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NEW SPECIES OF THE GENUS *ORONOQUA* FENNAH (HEMIPTERA: AUCHENORRHYNCHA: FULGOROIDEA: ISSIDAE) FROM INLAND ECUADOR

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Abstract.—Two new species in the genus *Oronoqua* Fennah, 1947 (***O. orellana* sp. n.** and ***O. feria* sp. n.**) are described from canopy fogging samples from Orellana Province of Ecuador. This is first record of the genus from Ecuador. A key to species of *Oronoqua* is provided.

Key Words: taxonomy, morphology, Fulgoromorpha, Thioniinae, Thioniini, Oronoquina, new species, Neotropics, canopy fogging

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The genus *Oronoqua* Fennah, 1947 was described for the species *O. deina* Fennah, 1947 from Guyana (Fennah 1947). Subsequently, this species was recorded from French Guiana and a second species *O. ibisca* Gnezdilov, Bonfils, Aberlenc and Basset, 2010 was described from Panama (Gnezdilov et al. 2010). The genus *Oronoqua* was recently moved to a new subtribe Oronoquina Gnezdilov, 2018 within the tribe Thioniini Melichar, 1906 (Gnezdilov 2018a), subfamily Thioniinae Melichar, 1906 *sensu* Wang et al. (2016).

Specimens of *Oronoqua* were found among the material collected during field research of Terry Erwin (Smithsonian Institution, National Museum of Natural History) by fogging terre firme forest in the Orellana Province of inland Ecuador, and is here recorded from Ecuador for the first time. These specimens had preliminarily been identified as "Nogodinidae morphospecies 9–14" (Barringer 2011). Studies of Fulgoroidea from Erwin's canopy fogging in Ecuador are in nascent stages. Previously among Issidae, the genus *Waorania* Gnezdilov and Bartlett, 2018 with two new species representing the subtribe Waoranina Gnezdilov and Bartlett, 2018 of the Thioniini was described after specimens from the same project. A species of the genus *Buca* Walker, 1858 (*B. asymmetrospinata* Gnezdilov, Bartlett and Bourgoin, 2016) from the family Tropiduchidae (Elicinae: Bucini) has also been described from these samples.

Here two new species of *Oronoqua* are described from canopy fogging samples leading to recognize now 5 genera with 10 species for the Ecuadorian fauna of the family Issidae.

Material and Methods

The terminology of external morphological characters primarily follows Anufriev and Emeljanov (1988), Gnezdilov (2003, 2016) and Gnezdilov et al. (2014), except for the female genitalia that follow Bourgoin (1993) and Gnezdilov (2002). Fore wing venation according to Bourgoin et al. (2015) with following modifications for vein abbreviations used for Issidae by Gnezdilov (2003) and Gnezdilov et al. (2014): $R_{[ordinal\ number\ of\ vein\ from\ anterior\ wing\ margin]}$, M [number of veins], CuA, CuP, Pcu, A where «R» corresponds with «ScP+R(+MA) and RA, RP» and «M» corresponds with «MP» of Bourgoin et al. (2015). This system of wing venation is used to coordinate the venation naming with that of Gnezdilov (2009, 2018a, 2018b, 2019), Gnezdilov et al. (2010), Gnezdilov & Bartlett (2018), Gnezdilov and O'Brien (2008) etc.

The specimens examined are deposited in the following collections:

USNM – Smithsonian Institution, National Museum of Natural History, Washington, D.C., USA;

UDCC – University of Delaware, Department of Entomology and Wildlife Ecology, Newark, Delaware, USA;

ZIN – Zoological Institute, Russian Academy of Sciences, Saint Petersburg, Russian Federation.

Label information for holotypes are quoted, with '/' indicating new line and '//' indicating next label. Label information for paratypes is summarized.

