

A review of the genus *Inguromorpha* Edwards, 1888 (Lepidoptera, Cossidae) with description of eight new species

Artem E. Naydenov

Altai State University, 61 Lenin Ave., Barnaul, 656049, Russia

Roman V. Yakovlev

Altai State University, 61 Lenin Ave., Barnaul, 656049, Russia; Tomsk State University, 36 Lenin Ave., Tomsk, 634050, Russia

Fernando C. Penco

Fundación de Historia Natural “Félix de Azara”, Departamento de Ciencias Naturales y Antropología, Universidad Maimónides, Hidalgo 775 piso 7 (1405BDB) Ciudad Autónoma de Buenos Aires, Argentina

The article presents an illustrated catalog of the genus *Inguromorpha* Edwards, 1888 (Lepidoptera: Cossidae, Hypoptinae), which includes 22 species. The following new combinations are established: *Inguromorpha centrosoma* (Dyar, 1925) **comb. nov.**, *Inguromorpha clathrata* (Dognin, 1910) **comb. nov.**, *Inguromorpha clymene* (Schaus, 1921) **comb. nov.**, *Inguromorpha crassiplaga* (Schaus, 1905) **comb. nov.**, *Inguromorpha racana* (Dognin, 1920) **comb. nov.** Eight new species are described: *Inguromorpha arawaka* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha bachmanni* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha catarinea* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha muisca* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha paraguica* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha scutulata* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha texasensis* Naydenov, Yakovlev & Penco **sp. nov.**, *Inguromorpha willinki* Naydenov, Yakovlev & Penco **sp. nov.** The distributional maps for all the species of the genus are provided.

Corresponding author: Roman Yakovlev (yakovlev_asu@mail.ru)

Academic editor: A. Matsyura | Received 30 January 2023 | Accepted 26 March 2023 | Published 27 April 2023

<http://zoobank.org/38DF55C1-A446-4A1F-B121-D37FCC258C6D>

Citation: Naydenov AE, Yakovlev RV, Penco FC (2023) A review of the genus *Inguromorpha* Edwards, 1888 (Lepidoptera, Cossidae) with description of eight new species. Acta Biologica Sibirica 9: 209–242. <https://doi.org/10.5281/zenodo.7865698>

Keywords

Biodiversity, fauna, Carpenter moths, Hypoptinae, new species, taxonomy, Neotropics, South America, North America.

Introduction

In the recent years, the authors of the current study have been revising various taxonomic groups of carpenter moths of the New World, including the subfamily Hypoptinae Neumoegen & Dyar,

1894. Thus, we have described 8 generic taxa and 33 species new for this subfamily (Penco et al. 2019a, b, 2020, 2022; Naydenov et al. 2020, 2022a, b; Yakovlev et al. 2020a, b, 2022).

The genus *Inguromorpha* was allocated by Edwards (1888) for *I. slossoni* Edwards, 1888, and included by him into the family Bombycidae Latreille, [1802]. Later, Dyar (1898) synonymized *I. slossoni* with *Cossus basalis* Walker, 1856. Barnes & McDunnough (1911) in their publication considered the genus *Inguromorpha* as a younger synonym of the genus *Givira* Walker, 1856 (type species, by monotypy *Givira tristis* Walker, 1856). Dyar (1940) in the iconography by Seitz, regarding the genus *Inguromorpha* as an independent one, included ten species into it: *I. arcifera* (Dyar, 1906), *I. basalis* (Walker, 1856), *I. entone* Dyar, 1940, *I. polybia* (Schaus, 1892), *I. polybioides* (Schaus, 1901), *I. ramulosa* (Dognin, 1920), *I. sandelphon* (Dyar, 1912), *I. triarctata* (Schaus, 1905), *I. roseobrunnea* (Dognin, 1917), *I. itzalana* (Strecker, 1900). Herewith, in his study Dyar did not indicate the species *I. buboa* Schaus, 1934 and *I. arbeloides* Dyar, 1899, originally described by the authors in this genus. Additionally Dyar did not comment on the synonymy of the genus *Ravigia* Dyar, 1905 (type species, by original designation: *Givira polybioides* Schaus, 1901) with *Inguromorpha*, which was for the first time done by Hodges (1983). Schoorl (1990) in his study accepts the system of Dyar and characterizes the genus according to the thorax sclerites morphology. Donahue (1995) in the checklist of Neotropical Cossidae included into the genus *Inguromorpha* the species *I. amundasa* (Druce, 1890), *I. sterila* (Dognin, 1910), *I. beatrix* (Schaus, 1921), and *I. buboa* Schaus, 1934. Later, two species, *I. sterila* and *I. beatrix* were included into the genus *Dogniniya* Yakovlev, Naydenov & Penco, 2019 (Yakovlev et al. 2019).

Materials and methods

Images of imago were taken by the camera of Canon EOS 70D and Canon EOS 600D illuminated in Lightbox. The genitalia slides were examined with a Zeiss Stemi 2000 C microscope and Olympus SZX16 microscope. The images were taken with the camera of Olympus DP74 and Canon EOS 70D. Photos were enhanced and arranged to plates with Adobe Photoshop software. The map was made using open source software (<https://www.simplemapp.net/>). Morphological terminology used in the description follows Kristensen (2003). The genital preparations were made according to Lafontaine & Mikkola (1987).

Abbreviations used in the text:

AMNH - American Museum of Natural History, New York, USA;

FCP - Collection of Fernando C. Penco, Morón, Buenos Aires;

FML - Fundación Miguel Lillo, San Miguel de Tucumán;

IMZA - Instituto de Microbiología y Zoología Agrícola, INTA Castelar, Buenos Aires;

MACN - Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires;

MHUB - Museum für Naturkunde der Humboldt-Universität, Berlin, East Germany;

MLP - Museo de La Plata, Buenos Aires;

MNHN - Museum National d’Histoire Naturelle, Paris, France;

MWM - Museum of Thomas Witt, Munich, Germany;

NHMUK - The Natural History Museum of United Kingdom, London, UK;

RYB – Collection of Roman Yakovlev, Barnaul, Russia;

USNM – United States National Museum of Natural History (Smithsonian Institution), Washington, USA;

ZISP – Zoological Institute, St. Petersburg, Russia.

Result

Examining the materials from the territory of South and North America, including the type specimens, the authors established that the genus *Inguromorpha* Edwards, 1888 has distinctive morphological characters. Studying its specimens in private collections and museums, we found eight new species and established new combinations for five species. The taxonomic status of *I. roseobrunnea* (Dognin, 1917), *Hypopta inguromorpha* Schaus, 1905, *I. itzalana* (Strecker, 1900), and *I. buboa* Schaus, 1934 currently remains unidentified.

Genus *Inguromorpha* Edwards, 1888

Edwards, 1888: 182–183

Type species (by monotypy): *Inguromorpha slossoni* Edwards, 1888: 183.

= *Ravigia* Dyar, 1905: 178 (synonymized by Hodges (1983: 30)). Type species (by original designation): *Givira polybioides* Schaus, 1901.

Description. Size medium; length of fore wing 10–21 mm; wingspan 22–44 mm; antennae relatively short (about 1/3–1/4 of fore wing in length), with short bipectinate crest; color mostly grey, rarely light-brown or orange, with portions of white; wing with dark wavy pattern, in most species forming a concentration shaped as distinct semi-circle on top of fore wing, rarely in distal portion at lower margin of fore wing, and also transverse line in proximal third of wing. Hind wing relatively short with the same undulated pattern but less expressed.

Male genitalia. Uncus long, split up to base, edges acute; gnathos arms very short or completely reduced; gnathos absent; valve variable throughout its length, apically round or acute; more or less expressed polymorphic harpe on inner surface of valve; apex and central portion of valve poorly sclerotized; juxta, as a rule, cup-like, with abdominal process of different length and pair of more or less developed lateral processes; saccus not big, slightly elongated; phallus of various length (mostly, approximately equal to valve in length), thin; distal end with process of various shape (in some cases, serrated).

Female genitalia. Ovipositor short; papillae anales acute, anterior and posterior apophyses short, of equal length, ostium cup-like; ductus very long, thin, bursa big, bag-like, of irregular shape, without signa.

Diagnosis. The genus has clear distinctions from most genera of the subfamily Hypoptinae, but is close to some of them, in the same time:

- from *Uretiana*, *Dogniniya*, *Qhichwaruna* and *Wiraqucha* differs in the absence of long processes on the valves and not fused, poorly sclerotized part, extending beyond their borders; the long processes in the species mentioned above are probably homologous with harpes on the inner surface of the valves in *Inguromorpha*.

- from *Thonyocossus* and *Hastam* differs in the wing pattern without longitudinal stripes on the dark background, and in the shorter and less sclerotized forked uncus.

- from *Dolecta*, whose representatives also have a forked uncus, differs in the deeper bifurcation of the uncus, and the uncus is apically simple and acute.

Composition. Twenty-two species.

Distribution. North and South America (from USA to Argentina).

1. *Inguomorpha amundasa* (Druce, 1890)

Figs 1–2, 34, 59

Cossus amundasa Druce, 1890: 508.

Type material (holotype) in NHMUK, examined.

Type locality: Sarayacu [Sarayaku village, Pastaza Province, Ecuador].

Inguomorpha amundasa - Donahue, 1995: 125

Material examined: Holotype ♂: **Ecuador:** Sarayacu, C. Buckley, “Ex. Coll. Herbert Druce, 1913”, “Joicey Coll., Brit. Mus. 1925 - 157” (NHMUK); **Peru:** 1 ♂, prov. Huánuco, Yuyapichis, ACP Panguana 9°36'S 74°56'W, 220 m, 09.2013, leg. Hubert Thöny, GenPrMWM: 36.999 (MWM).

Description. Antenna bipectinate, setae slightly longer than antenna stem diameter. Length of fore wing 20–21 mm; wingspan 42–44 mm, fore wing orange-yellow, with brown pattern (wide transverse band discally, brown portion submarginally, pattern of tiny strokes throughout all wing area). Hind wing grey-brown with thin wavy pattern.

