crossveins that are not so dark and bicolored legs with dark brown femora and yellow tibiae and tarsi. *Scione limbativena* has a thorax with three inconspicuous whitish longitudinal stripes and wings with dark brown veins. *Scione obscurefemorata* has yellowish thoracic stripes extending to the posterior margin of the scutum, abdomen without median tufts of white setulae. *Scione picta*, according to the original description, has reddish antennae and palps, thorax with five dark brown stripes.

Scione merianae sp. nov.
urn:lsid:zoobank.org:act:8BD2F333-6B7B-4E04-8BF8-3CB2EA72C129
Figs 7–8

Diagnosis

Frons with white pruinosity and a dark brown spot and long black setulae. Parafacial and gena brown with white pruinosity. Clypeus brown covered with white pruinosity and long black setulae. Antenna dark brown, scape and pedicel with black setulae. Palpus concolorous with antenna. Thorax dark brown with five longitudinal white dorsal stripes. Wing slightly smoky with brown veins and dark brown spots in the crossveins. Abdomen yellowish brown with sparse black setulae. Tergites with posterior band of pruinosity and white setulae. Median triangles of pruinosity and white setulae on posterior margin of tergites 1–6.

Etymology

A tribute to Maria Sibylla Merian, a German naturalist who lived in the 17th century and dedicated herself to studying insects and plants. Her trajectory is particularly inspiring for young entomologists at the beginning of their careers.

Type material

Holotype

ECUADOR • ♀ (in good condition); Azuay, Guasipampa; 3°11.793′ S, 79°19.604′ W; elev. 2.879 m; "1–5 Jul. 2007 / Buestán // C-JB-: 8863" [white labels]; "HOLOTYPE / *Scione merianae* Oliveira, Henriques, Buestán & Krolow" [red label]; MECN.

Paratypes

ECUADOR • 1 ♂ (in good condition, but left hind leg with lost tarsus); same collection data as for holotype; "C-JB-: 8864" [white label] [specimen photographed]; MECN • 1 ♀ (in good condition, but

lost flagella and broken posterior wings margin); "C-JB- 8853" [white label]; MECN • 1 ♀ (in good condition, but flagella and right hind leg lost); "C-JB 8857" [white label]; MECN • 1♀ (in good condition, but lost flagella); "C-JB- 8856" [white label]; MECN • 1 ♀ (in good condition, but left flagellum and abdomen lost); "C-JB- 8821" [white label]; MECN • 1 ♀ (poorly preserved, right flagellum lost); "C-JB- 8854" [white label]; MECN • 1 ♀ (in good condition, but lost flagella and broken posterior wings margin); "C-JB- 8852" [white label]; MECN • 1 ♀ (in good condition, but right flagellum lost, left foreleg, right middle leg and left hind leg lost); "C-JB- 8860" [white label]; INPA • 1 ♀ (in good condition, but right flagellum lost); "C-JB- 8855" [white label]; MECN.

Description

Female (Fig. 7)

Measurements. Body length: 10.5 mm, wing length: 10 mm.

Head. Frons slightly divergent below, frontal index 1.6 and divergence index 0.7. Frons with dark brown spot extending to vertex. Vertex brown with ocellar triangle not very prominent, ocelli yellowish brown. Frons and vertex with long black setulae. Frons and subcallus with white pruinosity. Parafacial and gena brown with white pruinosity, gena with dense and long white setulae. Clypeus brown with white pruinosity and long black setulae, clypeal index 0.5. Antenna dark brown to black, scape and pedicel with black setulae. Palpus concolorous with antenna, first segment with long white setulae, second segment with black setulae. Proboscis shiny black, 3 × as high as frons.

Thorax. Scutum and scutellum dark brown with sparse black setulae. Scutum with five longitudinal white stripes, sublateral and lateral stripes quite evident and connected with white stripes on transverse suture. Notopleuron with tuft of black setulae. Anepisternum with tuft of dense and long white and black setulae. Katepisternum and anepimeron with tufts of dense and long white setulae. Post-alar callus with tufts of white setulae. Wing slightly smoky with brown veins and dark brown spots in crossveins. M_2 vein incomplete, reaching almost half of its actual size. r_5 and m_3 cells closed and petiolate, petiole same size of M_2 vein. Legs brown, coxae with white pruinosity and dense and long white setulae, trochanters and femora with dense and long black setulae, femora with some white setulae. Tibiae and tarsi with short black setulae.