Taxonomy

Family Issidae Spinola, 1839

Subfamily Thioniinae Melichar, 1906

Tribe Thioniini Melichar, 1906

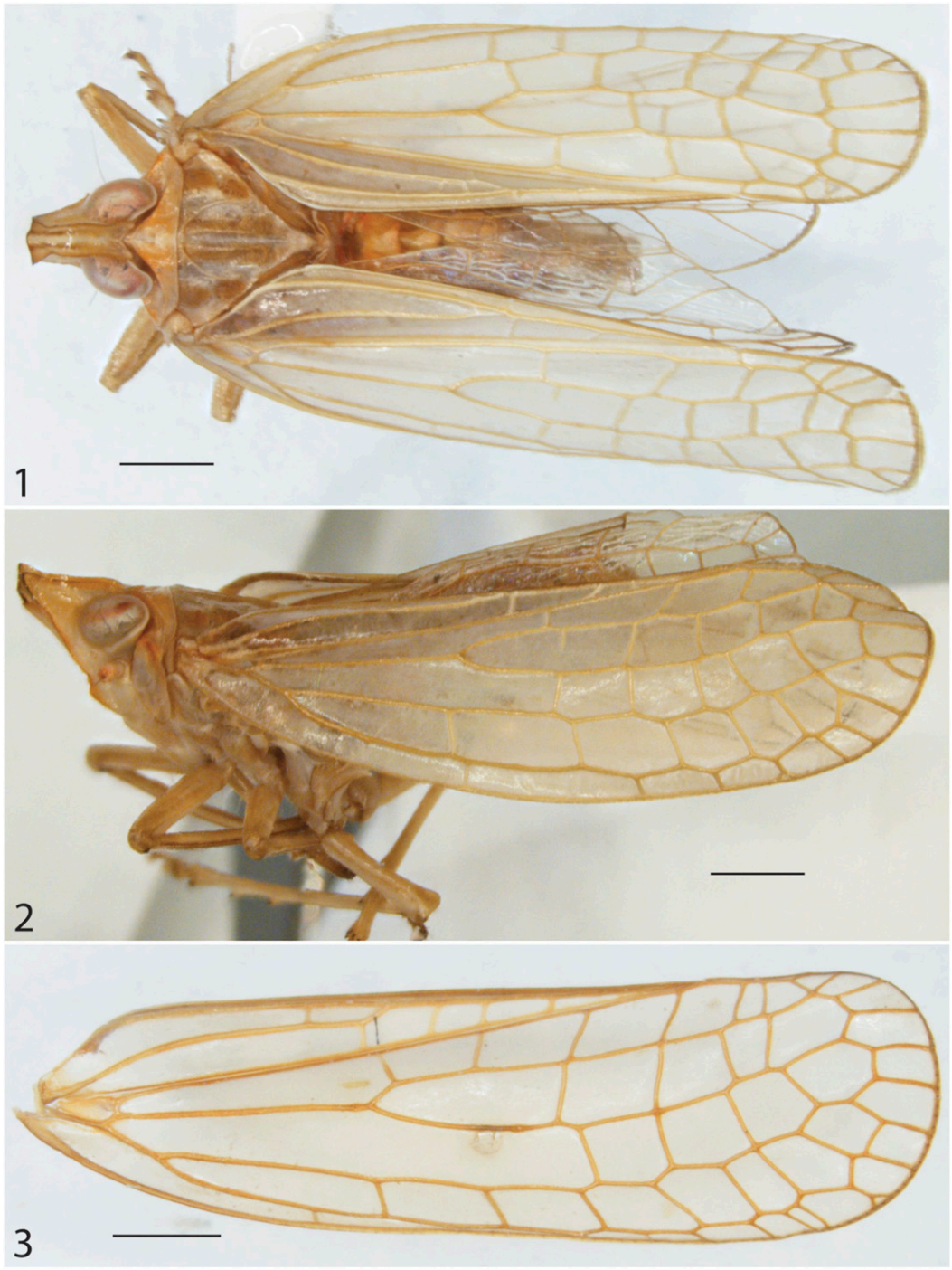
Subtribe Oronoquina Gnezdilov, 2018

Genus *Oronoqua* Fennah, 1947

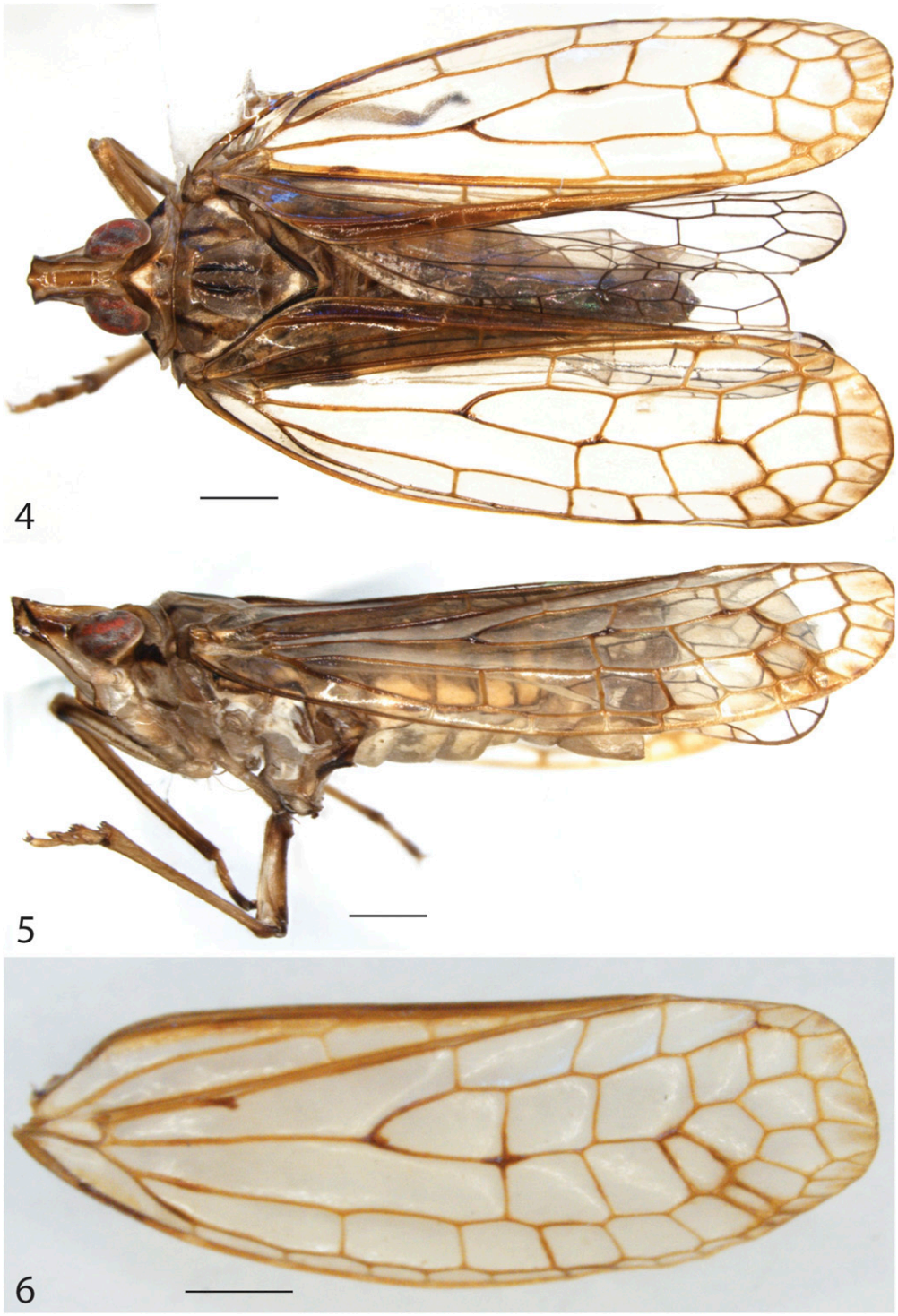
Type species: *Oronoqua deina* Fennah, 1947 by monotypy.

Key to the Species of *Oronoqua* Fennah

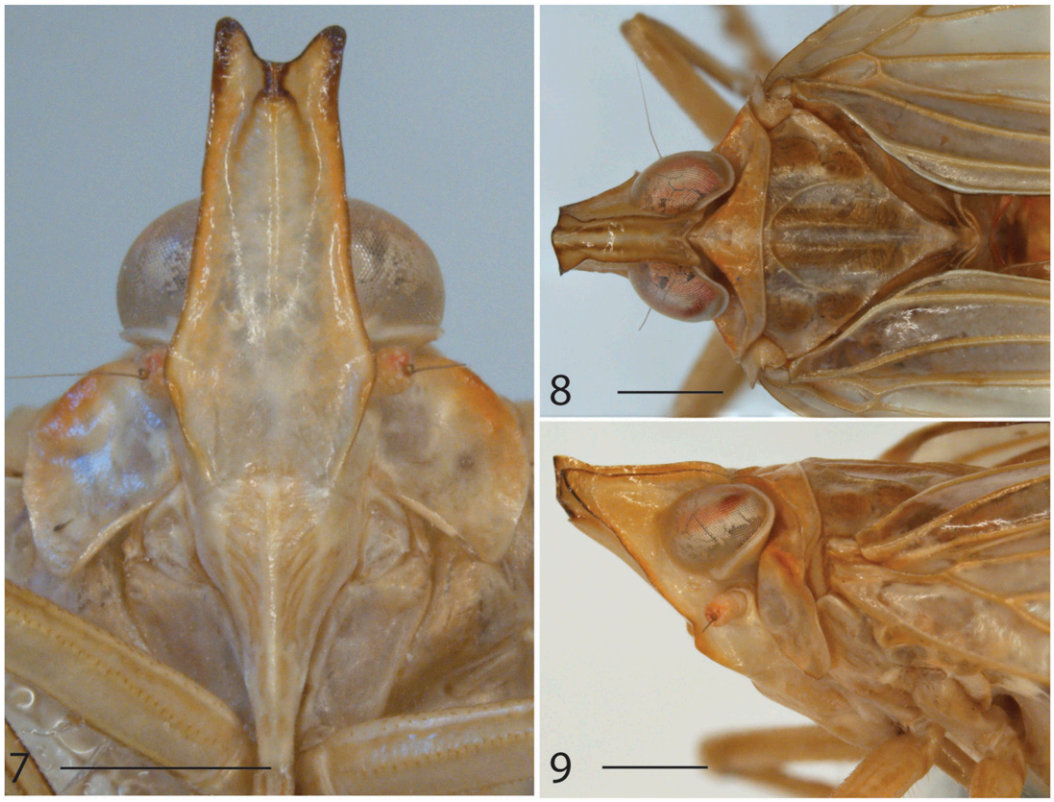
1. Fore wings with reticulate cross venation through whole length (Gnezdilov et al. 2010, fig. 3B); rostrum with 3rd segment longer than 2nd one, narrowing apically (Fig. 20). Panama ..... *O. ibisca* Gnezdilov, Bonfils, Aberlenc and Basset, 2010
– Fore wings with cross venation developed only in its apical half (Figs. 3, 6); rostrum with 3rd and 2nd segments equal in length, not narrowing apically (Fig. 21) 2
2. Ventral aedeagal hooks slightly S-curved in its basal half, without lateral processes and teeth, tapered to apex (Gnezdilov et al. 2010, fig. 5A). Guyana, French Guiana .... *O. deina* Fennah, 1947
– Ventral aedeagal hooks not sinuate, each hook either with short lateral process near its middle, serrated distally on outside margin beyond lateral process (Figs. 26, 27), or expanded into apical asymmetrically bifid cup-like structure (Figs. 33–35), Ecuador 3
3. Generally face and fore wings with dark brown to black stripes and spots (Figs. 6, 10). Ventro-lateral margins of male anal tube (in lateral view) with two subequal concavities (Fig. 30); apex of ventral aedeagal hook expanded into broad, spoon-like structure bearing an apical and subapical projections (Fig. 33); lateral serrations absent .... *O. feria* sp. n.
– Generally pale (face and fore wings missing dark stripes and spots) (Figs. 3, 7). Ventro-lateral margins of male anal tube (in lateral view) once concave subapically (Fig. 24). Ventral aedeagal hooks with short lateral process near its middle and with serrated outside margin below lateral process (Figs. 26, 27) ..... . *O. orellana* sp. n.