Male genitalia. Uncus relatively short, split up to base, apices acute; tegumen robust; gnathos arms very short, leaf-like; gnathos reduced; valve with almost even costal margin, apex lanceolate, abdominal margin poorly curved, robust fang-like harpe on inner surface of valve in distal third, harpe based at costal margin, apex directed abdominally, in medium third of valve on inner surface - small harpe shaped as fold with base at sacculus; juxta saddle-like; saccus robust, trapezoidal; phallus slightly longer than valve, thick, poorly curved throughout all length, in distal third with very long thin crescent process.

Female unknown.

Diagnosis. The species differs from all the other species of the genus in the special orange-yellow color of the fore wing, in the robust fang-like harpe in the distal third of the valve and in the very long caudal process on the phallus.

Distribution. Ecuador and Peru.

2. *Inguomorpha arawaka* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/69CAB889-EA6D-4E4B-BE26-75304CD62FDF>

Figs 3, 35, 59

Type material. Holotype ♂: **Venezuela:** Carabobo, Cordillera de la Costa, Bejuma, Casa Maria, 500-1600 m, 16.viii.-04.ix.2005, leg. F. & Th. Greifenstein, GenPrMWM: 28.457 (MWM).

Description. Antenna bipectinate, setae almost equal to antenna stem diameter. Length of fore wing 13 mm; wingspan 29 mm. Fore wing white with poorly expressed darkening in root area,

basally thin brown stripe shaped as reverse letter Y, apically with thin crescent brown stripe, preapically dense brown pattern of undulated spots; more extended crescent brown stripe at anal angle, anal angle with dense brown pattern of undulated spots; straight transverse brown strokes postdiscally between veins; rare transverse undulated light-brown strokes throughout all wing area; fringe mottled (brown at veins, white between veins). Hind wing white with poorly expressed pattern of thin undulated light-brown stripes and strokes, small brown spots along wing margin at veins, fringe white, unicolorous.

Male genitalia. Uncus long, narrow, with deep slit-like bifurcation (up to tegumen); gnathos arms short, ribbon-like, slightly extended distally; gnathos reduced; valve short, costal margin smooth, small tooth-like harpe on inner surface of valve (in distal third), abdominal side of valve poorly curved, apex of valve lanceolate, poorly sclerotized; juxta ring-shaped; saccus basally wide and triangular, apically narrow, long and trapezoidal; phallus slightly shorter than valve, extended in medium third, with robust cuneal process in distal third.

Female unknown.

Diagnosis. The most significant diagnostic feature is the relatively short phallus, strongly extended in medium third, with the robust cuneal process in the distal third.

Distribution. Venezuela.

Etymology. The Arawak (Arahuacos) are a group of native peoples of the caribbean and part of South América.

3. *Inguromorpha arcifera* (Dyar, 1906)

Figs 4–5, 36, 59

Ravigia arcifera Dyar, 1906

Type material (holotype) in USNM, examined.

Type locality: USA, Texas, Brownsville.

= *Givira gabriel* Dyar, 1913: 323 (synonymized by Dyar (1940: 1284)).

Type material (holotype) in USNM, examined.

Type locality: Mexico, Cerritos, San Luis Potosi.

Inguromorpha arcifera - Dyar, 1940: 1284-1285

Material examined: Type material. Holotype *Ravigia arcifera* ♂: **USA:** Texas, Brownsville “Collection BrklvnMus”, USNMENT 00911933, Genitalia Slide by P. Gentili 85.290 (USNM); Holotype *Givira gabriel* ♂: **Mexico:** Cerritos, San Luis Potosi, “Aug. III”, “R. Muller Collector”, USNMENT 00911733, Type No. 14466 USNM, Genitalia Slide by P. Gentili 85.237 (USNM). — Further material. **USA:** 1 ♂, Texas, Cameron Co. [RSP: 43], Resaca de la Palma, St. Pk. Subtropical Resaca woodland, 25°59'19.1"N 97°34'09.4"W, 13.v.2008, leg. H.L. Kons Jr. & R.J. Borth, GenPrMWM: 28.628 (MWM).

Description. Length of fore wing 12–14 mm; wingspan 27–33 mm; antenna bipectinate, setae 2.5–3 times longer than antenna stem diameter, antenna equal to 0.5 of fore wing in length; costal area of fore wing light-grey, wide brown stripe discally, crescent brown spot apically, more or less bright brown spots developed throughout all wing area. Hind wing light-grey with dense pattern of grey

strokes throughout all wing area, thin light-brown rim, fringe light-grey.

Male genitalia. Uncus long, with deep slit-like bifurcation; gnathos arms very short, ribbon-like; gnathos reduced; valve short, costal margin smooth, small tooth-like harpe on inner surface of valve (in distal third), abdominal side of valve poorly curved, apex lanceolate, poorly sclerotized; juxta ring-shaped, basally wide, pyramidal, with thin needle-like process on base, directed abdominally; saccus very wide, semicircular, with semi-oval process apically; phallus slightly shorter than valve, very thick, in distal third with robust lobe-like process with small denticles on process edge.

Female unknown.

Diagnosis. The most significant diagnostic feature is the phallus with the robust lobe-like process in distal third with small denticles on the process edge.

Distribution. USA (Texas), Mexico.

4. *Inguromorpha bachmanni* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/995BF583-4CAD-4941-8F00-D37CE59026A8>

Figs 6, 37, 59

Material examined: Type material. Holotype ♂: **Argentina:** Juiuy prov., Santa Barbara Mts., 12 km SW Palma Sola, Eco Portal de Piedra NP, 25°05'42.6"S 64°23'56.9"W, 1045 m, 29.x. – 02.xi.2019, Genitalia preparation by Naydenov A. E. №293 (ZISP); Paratype 1 ♂: same data (RYB).

Description. Length of fore wing 13 mm; wingspan 28 mm; antenna bipectinate, setae very short, twice shorter than antenna stem diameter, antenna equal to 0.3 of fore wing in length; fore wing light-brown with thin black transverse stripe in discal cell and thin black oblique stripe (from costal margin to anal angle), thin grey reticulated pattern throughout all wing area, fringe light-brown; hind wing light-grey with thin grey reticulated pattern, thin light-brown rim, fringe light-brown.

Male genitalia. Uncus long, with deep slit-like bifurcation; tegumen robust, trapezoidal; valve long costal and abdominal sides smooth, outer margin semicircular, robust cuneal harpe on basal third of valve on inner surface; juxta with very long lateral processes clavately extended distally and long spiky process directed abdominally; saccus long, thin, tail-like; phallus 1/3 shorter than valve, almost straight, thick, with robust process in distal third, apex of process forked (with two prongs).

Female unknown.

Diagnosis. The new species is characterized by a series of diagnostic features: very short antenna setae, the juxta with very long lateral processes clavately extending distally and with the long spiky process directed abdominally; the phallus which is 1/3 shorter than valve, almost straight, thick, having a robust process in distal third, and the forked apex of the phallus with two prongs.

Distribution. Argentina (Juiuy).

Etymology. Dr. Axel Bachmann (1927–2017) was one of the most prominent naturalistic scientists in Argentina, specializing in particular in entomology and the biology of aquatic insects. He mentored hundreds of students and graduates, and taught several thousand students over his nearly 50-year career.

5. *Inguromorpha basalis* (Walker, 1856)

Figs 7–8, 38, 59

Cossus basalis Walker, 1856

Type material (holotype) in NHMUK, examined.

Type locality: Florida.

= *Inguromorpha slossoni* Edwards, 1888: 183 (synonymized by Dyar (1898: 213-214))

Type material (holotype) in AMNH, examined.

Type locality: Florida.

Material examined: Type material. Holotype *Cossus basalis* ♂: **USA:** Florida (NHMUK); Holotype of *Inguromorpha slossoni* ♂: **USA:** Florida, "Collection of Mrs. A. T. Slosson Ac. 26226", "JacksonV. Fla.", Genitalia Slide by P. Gentili 811 (AMNH). — Further material. **USA:** 1 ♂, Texas, Angelina Co. [313:29], xeric longleaf pine-oak savanna on Rd. 313A, 31°04'44.7"N 94°16'10.2"W, 24.v.2008, leg. H. L. Kons Jr. & R. J. Borth, GenPrMWM: 28.632 (MWM).

Description. Length of fore wing 14–16 mm; wingspan 32–36 mm; antenna bipectinate, setae 2.5–3 times longer than antenna stem diameter, antenna equal to 0.5 of fore wing in length; fore wing light-grey with thin black transverse stripe in discal cell; thin black crescent spot on wing apically, thin pattern of grey strokes throughout all wing area, fringe grey, unicolorous. Hind wing light-grey, with thin grey undulated pattern, fringe grey, unicolorous

Male genitalia. Uncus long with narrow deep slit-like bifurcation; tegumen robust, trapezoidal; valve very short, abdominal and costal sides smooth, slightly narrowing from base to apex, apically semicircular, small trapezoidal harpe in distal third; juxta ring-like; saccus very robust, bag-like; phallus narrowing from base to apex, apical end strongly sclerotized and poorly curved.

Female unknown.

Diagnosis. The species differs in the very simple pattern, the very big saccus, the phallus narrowing from base to apex, the strongly sclerotized and poorly curved apical end.

Distribution. USA (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, New Jersey, South Carolina, Tennessee, Texas, Virginia) (GBIF 2023).

6. *Inguromorpha catarinea* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/7573C670-9D69-4004-AC57-9EC2C2C50D0B>

Figs 9, 39, 59

Material examined: Type material. Holotype ♂: **Brazil:** Santa Catarina, S. Bento do Sul Sierra Rio Natal, 850 m, i.1999, leg. Hubert Thöny, GenPrMWM: 28.503 (MWM); Paratype 1 ♂: same data, GenPrMWM: 28.638 (MWM).

Description. Length of fore wing 16 mm; wingspan 34 mm; antenna bipectinate, setae equal to antenna stem diameter; antenna equal to 0.5 of fore wing in length. Fore wing light-brown, with series of brown strokes along costal margin, brown pattern more condensed basally, very fine undulated brown pattern marginally and submarginally, fringe light-brown. Hind wing light-brown, with sputtering of grey scales, fringe brown.

Male genitalia. Uncus with deep wide cut, apices of uncus halves acute and diverged to sides; tegumen robust, trapezoidal; valve long, costal side almost smooth, abdominal side curved, apex

slightly drawn back, a little acute; juxta ring-like, with robust branch-like lateral processes, long obliquely cut process directed abdominally; saccus very long, finger-like, with small sole-shaped extension apically; phallus very long, thin, poorly curved in medium third, with small hook-like process apically.