Abdomen. Yellowish brown with sparse black setulae. Tergites 1–6 with posterior band of pruinosity and white setulae. Tufts of pruinosity and white setulae on central posterior margin of tergites 1–6. Margin lateral of tergites with long black setulae. Sternites with sparse black setulae and thin posterior band of pruinosity and white setulae.

Paratype variations. Body length 9.3–10.6 mm; wing length: 9.5–10.5 mm; frontal index 1.6–2.0; divergence index 0.6–0.8 and clypeal index 0.5–0.7. In three paratypes (C-JB- 8852, C-JB- 8853 and C-JB- 8857), dark brown spot in frons to form thin line touching vertex. Length M_2 vein variable, reaching ⅔ of actual size and almost touching margin of wing in one of paratypes. The r_5 and m_3 cell petiole length also variable, little longer in some specimens and almost absent in others.

Male (Fig. 8)

As the female, except for the holoptic eyes, denser and longer body setulae and porrect palpus. In addition, the male has a small appendage on the fork of the R_{4+5} vein, not seen in any of the females.

Distribution

Ecuador (Azuay).

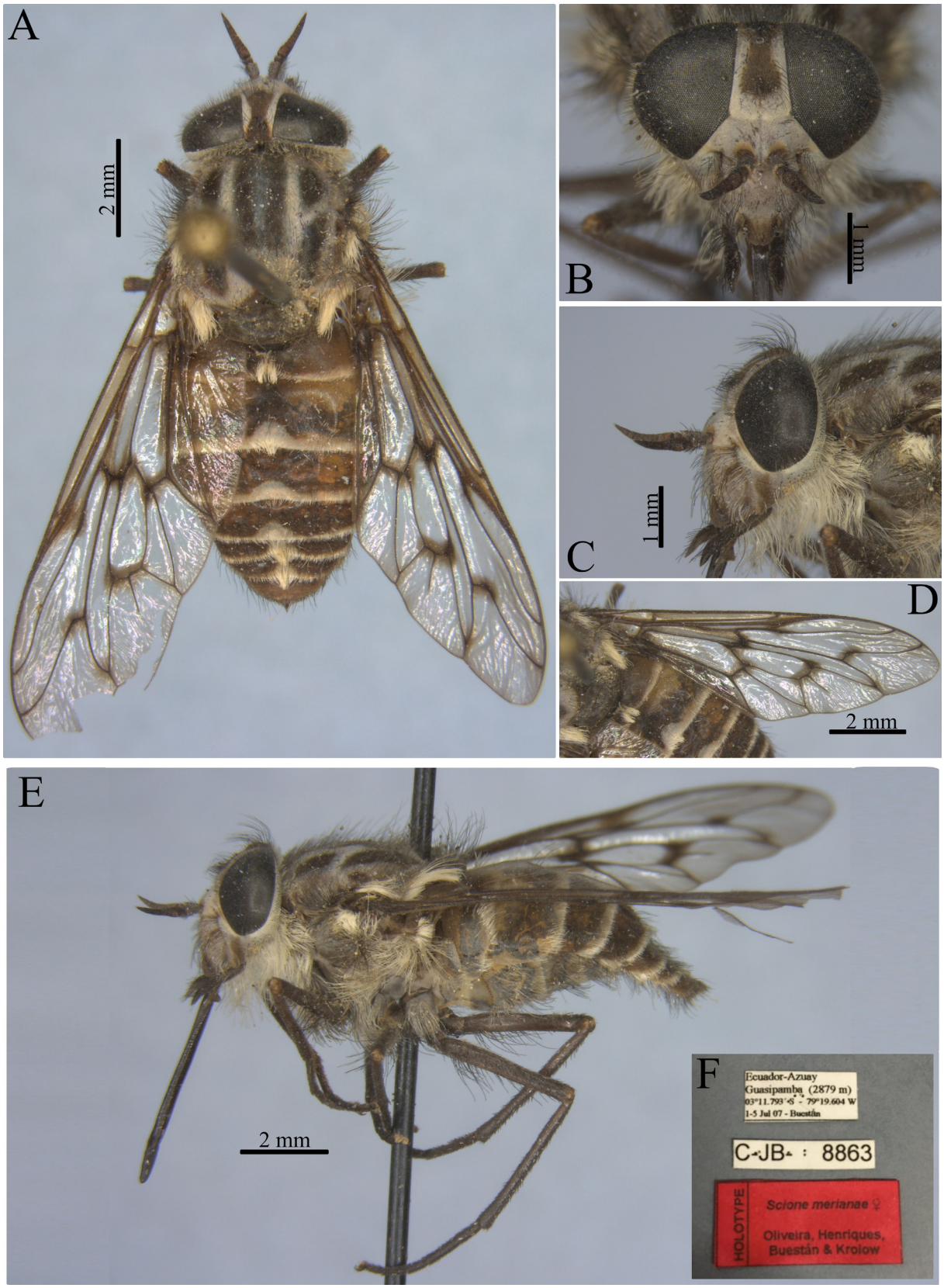

Fig. 7. *Scione merianae* sp. nov., ♀, holotype (MECN). **A**. Habitus, dorsal view. **B**. Head, frontal view. **C**. Head, side view. **D**. Wing, dorsal view. **E**. Habitus, lateral view. **F**. Labels.

Remarks

The species most similar to *S. merianae* sp. nov. are *S. limbativena* Enderlein, 1925, *S. bilineata* Philip, 1969, *S. obscurefemorata,* Kröber, 1930 and *S. picta* Szilády, 1926. However, *S. limbativena* has wings with dark brown veins and orange antennae, *S. bilineata* has a yellowish abdomen and coppery setulae on the thorax, *S. obscurefemorata* has a yellowish abdomen, antennae and palps and *S. picta,* according to the original description, has reddish antennae and palpus and smoky wings. *Scione kroeberi* sp. nov. is similar to *S. merianae*; however, *S. kroeberi* has brown frons and subcallus with yellowish pruinosity and only four longitudinal white thoracic stripes, which are thinner than in *S. merianae*.

Discussion