Figs. 1–3. *Oronoqua orellana* sp. n., habitus and fore wing (male, paratype). 1, Dorsal view. 2, Lateral view. 3, Fore wing.



Figs. 4–6. *Oronoqua feria* sp. n., habitus and fore wing (male, paratype). 4, Dorsal view. 5, Lateral view. 6, Fore wing.



Figs. 7–9. *Oronoqua orellana* sp. n., head and thorax (male, paratype). 7, Frontal view. 8, Head and thorax, dorsal view. 9, Head and thorax, lateral view.

Oronoqua orellana sp. n.

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(Figs. 1–3, 7–9, 13–16, 23–29, 38–39)

Diagnosis.—A pale species. Forewing reticulation mostly restricted to distal half. Aedeagal hooks elongate, each with lateral projection near midlength followed by lateral serrations. Ventrolateral surface of anal tube (in lateral view) bearing a distal short concavity; in dorsal view, caudal margin concave.

Description.—*Coloration:* Generally yellowish light brown (Figs. 1, 2). Lateral margins of metope (~frons) and coryphe (~vertex) dark brown. Coryphe with brown to dark brown longitudinal stripes besides of median line (Fig. 8). Fore wings transparent or matte, with yellowish light brown veins (Figs. 1–3). Hind wings transparent, with yellowish or light brown veins. Outside apices of fore femora each with dark brown spot. Apices of leg spines and dorsolateral plates of arolium of pretarsus black. Claws brown to dark brown or black. Arolium whitish. Abdomen yellowish light brown.

Structure: Total length (from head apex to apex of wings, n=2, unless otherwise indicated), males – 9.4–9.5 mm; females – 11.0–12.0 mm. Body length (no wings) males – 6.5–6.5 mm; females –7.3–7.5 mm. Wing length – 7.5–9.9 (n = 4). Head projected in front of eyes for about width of eye, distally angulate,

with apical corners turned up (in lateral view) (Figs. 2, 9). Metope (Fig. 7) long and narrow, rhomboid, widest near level of antennae; lateral margins foliate to frontoclypeal suture and turned perpendicular to metope plane. Dorsal (upper) margin of metope strongly concave. Median carina distinct dorsally, obsolete before frontoclypeal suture; sublateral carinae visible dorsad, running closely to median carina near lower level of eyes. Frontoclypeal suture distinct, nearly horizontal. Post- and anteclypeus with smooth median carina. Ocelli rudimentary. Antennae robust, scape very short (wider than long), pedicel elongate bearing rows of sensory plate organs. Rostrum reaching hind coxae, with long 3rd segment, equal in length to second one, not narrowing apically. Coryphe (Fig. 8) long and narrow, shallowly rhomboid, 2 times as long as widest point, with lateral margins foliate and diverging subapically; posterior margin obtusely angularly (nearly straight) concave, anterior margin carinate, convex.

Pronotum short (Fig. 8; half-length of coryphe at midline), anterior margin abruptly convex medially, acutely angulated; median carina weak, anterior marginal carinae strong following contour of eyes extending laterally to reach caudal margin. Paranotal lobes wide and foliate, with keel behind eyes. Mesonotum large and long, median carina weak, laterally enclosed by raised keels (obsolete caudally) creating shallow median valley; lateral carinae distinct, arched, appearing anteriorly to meet medially, becoming obsolete in posterior half of mesonotum. Fore wings well developed, broadly rounded distally, exceeding abdomen by one-third wing length (Fig. 1). Fore wings with narrow hypocostal plate and cross venation developed only in apical half of the wing. Clavus of fore wing open, about 4/5 as long as whole wing. Basal cell large, elongated oval. Precostal field with 5–12 veins (Fig. 3). Fore wing vein sequence: R 2, furcating closely to basal cell; ir 6–10; r–m 3–7; M 3, first furcation near wing middle, secondary divisions subapically; im 4–6; m–cua 4–6; CuA 1; cup–pcu 3–4; Pcu and A_1 join near clavus middle. Hind wings slightly shorter than fore wings. Hindwing sequence (Fig. 23): c-r 2; R 3, firstly furcating below coupling lobe, posterior branch furcating apically; ir 1; r-m 2; M 2, furcating apically; m-cua 2; CuA 3, firstly furcating after coupling lobe, anterior branch furcating apically; icua 1; cua-cup 4; CuP 1; cup-pcu 3; Pcu 2, furcating apically; pcu-a_1 3; A_1 2; A_2 2. Hind tibia with 2 lateral spines (3 in some females, Fig. 13); 6–7 apical spines (arranged 2+4–5, 2 outer spines larger than others, the two legs are symmetrical mirror images) (Fig. 14). First and second metatarsomeres subequal in length, each distally dilated to enclose succeeding tarsomere (Fig. 16). First metatarsomere with 2 latero-apical and 5–6 intermediate spines (Fig. 14). Second metatarsomere with 2 latero-apical spines and prominent median pad, ventral surface covered by long setae (Fig. 15). Arolium of pretarsus wide, not reaching apices of claws (in dorsal view), with concave posterior margin (Fig. 16). Each claw with 4 long setae.