Female unknown.

Diagnosis. The new species is characterized by the poorly modified pattern, in the male genitalia – the very long saccus, very modified juxta and the thin, very long phallus, poorly curved in the distal third with a small hook-like apical process.

Distribution. Brazil (Santa Catarina).

Etymology. The new species is named after type locality (Santa Catarina, Brazil).

7. *Inguromorpha centrosoma* (Dyar, 1925) comb. nov.

Figs 10, 40, 60

Hypopta centrosoma Dyar, 1925

Type material (holotype) in USNM, examined.

Type locality: Mexico, Colima.

Langsdorfia centrosoma – Dyar, 1940: 1283-1284

Material examined: Type material. Holotype ♂: **Mexico:** Colima, xii.1923, “RMuller collector”, USNMMENT 00911720, Type No. 27515 USNM, Genitalia Slide by P. Gentili 85.221 (USNM).

Description. Length of fore wing 14 mm; wingspan 30 mm; antenna with double row of tiny denticles; antennae about 0.5 of fore wing in length. Fore wing basally brown, discally light-brown, postdiscally almost white, bright brown spot on border between postdiscal and submarginal area, very dense pattern of undulated grey and brown strokes submarginally and marginally, fringe brown.

Male genitalia. Uncus with deep slit-like incisure, apices of uncus halves acute; gnathos arms thin, short, not fused; gnathos reduced; valve long, costal and abdominal sides almost smooth, apex oval, small trapezoidal harpe in basal third of valve; juxta with long lateral processes leaf-likely extended apically, long awl-like process on juxta from below; saccus long, tapered, with small bulb apically; phallus 1/3 shorter than valve, poorly curved, basal end thick, distally strongly sclerotized, split into two halves (first short, apically blunt, second long, acute, with small tooth-like process).

Female unknown.

Diagnosis. Externally, similar to *I. clathrata*, from which clearly differs in the male genital structure: the uncus with the slit-like incisure and parallel halves; the poorly curved phallus with the split distal end (the phallus halves are relatively short).

Distribution. Mexico.

8. *Inguromorpha clathrata* (Dognin, 1910) comb. nov.

Figs 11, 41, 60

Hypopta clathrata Dognin, 1910: 37

Type material (holotype) in USNM, examined.

Type locality: French Guiana, Si-Laurent du Maroni.

Givira clathrata Dyar, 1940: 1283–1284

Material examined: Type material. Holotype ♂: **French Guiana:** Si-Laurent du Maroni, July, collection Le Mout, “Dognin Collection”, USNMENT 00911723, Type No. 29900 USNM, Genitalia Slide by P. Gentili 85.224 (USNM).

Description. Length of fore wing 17 mm, wingspan 37 mm. Antenna with double row of tiny denticles. Fore wing brown, with black transverse straight stripe discally, black reticulated pattern throughout all wing area. Hind wing dark-brown with thin black reticulated pattern throughout all wing area.

Male genitalia. Uncus with deep incisure in middle, uncus halves apically acute, sharply diverged to sides; valve long, narrow, costal and abdominal sides semicircular; juxta with long lateral processes leaf-like extended apically, small spiky process on abdominal side of juxta; saccus trapezoidal, apically narrow, semicircular; phallus twice shorter than valve, strongly curved, basally thick, distally strongly sclerotized, split into two halves (first half short, apically blunt, second half long, acute, with small tooth-like process).

Female unknown.

Diagnosis. Externally, the new species is similar to *I. centrosoma* (Dyar, 1925), from which it clearly differs in the dark-brown wings, the uncus halves strongly diverged to sides and the strongly curved phallus.

Distribution. French Guiana.

9. *Inguromorpha clymene* (Schaus, 1921) **comb. nov.**

Figs 12, 42, 60

Hypopta clymene Schaus, 1921: 395.

Type material (holotype) in USNM, examined.

Type locality: Guatemala, Quirigua.

Material examined: Type material. Holotype ♂: **Guatemala:** Quirigua, May, “Schaus and Barnes coll.”, USNMENT 00911725, Type No. 23434 USNM, Genitalia Slide by P. Gentili 85.225 (USNM).

Description. Length of fore wing 18 mm; wingspan 39 mm; antenna short (about 1/3 of fore wing in length), bipectinate, setae twice longer than antenna stem diameter. Fore wing mottled, background light-brown, wide transverse brown stripe discally, wide undulated brown stripe postdiscally, thin semicircular stripe apically, series of tiny brown spots along costal margin, fringe mottled (light-brown between veins, brown at veins). Hind wing light-grey with thin reticulated pattern and small brown spots along wing margin, fringe light-brown unicolorous.

Male genitalia. Uncus with deep slit-like incisure, uncus halves apically acute; gnathos arms completely reduced; valve apically acute, robust cuneal process on costal side and harpe of complicated shape on inner surface of valve; juxta robust, ring-like with short acute process on

abdominal surface; saccus very robust, apically sole-like; phallus big, slightly longer than valve, strongly curved on border between basal and medium third, apically split (one half short, apically blunt, second spoon-like extended, with eight prongs of almost equal size along its edge).

Female unknown.

Diagnosis. The species differs from all the representatives of the genus in the special mottled color, the very robust saccus with a sole-like apex and the special phallus (apically split, the first half is short and apically blunt, the second is spoon-like extended and has eight prongs of equal size located along its edge). This type of phallus is only in *Inguromorpha texasensis* Naydenov, Yakovlev & Penco sp. nov., but the latter clearly differs externally: the grey wings, the fore wing with a small brown preapical spot, the apically blunt saccus without a sole like extension.

Distribution. Guatemala.

Remarks. Dyar (1940) synonymized the species with *I. sandelphon* (Dyar, 1912), however we studied the holotype of *I. sandelphon* and found that it is a bona species.

10. *Inguromorpha crassiplaga* (Schaus, 1905) comb. nov.

Figs 13, 43, 60

Hypopta crassiplaga Schaus, 1905: 343

Type material (holotype) in USNM, examined.

Type locality: French Guiana, St. Jean, Maroni.

Material examined: Type material. Holotype ♂: **French Guiana:** St. Jean, Maroni, “Collection WmSchaus”, USNMENT 00911735, Type No. 9024 USNM, Genitalia Slide by P. Gentili 85.227 (USNM). — Further material. **Colombia:** 1 ♂, Meta Municipio Restrepo, 04°17'31"N 73°35'41"W, 990 m, 08.i.2018, leg. Victor Sinyaev and Juan Machado, Genitalia preparation by Naydenov A. E. №316 (RYB).

Description. Length of fore wing 16–17 mm; wingspan 36–38 mm; antenna short (about 1/3 of fore wing in length), bipectinate, setae twice longer than antenna stem diameter. Fore wing creamy, with wide light-brown portion along costal margin, small light-brown portions in root area and submarginally, apically small brown crescent spot, rare thin reticulated brown pattern throughout all wing area. Hind wing light-grey with poorly expressed reticulated brown pattern.

Male genitalia. Uncus with deep incisure, halves apically acute; gnathos arms completely reduced; valve strongly narrowing to apex, with robust semicircular process in medium third of costal side, small harpe of complicated shape on inner surface of valve; juxta ring-like with very thick lateral walls, small cuneal process on abdominal surface; saccus elongated, trapezoidal; phallus slightly longer than valve, poorly curved in medium third, of almost even thickness along all length, with long spike process (its apex directed proximally) in distal third of phallus.

Female unknown.

Diagnosis. The species is characterized by two unique features: the strongly developed semicircular process in the medium third of costal side of the valve and the spiky process (with the apex directed proximally) on the distal part of the phallus.

Distribution. French Guiana, Colombia.

Remarks. Dyar (1940) synonymized the species with *I. polybia* (Schaus, 1892), however we studied the holotype of *I. polybia* and found that it is a bona species.

11. *Inguomorpha entone* Dyar, 1940

Figs 14, 44, 60

Inguomorpha entone Dyar, 1940: 1285

Type material (holotype) in USNM, examined.

Type locality: Panama, La Chorrera.

Material examined: Type material. Holotype ♂: **Panama:** La Chorrera, "May 12, Aug. Busck", USNMMENT 00911756, Type No. 41723 USNM, Genitalia Slide by P. Gentili 85.231 (USNM).

Description. The specimen poorly preserved. Length of fore wing 17 mm; wingspan 39 mm; antenna short (about 1/3 of fore wing in length), bipectinate, setae twice longer than antenna stem diameter. Fore wing very shabby, brown, transverse straight black stripe discally, series of black strokes along costal margin. Hind wing brown with dense black reticulated pattern.

Male genitalia. Uncus relatively short, with deep slit-like incisure; gnathos arms ribbon-like, thin, not fused; gnathos reduced; valve cup-like, with distinct cuneal sclerotization preapically, poorly sclerotized apically, directed dorsally, sacculus very developed, with deep notch in distal third; juxta tubulate, abdominal side strongly sclerotized; saccus pyramidal, apically acute; phallus very short (twice shorter than valve), poorly narrowing to apex, apical end split into two halves (first short, apically blunt, second long, shaped as poorly curved spike directed distally).

Female unknown.

Diagnosis. The species is characterized by the relatively short uncus, the tubulate juxta and the very short phallus.

Distribution. Panama.



Figure 1. Figures 1-11. *Inguromorpha*, adults: **1.** *I. amundasa* (Druce, 1890), male, holotype, Ecuador, Sarayacu (NHMUK); **2.** *I. amundasa* (Druce, 1890), male, Peru, Huánuco, Yuyapichis (MWM); **3.** *I. arawaka* **sp. nov.**, male, holotype, Venezuela, Carabobo, Cordillera de la Costa (MWM); **4.** *I. arcifera* (Dyar, 1906), male, holotype, USA, Texas, Brownsville (USNM); **5.** *I. arcifera* (Dyar, 1906), male, USA, Texas, Cameron Co. (MWM); **6.** *I. bachmanni* **sp. nov.**, male, holotype, Argentina, Jujuy prov., Santa Barbara Mts., 12 km SW Palma Sola (ZISP); **7.** *I. basalis* (Walker, 1856), male, holotype, USA, Florida (NHMUK); **8.** *I. basalis* (Walker, 1856), male, USA, Texas, Angelina Co. (MWM); **9.** *I. catarinea* **sp. nov.**, male, holotype, Brazil, Santa Catarina, S. Bento do Sul Sierra Rio Natal (MWM); **10.** *I. centrosoma* (Dyar, 1925), male, holotype, Mexico, Colima (USNM); **11.** *I. clathrata* (Dognin, 1910), male, holotype, French Guiana, Si-Laurent du Maroni, (USNM).