The last new species described for *Scione* was 22 years ago, *S. albopilosa* Burger, 2002. Since then, a lot of material has accumulated in natural history collections. Our examination of some of this material and morphological comparison with original descriptions and photographs of available types enabled the description of four species new to science in the genus *Scione*. Two of the new species (*S. cooperi* sp. nov. and *S. kroeberi* sp. nov.) were described from Peru, the country with the highest number of recorded species. The other two species (*S. gertrudeae* sp. nov. and *S. merianae* sp. nov.) were described for Ecuador, the country with the third highest number of species, after Colombia.

Unlike other families of Diptera, where genitalia characters are widely used to separate species (Sinclair *et al.* 2013) in Tabanidae, sexual characters are not very useful for distinguishing species, being more relevant for distinguishing subfamilies and tribes (Mackerras 1954, 1955). Thus, the taxonomy of the family relies heavily on external morphology characters, such as color, hairiness, shape of the palps, antennae, frons, basal callus, among other characteristics, making it common to describe new species and/or genus reviews without using genitalia characters (Turcatel *et al.* 2010; Krolow & Henriques 2010; Turcatel 2019; Pazmiño-Palomino *et al.* 2021; Henriques *et al.* 2022). In *Scione*, the genitalia of a single species, *S. flavohirta* Ricardo, 1900, are described (Coscarón 2000), and in the existing identification keys, as well as in species descriptions for the genus, no author used terminalia as a character (Szilády 1926; Kröber 1930; Wilkerson 1979; Burger 2002), but mainly differences in the spotting patterns of the wings, the thoracic bands and the hairiness of the abdomen.

Credit authorship contribution statement

Lia Pereira Oliveira: data curation, writing – original draft, conceptualization, methodology. Augusto Loureiro Henriques: supervision, writing – review. Tiago Kütter Krolow: data curation, conceptualization, methodology, supervision, writing – review. Jaime Buestán: data collector, conceptualization, writing – review, validation.