Male terminalia (Figs. 24–29): Pygofer approximately rectangular in lateral view, with concave anterior and convex hind margins (Fig. 24). Phallobase strongly curved upward, horseshoe-shaped (in lateral view), dorso-apically poorly sclerotized and may expand to become spherical (Figs. 24, 26). Ventral phallobase lobe short and wide, slightly enlarged subapically, rounded, not reaching apical margins of dorsolateral lobes (Fig. 27). Aedeagus with long ventral hooks, 2/3 as long as aedeagus, directed basally, acuminate apically, each with short lateral projection near middle and with serrate

outer margin distad of lateral process. Apical aedeagal processes visible above the phallobase (lateral view), wide at the level of ventral phallobase lobe margin, narrow apically (Figs. 26, 27, *aep*). Connective with large cup-like apodeme (Fig. 26, *cp*). Gonostylus massive, with convex hind margin and widely rounded caudo-dorsal angle (Fig. 28). Capitulum of gonostylus on distinct neck, with marginal hump below capitulum (in lateral view). Capitulum long, slightly enlarged apically (in dorsal view) (Fig. 25). Anal tube large, long and wide, nearly oval (in dorsal view) (Fig. 29), with ventral margins sinuate, deeply concave subapically (in lateral view) (Fig. 24); apex concave (in dorsal view, *ac*). Anal column long, nearly half as long as anal tube.

Female terminalia: Sternum VII with deeply concave hind margin (Fig. 39). Gonoplacs rounded and flat (Fig. 38). Anal tube long, narrowing apically, with weak apical concavity. Anal column long, 0.3 times as long as anal tube, and narrow.

Etymology.—The specific name is after the Orellana Province of Ecuador where the type material was collected.

Remarks.—The new species is closely related to *Oronoqua deina* Fennah, 1947 according to fore wing venation and rostrum structure, but clearly differs by male genitalia structure details. *Oronoqua orellana* sp. n. has the male anal tube concave apically (dorsal view, convex in *O. deina*) (Fig. 29); its ventral margin (in lateral view) sinuate with short deep subapical concavity and long, shallow proximal concavity (*O. deina* with ventral concavities deep and subequal) (Fig. 24). Ventral phallobase lobe 1.3 times as long as wide (Fig. 27, vs. 1.7x as long in *O. deina*, Gnezdilov et al. 2010, figs. 5C, 5D). Ventral aedeagal hooks not curved basally, each hook with short lateral projection near its middle and with serrated outside margin below lateral process (Figs. 26, 27, vs. slightly S-curved in its basal half, without lateral projections and teeth in *O. deina*, Gnezdilov et al. 2010, fig. 5A).

Type material.—Holotype ♂, Ecuador: "1023 Ecuador Orellana / Erwin Transect / Onkone Gare Camp / Reserva Etnica Waorani" // "0039′ 25.7″ S 076 27′ 10.8″ W / 11.II.95 T.L. Erwin et al. / Fogging terre firme forest" (USNM). Paratypes: Ecuador: same as holotype (1♂, ZIN); same data except [sample #] 1454, 7.ii.96 (1♂, ZIN); same data except [sample #] 681, 20.vi.94 (1♂, ZIN); same data except [sample #] 942, 10.x.94 (2♀, ZIN); same data except [sample #] 1572, / 22.vi.96 (1♀, ZIN); same data except [sample #] 1092, 2.vii.95 (1♀, ZIN); same data except [sample #] 1093, 3.vii.95 (1♀, ZIN); same data except [sample #] #971, 9-Feb-95 (1♂, UDCC); same data except [sample #] 723, 25-Jun-94 (1♂, USNM); same data except [sample #] 1712, 2-Oct-96 (1♂, USNM), same data except [sample #] 1434, 5-Feb-96 (2♀, USNM); same data except [sample #] 861, 4-Oct-94 (1♀, UDCC).

Oronoqua feria sp. n.

http://zoobank.org/8FE01067-071D-437E-9ADF-033AA18485B3

(Figs. 4–6, 10–12, 17–19, 21–22, 30–37, 40–41)

Diagnosis.—A deeply colored species. Forewing reticulation mostly restricted to its distal half. Aedeagal hooks elongate and distally expanded into a spoon-like structure bearing an asymmetrical distal furcation. Ventro-lateral margin of anal tube (in lateral view) bearing a pair of subequal concavities; in dorsal view, caudal margin concave.

Figs. 10–12. *Oronoqua feria* sp. n., head and thorax (male, paratype). 10, Frontal view. 11, Head and thorax, dorsal view. 12, Head and thorax, lateral view.

Description.—*Coloration: Male*. Similar to *O. orellana* sp. n., but darker in most respects. General color shades of brown on pale background (Fig. 4). Lateral carinae and approximate regions of metope (~frons) and coryphe (~vertex) near black (Figs. 10, 11). Preocular fields with dark band from eye to head apex (Fig. 12). Dorsal (upper) angles of metope, dorsal parts of sublateral carinae and inside margin of ventral portions of lateral carinae dark brown to black (Figs. 10, 12). Median carina of postclypeus with elongate brown to black spot. Coryphe medially embrowned (Fig. 11). Rostrum with brown ring apically. Pronotum medially with milky color behind darkened carina, laterally flanked by brown (Fig. 11). Keel-shaped border between paradiscal fields of pronotum and paranotal lobes dark brown to black (Fig. 12). Lower margins of paranotal lobes dark brown. Mesonotum color similar to *O. orellana*, but more intensely colored – dark brown to black longitudinal stripes tracing median carinae and outside of lateral carinae; whitish markings on apex of scutellum and near tegulae. Fore wings clear, veins light brown to brown, with radius in point of furcation, median in point of first furcation and its anterior branch near wing middle, cubitus anterior near to basal cell, and some transverse veins

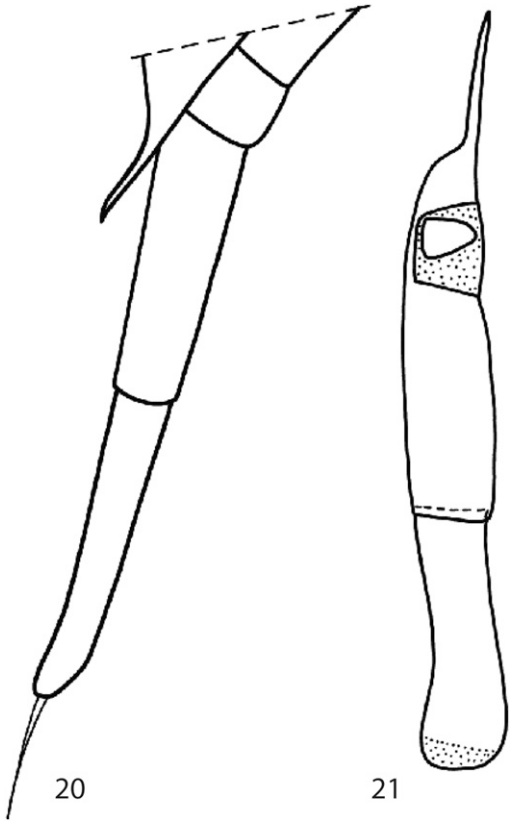
Figs. 13–16. *Oronoqua orellana* sp. n., hind leg (female, paratype). 13, Hind tibia and tarsus, ventral view. 14, Ventral view of tarsus. 15, Same, rotated clockwise. 16. Dorsal view of tarsus.