12. *Inguromorpha muisca* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/F5BA71A1-D2DD-4498-A446-E483DE88DABF>

Figs 15, 45, 60

Material examined: Type material. Holotype ♂: **Colombia:** prov. Cundinamarca-Municipio El Oasis, Mountain forest above the river valley, 2150 m, 5°N 74°3'W, 15.viii.1998, leg. Rudloff, GenPrMWM: 28.456 (MWM).

Description. Length of fore wing 17 mm; wingspan 35 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing narrow, light-grey, with poorly expressed grey pattern (series of spots along costal margin), C-shaped stripe discally, crescent spots apically and in anal angle, poorly expressed reticulated pattern throughout all wing area. Hind wing light-grey with reticulated pattern throughout all wing area.

Male genitalia. Uncus long, with deep slit-like incisure, uncus halves apically acute, diverged to sides; gnathos arms short, ribbon-like, not fused; gnathos reduced; valve cup-like, costal, anal and outer sides strongly hypertrophied, small mastoid harpe on costal side closer to apex, small trapezoidal harpe on anal side, apex of valve drawn dorsally; juxta ring-like, with thick sides; saccus of medium length, cylindrical, apically semicircular; phallus equal to valve in length, thick, almost straight, apically blunt, short thick process, directed distally, at apical side.

Female unknown.

Diagnosis. The new species is characterized by the poorly modified wing pattern, the uncus halves diverged to sides and the valve apex, drawn dorsally. Externally, the new species is most close to *I. willinki* Naydenov, Yakovlev & Penco sp. nov., from which it differs in a fundamentally different structure of the phallus (in *I. willinki* the phallus is short, with a spade-likely extended apex).

Distribution. Colombia.

Etymology. The Muisca (also called Chibcha) are a native people and culture of the Altiplano Cundiboyacense, Colombia, that formed the Muisca Confederation before the Spanish conquest.

13. *Inguromorpha paraguaica* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/CA4F1333-5D24-434D-AF8F-9428EB5E28E5>

Figs 16–17, 46, 56, 61

Material examined: Type material. Holotype ♂: **Paraguay:** Dep. Kanindeyu Mbaracayu, 24°08'S 55°31'W, 13–15.xi.2017, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №307 (ZISP); Paratypes 3 ♂♂ 2 ♀♀: **Paraguay:** 1 ♂, Dep. Alto Parana, Estancia Dimas, 25°33'S 55°13'W, 7.v.2011, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №389 (RYB); 1 ♂, Dep. Pte. Hayes, Estancia Salazar, 23°04'S 59°15'W, 23.ii.2011, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №383 (RYB); 1 ♀, Dep. Alto Parana, Estancia Dimas, 25°33'S 55°13'W, 10–12.ii.2018, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №306 (RYB); **Brazil:** 1 ♂, Espirito Santo, Santa Leopoldina, Dorf Tirol, 700 m, xi.1999, leg. Hubert Thöny, GenPrMWM: 28.458 (MWM); 1 ♀, Espirito Santo, Santa Leopoldina, Biriricas, 700 m, 20.03.-20.04.1997, GenPrMWM: 28.613 (MWM).

Male description. Length of fore wing 14–16 mm; wingspan 30–36 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-grey, with well developed black reticulated pattern basally, submarginally and marginally (especially, around Cu-veins), discally almost without pattern. Hind wing light-grey, with thin reticulated black pattern throughout all wing area, the most intensive pattern developed submarginally.

Male genitalia. Uncus long, with deep slit-like incisure, uncus halves very thin, apically sharp; gnathos arms ribbon-like, short, not fused; gnathos reduced; valve slightly narrowing to apex, lanceolate, small trapezoidal harpe on inner surface in distal third of valve; juxta ring-like with moderately hypertrophied walls; saccus of medium length, cylindrical, apically semicircular; phallus equal to valve in length, thick, poorly curved in basal third, apex blunt, apical end with short thick apically blunt process directed distally.

Female description. Length of fore wing 16–17 mm; wingspan 35–37 mm; antenna simple, not pectinate. Wing pattern the same as that of male but more intensive.

Female genitalia. Ovipositor very short, papillae anales tapered, apophyses posteriores and apophyses anteriores short, of equal length; ostium slit-like; antrum and ductus bursae without distinctive border, very long, thin; bursa bag-like, without signa.

Diagnosis. The new species clearly differs from all the known species of the genus in the very thin halves of the uncus. In this feature it is similar only to *I. scutelata*, from which it sharply differs in the simple poorly modified wing pattern and the special shape of the phallus.

Distribution. Paraguay, Brazil (Espírito Santo).

Etymology. The new species is named after country of type locality (Paraguay).

14. *Inguromorpha polybia* (Schaus, 1892)

Figs 18–20, 47, 57, 61

Langsdorfia polybia Schaus, 1892: 329

Type material (holotype) in USNM, examined.

Type locality: Brazil, Petropolis.

=? *Hypopta inguromorpha* Schaus, 1905 (synonymized by Dyar (1940: 1285)).

Type material (holotype) in USNM, not examined.

Type locality: French Guiana, St. Laurent.

Inguromorpha polybia Dyar, 1940: 1285

Material examined: Type material. Holotype ♂: **Brazil:** Petropolis, “Collection WmSchaus”, USNM 01198037, Type No. 18395 USNM, Genitalia Slide by P. Gentili 85.265 (USNM). — Further material. **Brazil:** 1 ♂, Espírito Santo, Santa Leopoldina, Dorf Tirol, 700 m, i.2000, leg. Hubert Thöny, GenPrMWM: 28.454 (MWM); 1 ♂, Boca do Mato, Cachreiras de Macacu, 20-30.i.1997, GenPrMWM: 28.455 (MWM); 1 ♂, Rio Grande do Sul, Treze Tílias, 700 m, i.1999, leg. Hubert Thöny, GenPrMWM: 28.510 (MWM); 1 ♀, Bahia, Umgebung Camacan, 750 m, 10-14.xi.2010, leg. Th. Greifenstein, GenPrMWM: 28.581 (MWM); 1 ♂, Blumenau, iii.1930 (FML).

Male description. Length of fore wing 13–14 mm; wingspan 38–39 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-grey, with well developed brown pattern, light-brown portion with tiny black dots along costal margin, brown portion basally, light-brown stripe discally, bright brown stroke apically, thin crescent brown stroke at anal angle, poorly noticeable reticulated pattern throughout all wing area, fringe mottled, light between veins, brown at veins. Hind wing light-brown with poorly expressed reticulated pattern.

Male genitalia. Uncus long, with deep slit-like incisure, halves of uncus basally thick, two distal thirds sharply narrowing, apices acute and diverged to sides; gnathos arms ribbon-like, short, not fused; gnathos reduced; valve short, costal and abdominal sides almost parallel, apex blunt, small harpe shaped as obliquely located sclerotized fold on border between medium and distal thirds of valve on inner surface; juxta ring-like with moderately hypertrophied walls and short spiky process on abdominal side; saccus of medium length, basally very thick, strongly narrowing distally, apex

semicircular; phallus equal to valve in length, poorly curved in medium third, poorly extended distally, apex extended as a spoon, blunt, apically with very short thick process with blunt apex, directed distally.

Female description. Length of fore wing 17 mm; wingspan 37 mm; antenna bipectinate, setae very short (equal to antenna stem in diameter). Wing pattern the same as that of male, but more intensive.

Female genitalia. Ovipositor very short, papillae anales tapered, apophyses posteriores and apophyses anteriores short, approximately equal in length; ostium slit-like; antrum and ductus bursae without distinct border, very long, thin; bursa bag-like, without signa, with noticeable band in area of ductus bursae confluence.

Diagnosis. The species clearly differs from the other species of the genus in the special structure of the uncus (its halves are of an unusual shape: basally thick, two distal thirds sharply narrowing, apically acute and diverged to sides). In the shape of the uncus, it is similar to *I. polybioides*, but in the latter, the uncus halves are significantly less extended basally.

Distribution. Brazil (Bahia, Rio de Janeiro, Espirito Santo, Santa Catarina, Rio Grande do Sul).

Remarks. Dyar (1940) synonymized the species with *I. crassiplaga* (Schaus, 1905). However, we studied the holotype of *I. crassiplaga* – it turned to be a bona species. The holotype *Hypopta inguromorpha* Schaus, 1905 was not studied by us, and the status of this taxon remains unclear.

15. *Inguromorpha polybioides* (Schaus, 1901)

Figs 21–23, 48, 61

Givira polybioides Schaus, 1901: 48

Type material (holotype) in USNM, not examined.

Type locality: Brazil, Paraná, Castro.

Ravigia polybioides Dyar, 1905: 178

Inguromorpha polybioides Dyar, 1940: 1285

Material examined: Type material. Holotype ♂: **Brazil:** Paraná, Castro, “Collection WmSchaus”, USNM 01198084, Type No. 19591 USNM, Genitalia Slide by P. Gentili 85.216 (USNM). — Further material. **Bolivia:** 1 ♂, Región Chapare, 400 m, Zischka leg., “Det. P. Gentili, 1988” (MLP); **Paraguay:** 1 ♂, Dep. Caazapá, Puesto Cristal, San Juan Nepomuceno, xii.1998, GenPrMWM: 28.511 (MWM); 1 ♂, Dep. Alto Parana, Estancia Dimas, 25°33'S 55°13'W, 15–18.iv.2012, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №147 (RYB); 2 ♂♂, same locality, 3-5.i.2013, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №315, №320 (RYB); 2 ♂♂, same locality, 28–30.x.2016, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №319 (RYB); 7 ♂♂, same locality, 20.x.2011, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №386 (RYB); 10 ♂♂, same locality, 16.xi.2011, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №387, №388 (RYB); 1 ♂, Dep. Caazapá, La Golondrina, 25°40'S 55°29'W, 22–24.x.2014, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №314 (RYB); 1 ♂, Dep. Concepción, Isla Real, 22°35'S 57°37'W, 24–25.iii.2017, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №318 (RYB); 1 ♂, Dep. Cordillera, Pirareta, 25°29'S 56°56'W, 12–15.x.2010, leg. U. Drechsel, Genitalia preparation by Naydenov A. E. №384 (RYB); **Argentina:** 1 ♂, Misiones, Puerto Iguazú, Col. A. Breyer, “Det. P. Gentili, 1988” (MLP); 1 ♂, Iguazú, 30.i - 13.iii.1945, Hayward, Willink & Goldbach (FML); 1 ♂, Iguazú, 08.iii.1993, leg. J. Ruml, GenPrMWM: 25.524 (MWM); 1 ♂, Misiones, Dto.