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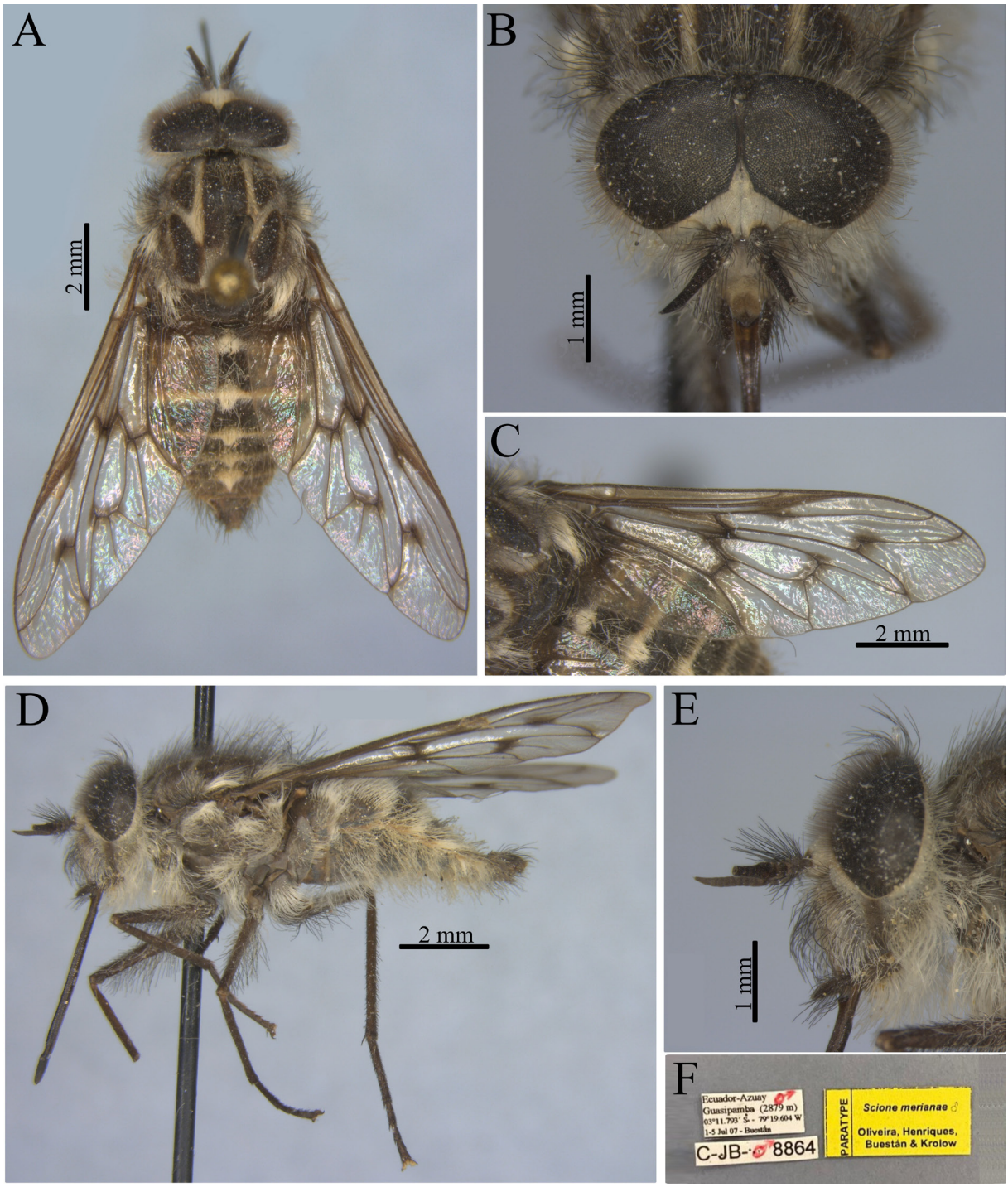

Fig. 8. *Scione merianae* sp. nov., ♂, paratype (MECN). **A**. Habitus, dorsal view. **B**. Head, frontal view. **C**. Wing, dorsal view. **D**. Habitus, lateral view. **E**. Head, side view. **F**. Labels.

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