Figs. 17–19. *Oronoqua feria* sp. n., hind leg (female, paratype). 17, Hind tibia and tarsus, dorsolateral view (showing lateral tibial spines). 18, Dorsolateral view of tarsus. 19, Ventral view of tarsus.

in apical part of the wing dark brown to black (Fig. 6). Apical cells embrowned. Clavus below first anal vein and Pcu + A_1 embrowned. Hind wings transparent, with brown veins. Legs with fovea pale, darker on carinae, tibiofemoral joint and on some specimens at apices of tibiae and tarsi. Hind coxae with dark brown areas outside. Fore femora each with dark brown spot subapically on outer side. Middle tibiae with dark brown margins. Hind tibiae with large dark brown spots on apices. Apices of leg spines and dorsolateral plates of arolium of pretarsus black. Apical halves of third tarsomeres dark brown to black. Claws brown to dark brown. Arolium whitish. Abdominal tergites darkened on lateral margins. Abdominal sternites light yellow.

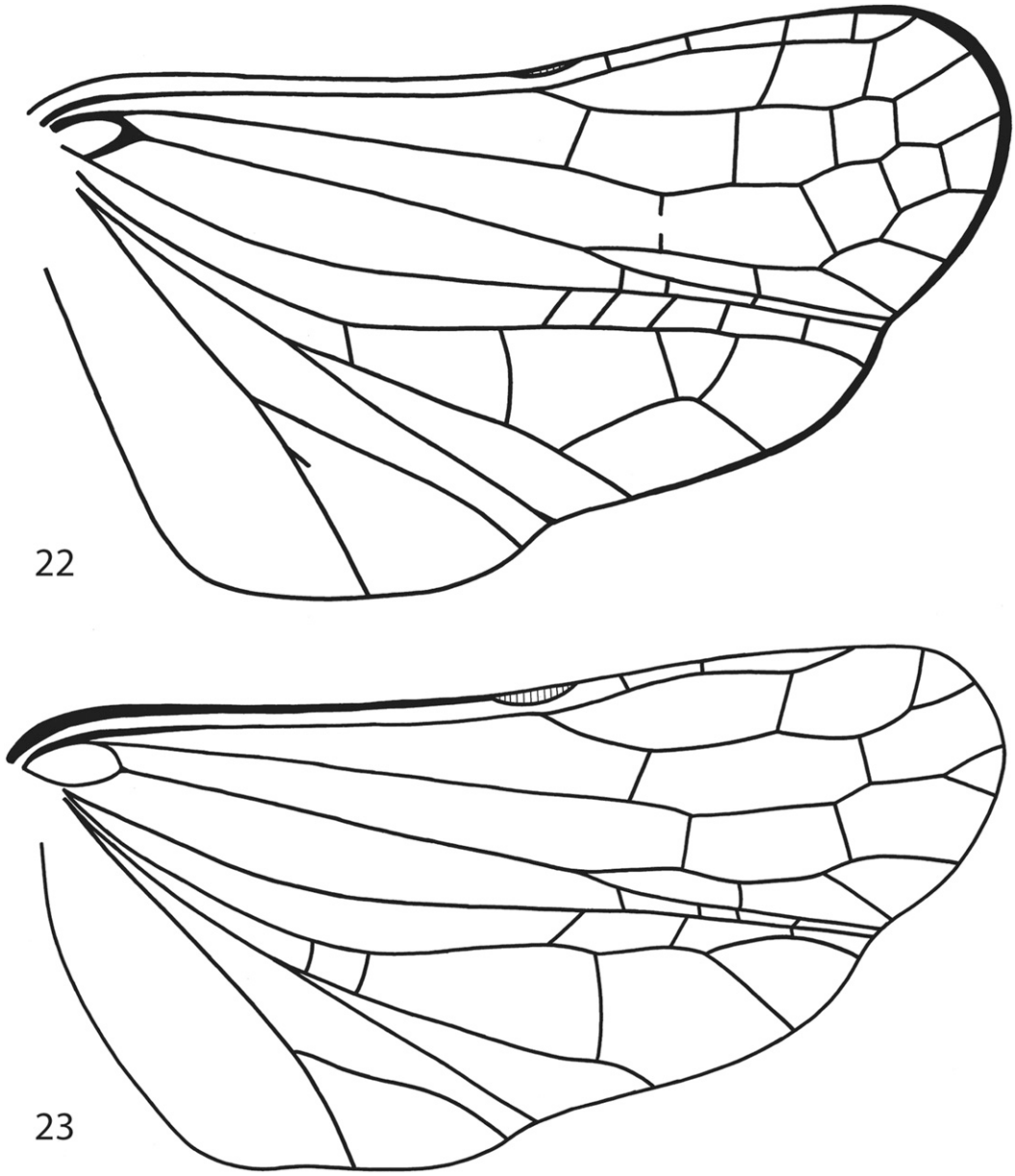
Coloration: Female. Very similar to males. Pygofer with posterior margins shading to dark brown. Anal tube brown.

Structure: Total length (from head apex to apex of wings) (n=3 for all measurements except where indicated), males – 11.0–11.1 mm; females – 12.0–12.7 mm. Body length (no wings) males – 6.2–8.4 mm (n=2); females – 8.6 mm. Wing length, males – 7.1–8.8 mm; females – 10.0 mm. Head distally angulate, projected in front of eyes for about width of eye, with apical corners turned up (in