Candelaria, Leandro N. Alem, ix.1953, Gaitotin leg. (IMZA); 1 ♂, Misiones, xii.1954, Gaitopulo leg. (MACN); 2 ♂♂ Panambí (IMZA); 1 ♂, Corrientes, “MACN-Bar-Lep-ct 5751” (MACN); 1 ♂, La Rioja, Guayapa, iii.1955 (IMZA); 1 ♂, Tucumán, San Javier, 15.i.1994, leg. J. Ruml, GenPrMWM: 26.740 (MWM); 1 ♂, Jujuy, Santa Barbara Mts., 12 km SW Palma Sola, Eco Portal De Piedra NP, 24°05'42.6"S 64°23'56.9"W, 1045 m, 29.x.–02.xi.2019, leg. Yakovlev R.V., Genitalia preparation by Naydenov A. E. №309 (RYB); 1 ♂, Jujuy, 10 km SEE Caimancito, 23°44'38.6"S 64°31'09.2"W, 405 m, 25–26.x.2019, leg. Yakovlev R.V., Genitalia preparation by Naydenov A. E. №311 (RYB).

Description. Length of fore wing 10–15 mm; wingspan 22–33 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-creamy, with well developed grey pattern, grey portion and series of black strokes along costal margin, grey portion at root area, relatively wide grey stripe postdiscally, small grey portion apically, grey reticulated pattern throughout all wing area, especially developed cubitally, fringe mottled: light between veins, dark at veins. Hind wing light-creamy with thin distinct grey reticulated pattern.

Male genitalia. Uncus long with deep slit-like incisure, uncus halves basally extended, two distal thirds narrowing, apically acute, slightly diverged to sides; gnathos arms ribbon-like, short, not fused; gnathos reduced; valve apically split into two almost equal halves, both halves of apex semicircular, small tapered harpe on inner surface of distal third of valve, sacculus very developed; juxta ring-like with moderately hypertrophied walls and short spiky process on abdominal side; saccus of medium length, cylindrical, apically semicircular; phallus equal to valve in length, poorly curved in medium third, apical end with very short apically double prong.

Female unknown.

Diagnosis. The species clearly differs from all the species of the genus in the split apex of the valve and the poorly expressed double prong on the apical end of the phallus. In the shape of the uncus, the new species is similar to *I. polybia*, but in this species the basal extension of the uncus halves is significantly more expressed.

Distribution. Brazil (Paraná), Bolivia, Paraguay, Argentina (Misiones, Jujuy, Tucuman, Corrientes, La Rioja).

Remarks. New records for Jujuy, Tucuman, Corrientes and La Rioja.

16. *Inguromorpha racana* (Dognin, 1920) **comb. nov.**

Figs 24–26, 49, 58, 61

Hypopta racana Dognin, 1920: 10

Type material (holotype) in USNM, examined.

Type locality: Argentina, Mendoza.

= *Anastomophleps claosticha* Hering, 1923: 23 (synonymized by Penco and Yakovlev (2015: 88))

Type material (holotype) in MHUB, examined.

Type locality: Argentina, Mendoza.

= *Givira isarba* Schaus, 1934 (synonymized by Penco and Yakovlev (2015: 88))

Type material (holotype) in USNM, examined.

Type locality: Argentina, La Rioja.

Givira racana Dyar, 1940: 1280

Material examined: Type material. Holotype of *Hypopta racana* ♂: **Argentina:** Mendoza, leg. C.S. Reed, “Dognin Collection”, USNMENT 01198092, Type No. 29876 USNM, Genitalia Slide by P. Gentili 85.268 (USNM); Holotype of *Anastomophleps claosticha* ♂: **Argentina:** Mendoza, i.[19]05, leg. Jensen-Haarup V., Genitalia Slide By P. Gentili P6-840 (MHUB); Holotype of *Givira isarba* ♀: **Argentina:** La Rioja, “Giacomelli Coll.”, USNMENT 00911742, Type No. 34512 USNM, Genitalia Slide By P. Gentili 85.249 (USNM). — Further material. **Argentina:** 3 ♂♂, prov. Catamarca, Alpasinche, 14.xi.1998, leg. A. Ugarte P., GenPrMWM: 26.741, GenPrMWM: 26.744, GenPrMWM: 26.753 (MWM); 1 ♂, Salta prov., Las Curtiembres, 23–24.ii.1992, leg. A. Ugarte P., GenPrMWM: 26.742 (MWM).

Male description. Length of fore wing 12–14 mm; wingspan 28–32 mm; antenna with very short denticles. Fore wing grey with special spotty pattern (discally, with stripe of round black spots, postdiscally and submarginally medially – with 2–3 round black dots), hind wing light-grey with poorly expressed reticulated pattern in area of anal veins.

Male genitalia. Uncus relatively short, with deep slit-like incisure, uncus halves narrowing apically, apices acute, slightly diverged to sides; gnathos arms reduced; valve lanceolate, apically semicircular, costal and abdominal margins poorly curved, medium third of valve with portion of more intense rectangular sclerotization, not forming a harpe; juxta with very long leaf-like lateral processes and very long spiky process on abdominal surface; saccus very thin, cylindrical, apically blunt; phallus slightly shorter than valve, strongly curved throughout all length, with small double prong apically.

Female description. Length of fore wing 17 mm; wingspan 34 mm; antenna simple. Wing pattern similar to that of male, but significantly darker.

Female genitalia. Ovipositor very short, papillae anales tapered, apophyses posteriores and apophyses anteriores short, almost equal in length; ostium slit-like; antrum and ductus bursae without distinct border, very long, thin; bursa bag-like, without signa, consisting of two parts, the first, smaller – at ductus bursae confluence, and the second, about three times bigger, isolated by a cord from the smaller part.

Diagnosis. The species clearly differs from all the species of the genus in the unique spotty pattern on the fore wing, the very narrow cylindrical apically blunt saccus and the strongly curved phallus with small double prong apically.

Distribution. Argentina (Mendoza, La Rioja, Catamarca, Salta).

17. *Inguromorpha ramulosa* (Dognin, 1920)

Figs 27–28, 50, 61

Hypopta ramulosa Dognin, 1920: 9–10.

Type material (holotype) in USNM, examined.

Type locality: Argentina, La Rioja.

Inguromorpha ramulosa Dyar, 1940: 1285

Material examined: Type material. Holotype ♂: **Argentina:** La Rioja, “Dognin Collection”,

USNMENT 01198074, Type No. 29877 USNM, Genitalia Slide by P. Gentili 85.269 (USNM). — Further material. **Argentina:** 1 ♂, Jujuy Prov., 10 km SEE Caimancito, 23°44'38.5" S 64°31'08.7" W, 371 m, 05.xi.2019, leg. R.V. Yakovlev, Genitalia preparation by Naydenov A. E. №310 (RYB); 1 ♂, Jujuy Prov., 10 km SEE Caimancito, 23°44'38.6" S 64°31'09.2" W, 405 m, 25-26.x.2019, leg. R.V. Yakovlev, Genitalia preparation by Naydenov A. E. №313 (RYB); 2 ♂♂, San Juan, Pertili, 9.i.1994, "J. R.", GenPrMWM: 26.710, GenPrMWM: 26.786 (MWM); 2 ♂♂, 1 ♀, La Rioja: Col. Giacomelli (MACN).

Description. Length of fore wing 11–14 mm; wingspan 25–31 mm; antenna twice shorter than fore wing in length, bipectinate, setae 1.5 times longer than antenna stem diameter. Fore wing brown, with lighter portions in medium part of wing, darker portions on periphery, black reticulated pattern throughout all wing area, more developed postdiscally and submarginally (in cubital veins area). Hind wing light-grey with clearly expressed black reticulated pattern.

Male genitalia. Uncus of medium length, with deep slit-like incisure, uncus halves very thick basally, gradually narrowing apically, apices acute and slightly diverged to sides; gnathos arms reduced; valve of medium length with poorly curved costal side, abdominal side semicircular, apex blunt, obliquely cut; juxta with thin lateral processes and small mastoid process on abdominal side; saccus thin, cylindrical, apically semicircular; phallus slightly curved in medium third, preapically with small two-peaked process (located at a right angle to phallus axis).

Female unknown.

Diagnosis. The species is characterized by the brown color of the fore wing, the special shape of the juxta (the thin lateral processes and the small mastoid process on abdominal side).

Distribution. Argentina (La Rioja, Jujuy, San Juan).

18. *Inguromorpha sandelphon* (Dyar, 1912)

Figs 29, 51, 61

Givira sandelphon Dyar, 1912: 106.

Type material (holotype) in USNM, examined.

Type locality: Mexico, Misantla.

Inguromorpha sandelphon Dyar, 1940: 1284.

Material examined: Type material. Holotype ♂: **Mexico:** Misantla, v.1911, "2988", "R. Muller collector", USNMENT 01198119, Type No. 14236 USNM, Genitalia Slide by P. Gentili 85.273 (USNM).

Description. Length of fore wing 15 mm; wingspan 34 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-brown, with brown root area, large brown spots discally (in cubital veins), brown stripe postdiscally, brown semicircular spot apically, series of brown strokes along costal margin. Hind wing light-brown with thin brown reticulated pattern throughout all wing area.

Male genitalia. Uncus of medium lengths with deep slit-like incisure, uncus halves slightly extended basally, poorly narrowing to apices, apices acute, slightly diverged to sides; gnathos arms reduced; valve lanceolate, costal side smooth, abdominal edge slightly curved, small tapered harpe in distal third of valve, peculiar triangular notch with thick walls on sacculus; juxta with very thick lateral walls and small mastoid process on abdominal side, saccus long, cylindrical, slightly

extended to apex, apex semicircular; phallus equal to valve in length, strongly curved in medium third, apex blunt, apical end with long process with serrated top, directed distally.

Female unknown.

Diagnosis. The species has several unique features: small tapered harpe in the distal third of the valve and the peculiar triangular notch with thick walls on the sacculus.

Distribution. Mexico.

19. *Inguromorpha scutulata* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/51668E4D-466E-4EBE-8E93-A865D4D6A4B3>

Figs 30, 52, 62

Material examined: Type material. Holotype ♂: **Colombia:** Huila, 10 km East from Neiva, 02°55'39" N 75°10'027" W, 650 m, 06.ii.2018, leg. Victor Sinyaev and Juan Machado, Genitalia preparation by Naydenov A. E. №317 (ZISP).

Description. Length of fore wing 16 mm; wingspan 36 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-brown, root area brown, thin crescent brown stripe postdiscally, semicircular spot preapically and distinct reticulated pattern postdiscally and submarginally. Hind wing light-brown with thin brown reticulated pattern throughout all wing area.

Male genitalia. Uncus with deep slit-like incisure, uncus halves very thin, almost straight, apically acute; gnathos arms reduced; valve relatively short, costal side poorly curved, abdominal side strongly curved, in distal third of valve – robust cuneal harpe directed obliquely from edge of valve proximally; juxta with thick lateral walls; saccus long, cylindrical, slightly extending apically, apex semicircular; phallus shorter than valve, strongly curved in basal third, apically blunt, with robust process in apical third, directed distally, with cuneal apex.

Female unknown.

Diagnosis. The species has a unique feature – the robust cuneal harpe in the distal third of the valve, directed obliquely from the valve edge proximally. In the very thin uncus halves, it is similar to *I. paraguaica*, from which sharply differs in a series of characters: the mottled modified pattern and the special shape of the phallus.

Distribution. Colombia.

Etymology. Scutulatus [lat.] – reticulated, patterned.



Figure 2. Figures 12-23. Inguromorpha, adults: **12.** *I. clymene* Schaus, 1921, male, holotype, Guatemala, Quirigua (USNM); **13.** *I. crassiplaga* (Schaus, 1905) male, holotype, French Guiana, St. Jean, Maroni (USNM); **14.** *I. entone* Dyar, 1940 male, holotype, Panama, La Chorrera (USNM); **15.** *I. muisca* **sp. nov.**, male, holotype, Colombia, prov. Cundinamarca-Municipio El Oasis (MWM); **16.** *I. paraguaica* **sp. nov.**, male, holotype, Paraguay, Dep. Kanindeyu Mbaracayu (ZISP); **17.** *I. paraguaica* **sp. nov.**, female, paratype, Paraguay, Dep. Alto Parana, Estancia Dimas (RYB); **18.** *I. polybia* (Schaus, 1892) male, holotype, Brazil, Petropolis (USNM); **19.** *I. polybia* (Schaus, 1892) male, Brazil, Espirito Santo, Santa Leopoldina, Dorf Tirol (MWM); **20.** *I. polybia* (Schaus, 1892) female, Brazil, Bahia, Umgebung, Camacan (MWM); **21.** *I. polybioides* (Schaus, 1901) male, holotype, Brazil, Parana, Castro (USNM); **22.** *I. polybioides* (Schaus, 1901) male, Argentina, Tucumán, San Javier (MWM); **23.** *I. polybioides* (Schaus, 1901) male, Argentina, Jujuy, 10 km SEE Caimancito (RYB).

20. Inguromorpha texasensis Naydenov, Yakovlev & Penco **sp. nov.**

Figs 31, 53, 62

<http://zoobank.org/572FA866-82C8-404C-8F53-EFE90877C9EB>

Material examined: Type material. Holotype ♂: **USA:** Texas, Medina Co., 29°37'03.6"N 99°10'17.3"W, Hill Country SNA, oak-juniper woodland/savanna nr. creek, 10.vi.2008, leg. H. L. Kons Jr. & R. J. Borth, GenPrMWM: 28.623 (MWM); Paratype 1 ♂: **USA:** same data, GenPrMWM: 28.631 (MWM).

Description. Length of fore wing 12 mm; wingspan 27 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-grey with straight transverse brown stripe discally, round brown spot submarginally-radially, series of thin brown strokes along costal margin, poorly developed brown reticulated pattern throughout all wing area. Hind wing light-grey with thin grey reticulated pattern.

Male genitalia. Uncus of medium length with deep slit-like incisure, uncus halves thick, curved in medium third, apices acute, slightly diverged to sides; gnathos arms reduced; valve short, apically blunt, triangular harpe in distal part of valve, robust longitudinal fold along costal side, triangular notch on sacculus; juxta with very thick lateral sides and small mastoid process on abdominal side; saccus cylindrical, apically blunt; phallus 1/3 longer than valve, curved in medium third, apically blunt, in distal third – long process with serrated edge, directed dorsally.

Female unknown.

Diagnosis. The new species is characterized by a series of characters: the fore wing with a round brown spot submarginally-radially, the short, apically blunt valve with a triangular harpe distally, the robust longitudinal fold along costal side and the triangular notch on the sacculus.

Distribution. USA (Texas).

Etymology. The new species is named after type locality (Texas, USA).

21. *Inguromorpha triarctata* (Schaus, 1905)

Figs 32, 54, 62

Hypopta triarctata Schaus, 1905: 343

Type material (holotype) in USNM, examined.

Type locality: French Guiana, St. Jean, Maroni.

Inguromorpha triarctata Dyar, 1940: 1285

Material examined:Type material. Holotype ♂: **French Guiana:** St. Jean, Maroni, “Collection WmSchaus”, USNMMENT 01198094, Type No. 9025 USNM, Genitalia Slide by P. Gentili 85.280 (USNM).

Description. Length of fore wing 19 mm; wingspan 43 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-grey, root area light-brown, dark-brown stripe postdiscally, thin crescent brown stripe discally, brown semicircular spot apically, brown strokes and spots submarginally (in cubital cells), poorly expressed pattern of brown strokes throughout all wing area. Hind wing dark-brown, without pattern.

Male genitalia. Uncus long, with deep slit-like incisure, uncus halves of medium thickness, apically acute; gnathos arms reduced; valve of medium length, lanceolate, costal side slightly curved, large triangular harpe on sacculus (in its distal third); juxta ring-like with strongly hypertrophied abdominal side and double mastoid process on abdominal side; saccus cylindrical, long, with small notch apically; phallus equal to valve in length, thin, strongly curved in medium and distal thirds, apex slightly extended, with serrated edge.

Female unknown.

Diagnosis. The species clearly differs externally and in the male genital structure: the dark-brown hind wing without pattern; the ring-like juxta with strongly hypertrophied abdominal side and the double mastoid process abdominally; the thin phallus, strongly curved in medium and distal third, the poorly extended apex with serrated edge.

Distribution. French Guiana.

22. *Inguomorpha willinki* Naydenov, Yakovlev & Penco **sp. nov.**

<http://zoobank.org/579B8242-A56F-4616-A853-554A9D7032D4>

Figs 33, 55, 62

Material examined: Type material. Holotype ♂: **Argentina:** Jujuy Prov., 25 km NE Palma Sola, 23°48'53.7" S 64°12'44.7" W, 454 m, 23.x.2019, leg. R. Yakovlev, Genitalia preparation by Naydenov A. E. №308 (ZISP); Paratype 9 ♂♂: **Argentina:** 1 ♂, Jujuy Prov., 10 km SEE Caimancito, 23°44'38.6" S 64°31'09.2" W, 405 m, 25–26.x.2019, leg. R. Yakovlev, Genitalia preparation by Naydenov A. E. №312 (RYB); 2 ♂♂, Córdoba, La Paz, 1–15.i.1929, Col. C. Bruch (MACN); 3 ♂♂, La Rioja, Col. E. Giacomelli (MACN); 1 ♂, Patquia, 1947, leg. A. Willink (FML); 1 ♂, Guayapa, Mar 1955 (IMZA); 1 ♂, Dto. Castro Barros, Los Molinos, 28.i.2002, Coll. O. Di Iorio, (FCP).

Description. Length of fore wing 16–17 mm; wingspan 35–37 mm; antenna twice shorter than fore wing in length, bipectinate, setae twice longer than antenna stem diameter. Fore wing light-grey, brown portions basally, dark-grey spot apically, grey longitudinal strokes between medial veins (submarginally), grey portion and thin reticulated pattern in area of cubital veins (submarginally), fringe light-brown, unicolorous. Hind wing white with thin longitudinal strokes between veins.

Male genitalia. Uncus of medium length with slit-like incisure, dividing uncus into two halves (2 distal thirds), uncus halves narrowing to apices, apices acute, slightly diverged to sides; gnathos arms short, ribbon-like, not fused; gnathos reduced; valve short, costal and abdominal sides slightly curved, small tapered harpe in medium third of valve (on inner surface); juxta ring-like with hypertrophied lateral walls; saccus short, cylindrical, apically semicircular; phallus very short (twice shorter than valve), with spade-like extension apically, apex with tiny denticles on edge.

Female unknown.

Diagnosis. The species has several unique characters: the thin longitudinal lines between veins on all wings submarginally; the very short phallus (twice shorter than valve), the spade-like extension on the apex, the tiny denticles on the apex edge.

Distribution. Argentina (Jujuy, Córdoba, La Rioja)

Etymology. Abraham Willink (1920–1998) was a Dutch-Argentine entomologist. His main contributions were made on several families of Hymenoptera. He also contributed to the classification of biogeographical provinces of Latin America. Was an Indefatigable promoter of Entomology in Argentina.