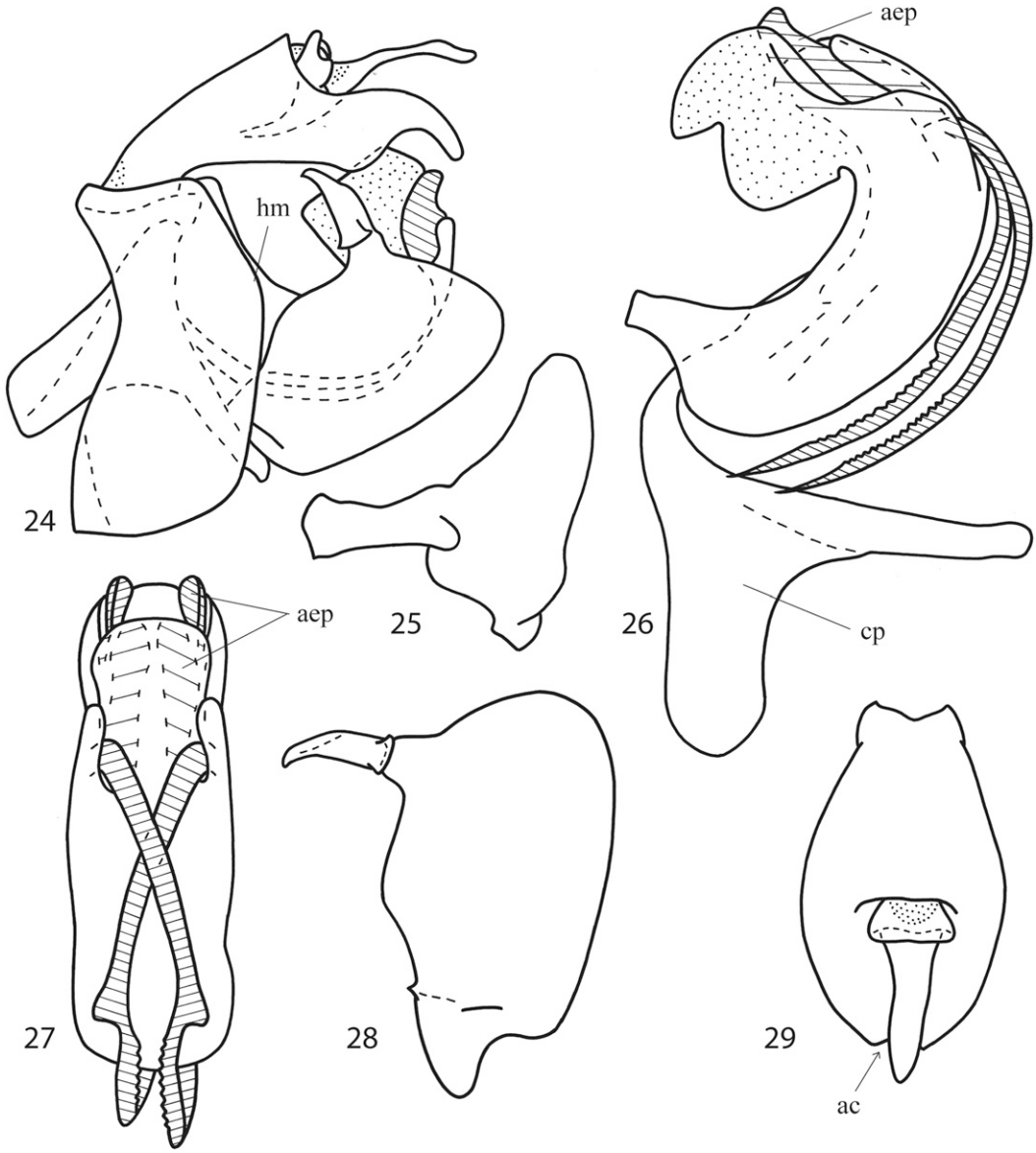
Figs. 20–21. Rostrum of *Oronoqua* spp. 20, *O. ibisca.* 21, *O. feria* sp. n.

lateral view) (Fig. 12). Metope long and narrow, rhomboid, widest near level of antennae; lateral margins foliate; dorsally strongly angularly concave (Fig. 10). Disc of metope convex, median carina keeled from level of antennae to subapical bulla (forming concavity between median carina and lateral margin that is embrowned dorsally); ventrad of antennae, median carina forked, becoming obscure; sublateral carinae visible dorsad, running closely to median carina near lower level of eyes. Frontoclypeal suture nearly straight; post- and anteclypeus triangular, tapering ventrally, with smooth median carina. Ocelli rudimentary (adjacent to anteroventral margin of eye). Antennae robust, scape very short (wider than long, about 1/4–1/3 length of pedicel), pedicel more elongate, bulbous, bearing rows of sensory plate organs. Rostrum reaching hind coxae, with terminal (3rd) segment, equal in length to preceding one; apex of rostrum slightly curved (Fig. 21). Coryphe long and narrow (Fig. 11), shallowly rhomboid; anterior margin convex and carinate, disc concave, slightly more than twice as long as widest point; lateral margins foliate, diverging subapically; posterior margin angularly concave. Pronotum short (half-length vertex, 1/3 length of mesonotum at midline), anterior margin medially convex with anterior apex abruptly convex; median carina obsolete, lateral carinae strong, keeled, following curved contour of eyes, extending laterally to paranotal lobes, longitudinally keeled behind eyes, wide and foliate, projected ventrally to below level of antennae. Mesonotum large and elongate, median carina paired, enclosed distally and laterally by lateral keels (obsolete caudally) creating shallow median valley; carinae becoming obsolete posteriorly. Fore wings well developed, broadly rounded distally, exceeding abdomen by one-quarter to one-third of wing length (Fig. 4). Fore wings with narrow hypocostal plate, cross venation developed only in apical half; clavus about 4/5 as long as wing, Pcu+A_1 of clavus reaching claval fold (CuP). Basal cell distinct, elongated oval. Precostal field with 10–14 veins. Fore wing vein sequence: R 2, furcating closely to basal cell; ir 7–11; r–m 4–6; M 3–4, first furcation before wing midlength, secondary divisions subapically; im 3–5; m–cua 3–5; CuA 1; cup–pcu 2–3. Pcu and A_1 join beyond clavus midlength. Hind wings broad, slightly shorter than fore wings. Hindwing sequence (Fig. 22): c-r 4; R 2, firstly furcating below coupling lobe; ir 2; r-m 4; M 1; m-cua 4; CuA 3, firstly furcating after coupling lobe, anterior branch furcating apically; icua 1;



Figs. 22–23. Hind wing veination. 22, *Oronoqua feria* sp. n. 23, *Oronoqua orellana* sp. n.

cua-cup 3; CuP 1; cup-pcu 5; Pcu 2, furcating apically; pcu-a_1 3; A_1 2; A_2 2. Hind tibia with 2 lateral spines (Fig. 17); 7–9 apical spines, irregularly arranged, 2 outer spines on each side largest. First metatarsomere slightly longer than second one, each distally dilated to enclose succeeding tarsomere (Figs. 18, 19). First metatarsomere with 2 latero-apical and 5 intermediate spines; second metatarsomere with 2 latero-apical spines and prominent median



Figs. 24–29. *Oronoqua orellana* sp. n., male terminalia (holotype). 24, Genitalia and terminal segments, left lateral view. 25, Gonostylus, dorsal view. 26, Phallobase and connective, left lateral view. 27, Phallobase, caudo-ventral view. 28, Gonostylus, lateral view (proximal portion down). 29, Anal tube, dorsal view (proximal portion upward). Abbreviation: *ac* – apical concavity of anal tube; *aep* – apical aedeagal processes; *cp* – cup-like apodeme of connective; *hm* – hind margins of pygofer.

pad, ventral surface covered by long setae (Fig. 19). Arolium of pretarsus wide, not reaching apices of claws, with concave distal margin (in dorsal view) (Fig. 18). Each claw with 2–3 (4?) long lateral setae.