Figure 3. Figures 24–33. Inguomorpha, adults: **24.** *I. racana* (Dognin, 1920) male, holotype of *Hypopta racana*, Argentina, Mendoza (USNM); **25.** *I. racana* (Dognin, 1920) male, holotype of *Anastomophleps claosticha*, Argentina, Mendoza (MHUB); **26.** *I. racana* (Dognin, 1920) female, holotype of *Givira isarba*, Argentina, La Rioja (USNM); **27.** *I. ramulosa* (Dognin, 1920) male, holotype, Argentina, La Rioja (USNM); **28.** *I. ramulosa* (Dognin, 1920) male, Argentina, San Juan, Pertili (MWM); **29.** *I. sandelphon* (Dyar, 1912) male, holotype, Mexico, Misantla (USNM); **30.** *I. scutulata* **sp. nov.**, male, holotype, Colombia, Huila (ZISP); **31.** *I. texasensis* **sp. nov.**, male, holotype, USA, Texas, Medina Co. (MWM); **32.** *I. triarctata* (Schaus, 1905) male, holotype, French Guiana, St. Jean, Maroni (USNM); **33.** *I. willinki* **sp. nov.**, male, holotype, Argentina, Jujuy Prov. (ZISP).

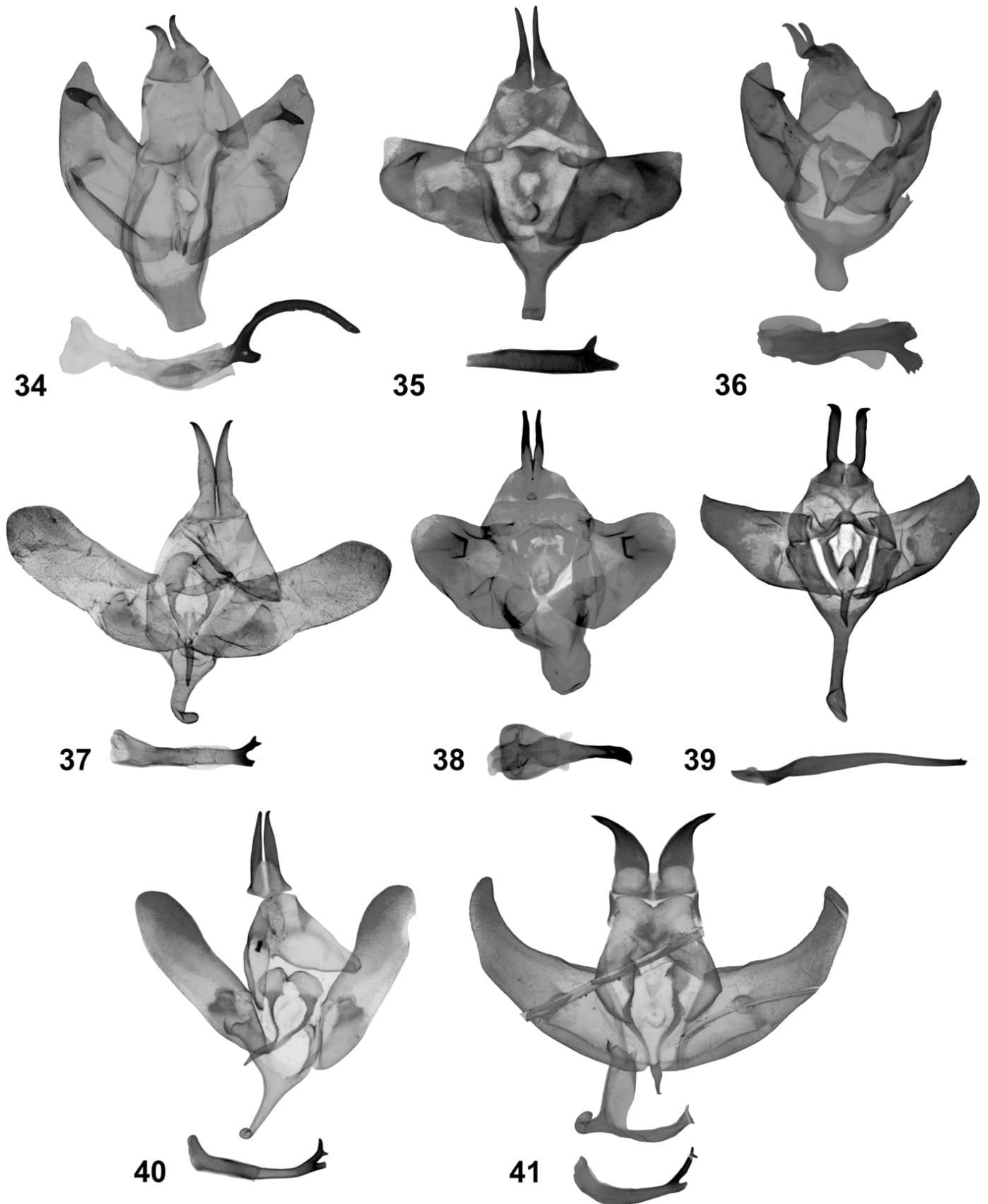


Figure 4. Figures 34-41. Inguomorpha, male, genitalia: **34.** *I. amundasa* (Druce, 1890), male, Peru, Huánuco, Yuyapichis, GenPrMWM: 36.999 (MWM); **35.** *I. arawaka* **sp. nov.**, male, holotype, Venezuela, Carabobo, Cordillera de la Costa, GenPrMWM: 28.457 (MWM); **36.** *I. arcifera* (Dyar, 1906), male, holotype, USA, Texas, Brownsville, Genitalia Slide by P. Gentili 85.290 (USNM); **37.** *I. bachmanni* **sp. nov.**, male, holotype, Argentina, Jujuy prov., Santa Barbara Mts., 12 km SW Palma Sola, Genitalia preparation by Naydenov A. E. №293 (ZISP); **38.** *I. basalis* (Walker, 1856), male, USA, Texas, Angelina

Co., GenPrMWM: 28.632 (MWM); **39.** *I. catarinea* **sp. nov.**, male, holotype, Brazil, Santa Catarina, S. Bento do Sul Sierra Rio Natal, GenPrMWM: 28.503 (MWM); **40.** *I. centrosoma* (Dyar, 1925), male, holotype, Mexico, Colima, Genitalia Slide by P. Gentili 85.221 (USNM); **41.** *I. clathrata* (Dognin, 1910), male, holotype, French Guiana, Si-Laurent du Maroni, Genitalia Slide by P. Gentili 85.224 (USNM).

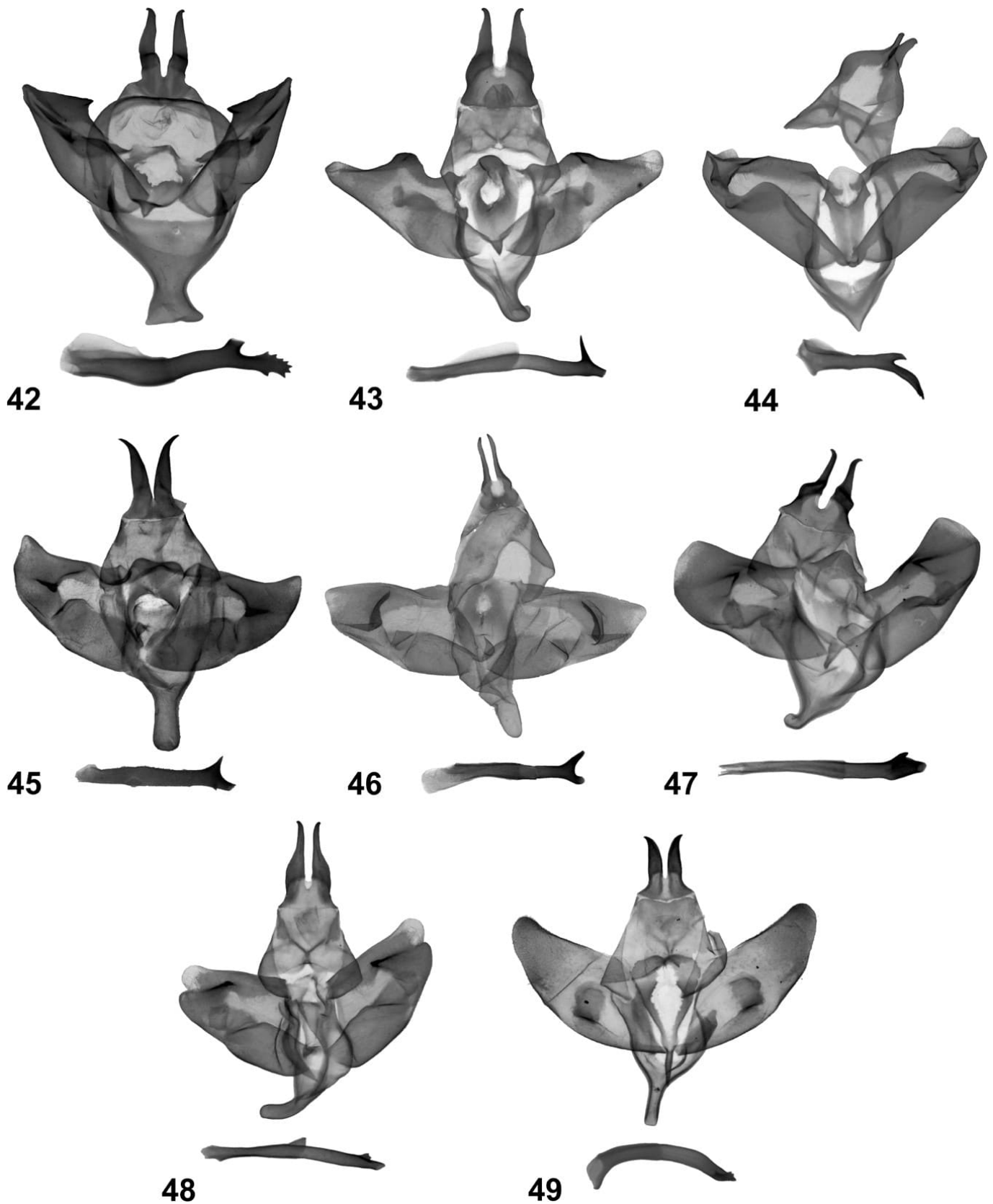


Figure 5. Figures 42-49. Inguromorpha, male, genitalia: 42. *I. clymene* Schaus, 1921, male, holotype, Guatemala,

Quirigua, Genitalia Slide by P. Gentili 85.225 (USNM); **43.** *I. crassiplaga* (Schaus, 1905) male, holotype, French Guiana, St. Jean, Maroni, Genitalia Slide by P. Gentili 85.227 (USNM); **44.** *I. entone* Dyar, 1940 male, holotype, Panama, La Chorrera, Genitalia Slide by P. Gentili 85.231 (USNM); **45.** *I. muisca* **sp. nov.**, male, holotype, Colombia, prov. Cundinamarca-Municipio El Oasis, GenPrMWM: 28.456 (MWM); **46.** *I. paraguaiica* **sp. nov.**, male, holotype, Paraguay, Dep. Kanindeyu Mbaracayu, Genitalia preparation by Naydenov A. E. №307 (ZISP); **47.** *I. polybia* (Schaus, 1892) male, holotype, Brazil, Petropolis, Genitalia Slide by P. Gentili 85.265 (USNM); **48.** *I. polybioides* (Schaus, 1901) male, holotype, Brazil, Parana, Castro, Genitalia Slide by P. Gentili 85.216 (USNM); **49.** *I. racana* (Dognin, 1920) male, holotype of *Hypopta racana*, Argentina, Mendoza, Genitalia Slide by P. Gentili 85.268 (USNM).