Male terminalia (Figs. 30–37): Pygofer approximately rectangular in lateral view, with concave anterior and convex posterior margins (Fig. 30). Phallobase strongly curved upward, horseshoe-shaped

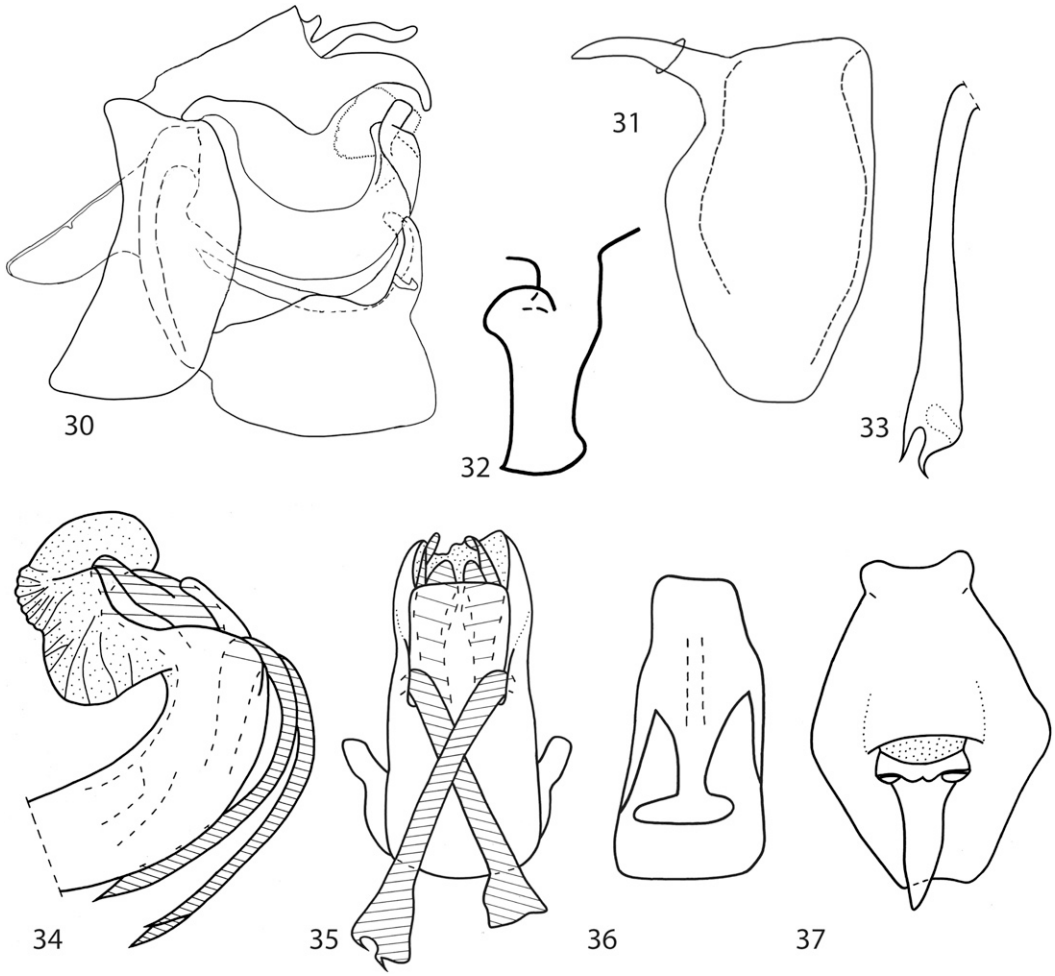
(in lateral view), dorso-apically membranous portion inflating to spherical sac (Fig. 34). Dorso-lateral phallobase lobes without processes. Ventral margin of each dorso-lateral phallobase lobe deeply and widely concave subapically. Ventral phallobase lobe short and wide, nearly quadrangular, with straight upper margin, far not reaching apical margins of dorsolateral lobes (Fig. 35). Apical aedeagal processes massive, well visible above phallobase, each with two lobes. Aedeagus with long ventral retrose hooks (Fig. 35), slightly enlarged apically, emerging at nearly ¾ length of aedeagus, extending retrosely nearly to aedeagal base, hooks straplike, distally expanded into spoonlike structure, asymmetrically bifid with distal and subapical processes (lateral serrations absent; Fig. 33). Each hook with a transverse white spot subapically. Connective with large cup-shaped apodeme. Gonostylus massive, with nearly straight hind margin and right caudo-dorsal angle. Capitulum of gonostylus elongate on long neck (in lateral view), with large lateral tooth (Fig. 31). Capitulum of gonostylus slightly enlarged apically (in dorsal view) (Fig. 32). Anal tube large, long and wide, nearly rhomboid in dorsal view, with apical concavity (Fig. 37); in lateral view sinuate ventrally creating two, approximately equal, deep concavities (Fig. 30). Anal column nearly half length of anal tube.

Female genitalia: Sternum VII with deeply concave hind margin (Fig. 41). Gonoplacs truncate and flat with scalloped lateral margins (Fig. 40). Anal tube long, broad, tapering distally to truncate apex. Anal column about 1/3 length of anal tube.

Etymology.—The specific name '*feria*' is after the modern Latin word meaning holiday, festival, and is intended as feminine in gender.

Remarks.—Superficially, specimens of *Oronoqua feria* sp. n. are darker and more strongly marked than O. *orellana* sp. n. (and *O. ibisca* Gnezdilov, Bonfils, Aberlenc and Basset), and are similar to *O. deina* Fennah in general appearance. External differences such as coloration (*O. deina* appears to have a pale midventral vitta on the vertex and pronotum, lacking in *O. feria*), but based on currently available specimens, it is unclear whether coloration is fully consistent. Diagnostic differences separating the species include fore wing reticulation (only *O. ibisca* possesses reticulation in the fore wing base). The male of *O. ibisca* is unknown. Male genitalic structures separating the remaining 3 species include features of the ventral margin of the anal tube in lateral view (*O. deina* and *O. feria* sp. n. have 2 subequal concavities, *O. orellana* sp. n. has a short, distal concavity); in dorsal view, *O. deina* has the apex of the anal tube convex, as opposed to concave in *O. orellana* sp. n. and *O. feria* sp. n.; and finally differences in the straplike ventral aedeagal hooks: in *O. feria* sp. n. parallel sided in lateral view, subapically expanded into a spoon-like, asymmetrically bifid structure; in *O. orellana* sp. n. the possess a lateral projection near midlength and are distally serrated for about ½ their remaining length; for *O. deina* they are sinuate near midlength.

Type material.—*Holotype* ♂, Ecuador: "1069 Ecuador Orellana / Erwin Transect / Onkone Gare Camp / Reserva Etnica Waorani // 00 39′ 25.7″ S 076 27′ 10.8″ W / 2.vii.95 T.L. Erwin et al. / Fogging terre firme forest // Nogodinidae / Morphospecies 12 / L. Barringer / thesis specimen // UDCC_TCN 00096963 [2D barcode label] // Oronoqua / feria" (USNM). Paratypes: same data except [sample #] 1031, 12.ii.95 (1♂, USNM; wings removed for illustration); same data except [sample #] 1452, 7.ii.96 (1♂,



Figs. 30–37. *Oronoqua feria* sp. n., male terminalia (holotype). 30, Genitalia and terminal segments, left lateral view. 31, Gonostylus, lateral view (proximal portion down). 32, Capitulum of gonostylus, dorsal view. 33, Apex of ventral aedeagal hook, dorsal view. 34, Phallobase, left lateral view. 35, Phallobase, caudo-ventral view. 36, Connective, dorsal view, 37, Anal tube, dorsal view (proximal portion upward).

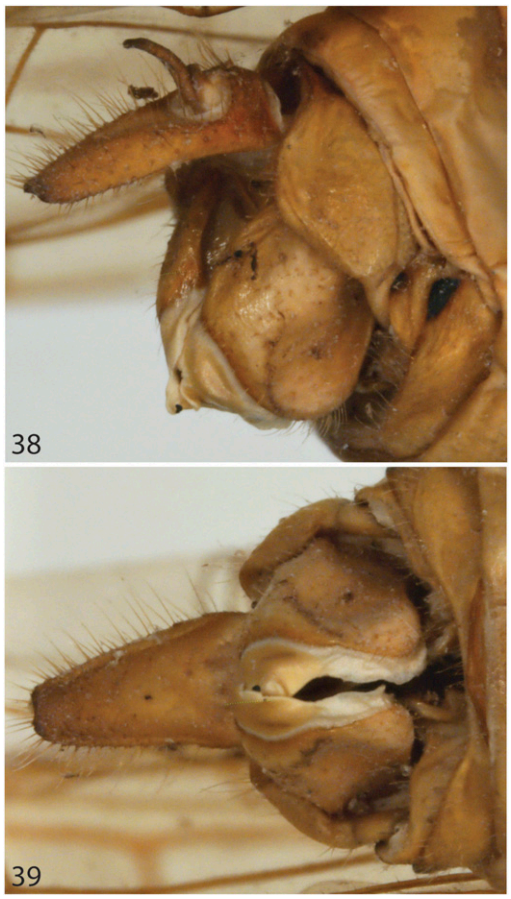
UDCC); same data except [sample #] 693, 21,vi.1994 (1♀, USNM); same data except [sample #] 1022, 11.ii.95 (1♂, ZIN); same data except [sample #] 941, 10.x.94 (1♀, ZIN); same data except [sample #] 1541, 21.vi.96 (1♀, ZIN); same data except [sample #] 1725, 3.x.96 (1♀, ZIN); same data except [sample #] 971, 9.ii.95 (1♀, ZIN); #2068 Ecuador: Orellana / Tiputini Biodiversity Station / nr Yasuni National Park / 0037′ 55″ S 076 08′ 39″ W / T.L. Erwin et al., 06-II-1999 / fogging terre firme forest (1♀, ZIN).

Discussion

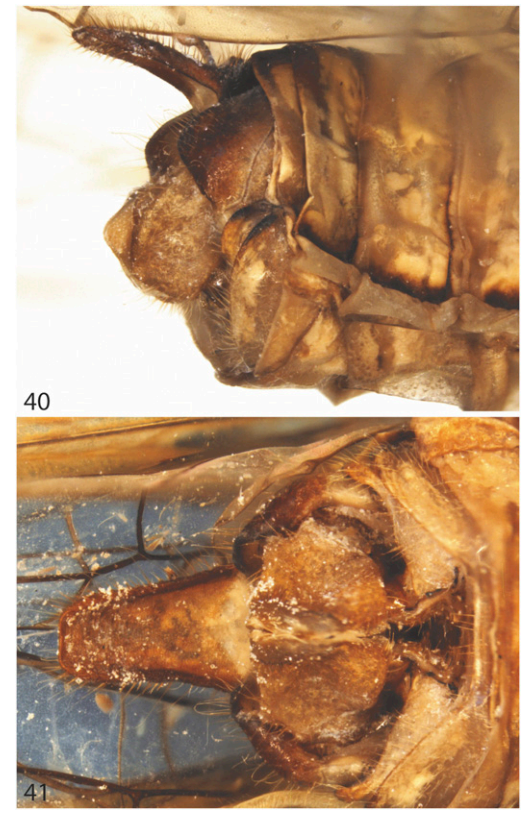
The Issidae of the Neotropics is third in numbers of genera and species known in comparison to Oriental and Palaearctic faunas (Gnezdilov 2013) and it has been the subject of recent systematic investigations (Gnezdilov and O'Brien

2008; Gnezdilov 2018a, b, 2019; Gnezdilov and Bartlett 2018; Gnezdilov and Dmitriev 2018). The molecular phylogeny of Issidae by Wang et al. (2016, based on sequences from the 18S, 28S, COXI and Cytb genes) found New World Issidae – the Thioniinae Melichar, 1906, *sensu* Wang et al. (2016), represented by two species of *Thionia sensu lato* in the analysis one of which belongs to the genus *Cheiloceps* Uhler, 1895 (Gnezdilov 2018a) – to be sister to Old World Issidae – the Palearctic Issinae Spinola, 1839 and Oriental Hemisphaeriinae Melichar, 1906, a finding that contrasted to Melichar (1906) who treated this group as distributed also in Oriental and Australia regions and to Gnezdilov (2009, 2013, 2016) who treated Thioniini Melichar as junior synonym of Issini Spinola distributed worldwide and hypothesized Oriental origin of the family. Recently the tribe Thioniini *sensu* Wang et al. (2016) was divided into three subtribes – Thioniina *sensu stricto*, Oronoquina Gnezdilov, 2018 and Waoranina Gnezdilov and Bartlett, 2018 based on the structure of fore wings, hind wing venation, and male genitalia (Gnezdilov 2018a; Gnezdilov and Bartlett 2018).

Gnezdilov and Bartlett (2018), in describing Waoranina, noted as a diagnostic character expanding "sac" of the phallo-



Figs. 38–39. *Oronoqua orellana* sp. n. (paratype), female terminalia. 38, Lateral view. 39 Ventral view.



Figs. 40–41. *Oronoqua feria* sp. n. (paratype), female terminalia. 40, Lateral view. 41, Ventral view.

base, known also for the genus *Incasa* Gnezdilov and O'Brien, 2008. Apparently this sac is a character of *Guianaphryna dendrophila* Gnezdilov, 2018 (Thioniinae: Guianaphrynini Gnezdilov, 2018) as well (Gnezdilov 2018b, fig. 12). In the genera *Aztecus* Gnezdilov and O'Brien, 2008 and *Balduza* Gnezdilov and O'Brien, 2006 this sac is sclerotized (Gnezdilov and O'Brien, 2006, fig. 1; Gnezdilov and O'Brien, 2008, figs. 14, 20). In the genera *Argepara* Gnezdilov and O'Brien, 2008 and *Traxus* Metcalf, 1923 the sac is poorly developed, but membranous area is visible on phallobase dorso-apically (Gnezdilov and O'Brien, 2008, figs. 33, 38, 43). Apparently such structure of the phallobase with expanding "sac" is rather typical for New World Issidae, however, this feature needs to be investigated in a broader range of taxa to elucidate its phylogenetic distribution and importance.

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