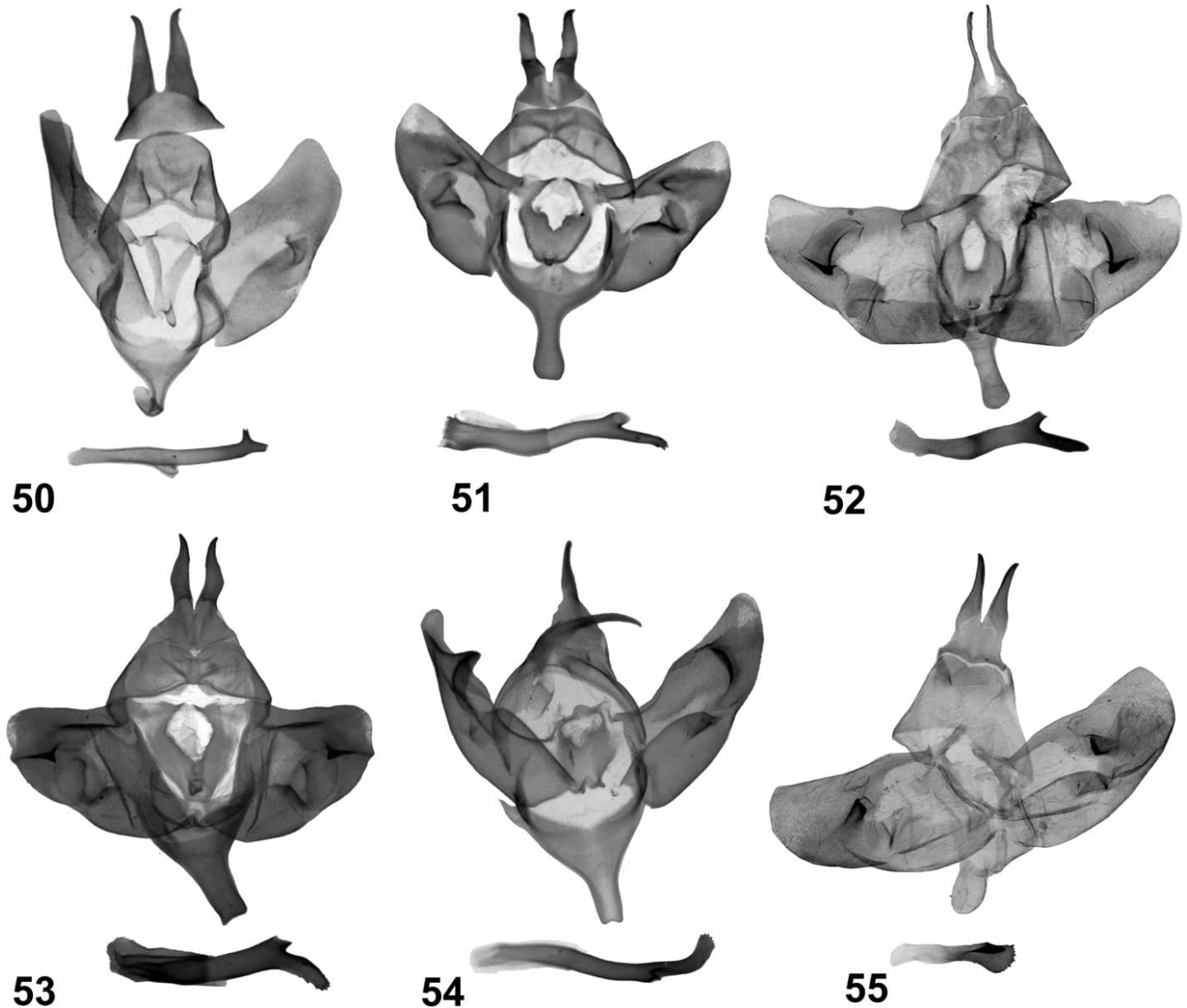


Figure 6. Figures 50-55. *Inguromorpha*, male, genitalia: **50.** *I. ramulosa* (Dognin, 1920) male, holotype, Argentina, La Rioja, Genitalia Slide by P. Gentili 85.269 (USNM); **51.** *I. sandelphon* (Dyar, 1912) male, holotype, Mexico, Misantla, Genitalia Slide by P. Gentili 85.273 (USNM); **52.** *I. scutulata* **sp. nov.**, male, holotype, Colombia, Huila, Genitalia preparation by Naydenov A. E. №317 (ZISP); **53.** *I. texasensis* **sp. nov.**, male, holotype, USA, Texas, Medina Co., GenPrMWM: 28.623 (MWM); **54.** *I. triarctata* (Schaus, 1905) male, holotype, French Guiana, St. Jean, Maroni, Genitalia Slide by P. Gentili 85.280 (USNM); **55.** *I. willinki* **sp. nov.**, male, holotype, Argentina, Jujuy Prov., Genitalia preparation by Naydenov A. E. №308 (ZISP).

Discussion

Thus, the genus *Inguromorpha* includes 22 species, distributed from southern states of the US to the central part of Argentina. Most of the species have a local (endemic) distribution. The significant morphological hiatuses between all the species of the genus attract attention, which

probably is a feature of high species differentiation in the genus.

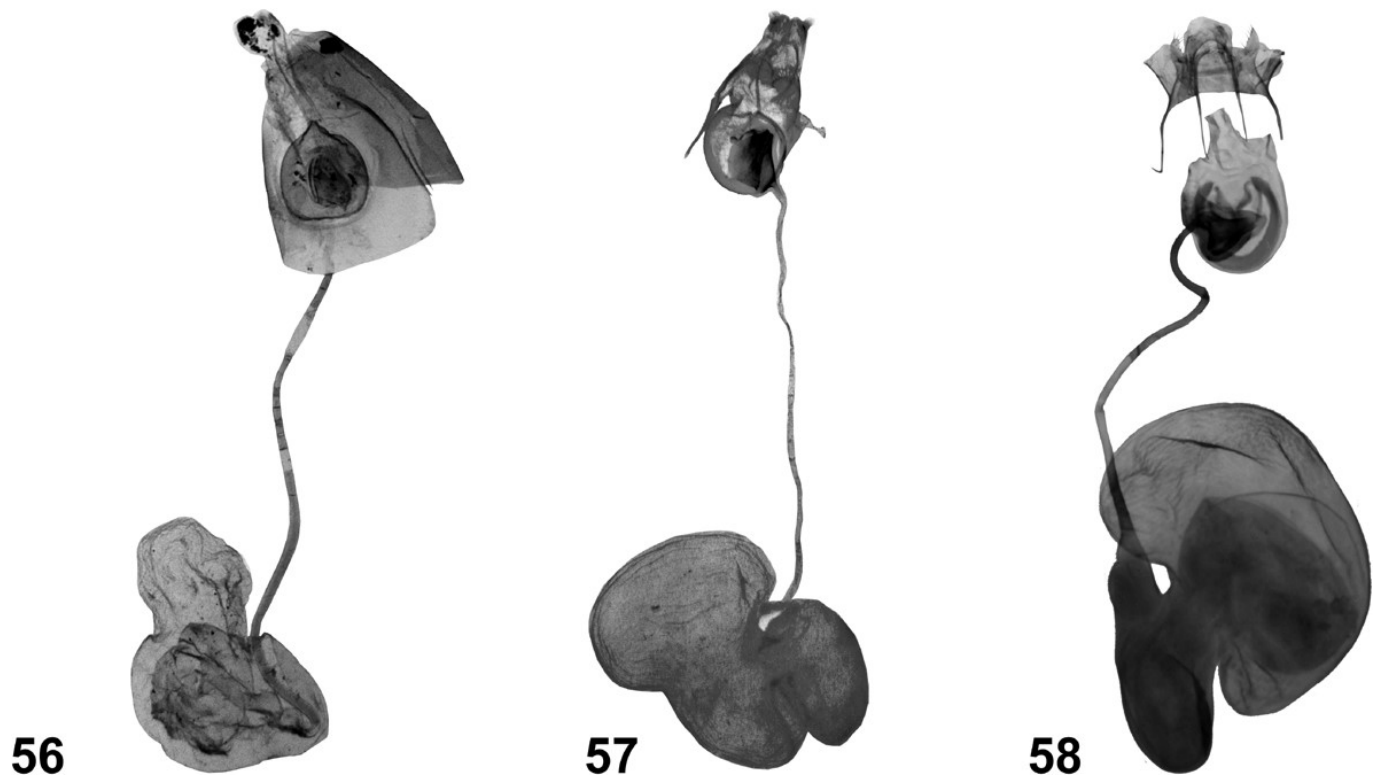


Figure 7. Figures 56-58. Inguomorpha, female, genitalia: 56. *I. paraguaica* **sp. nov., paratype, Paraguay, Dep. Alto Parana, Estancia Dimas, Genitalia preparation by Naydenov A. E. №306 (RYB); 57. *I. polybia* (Schaus, 1892) Brazil, Bahia, Umgebung Camacan, GenPrMWM: 28.581 (MWM); 58. *I. racana* (Dognin, 1920) female, holotype of *Givira isarba*, Argentina, La Rioja, Genitalia Slide By P. Gentili 85.249 (USNM).**

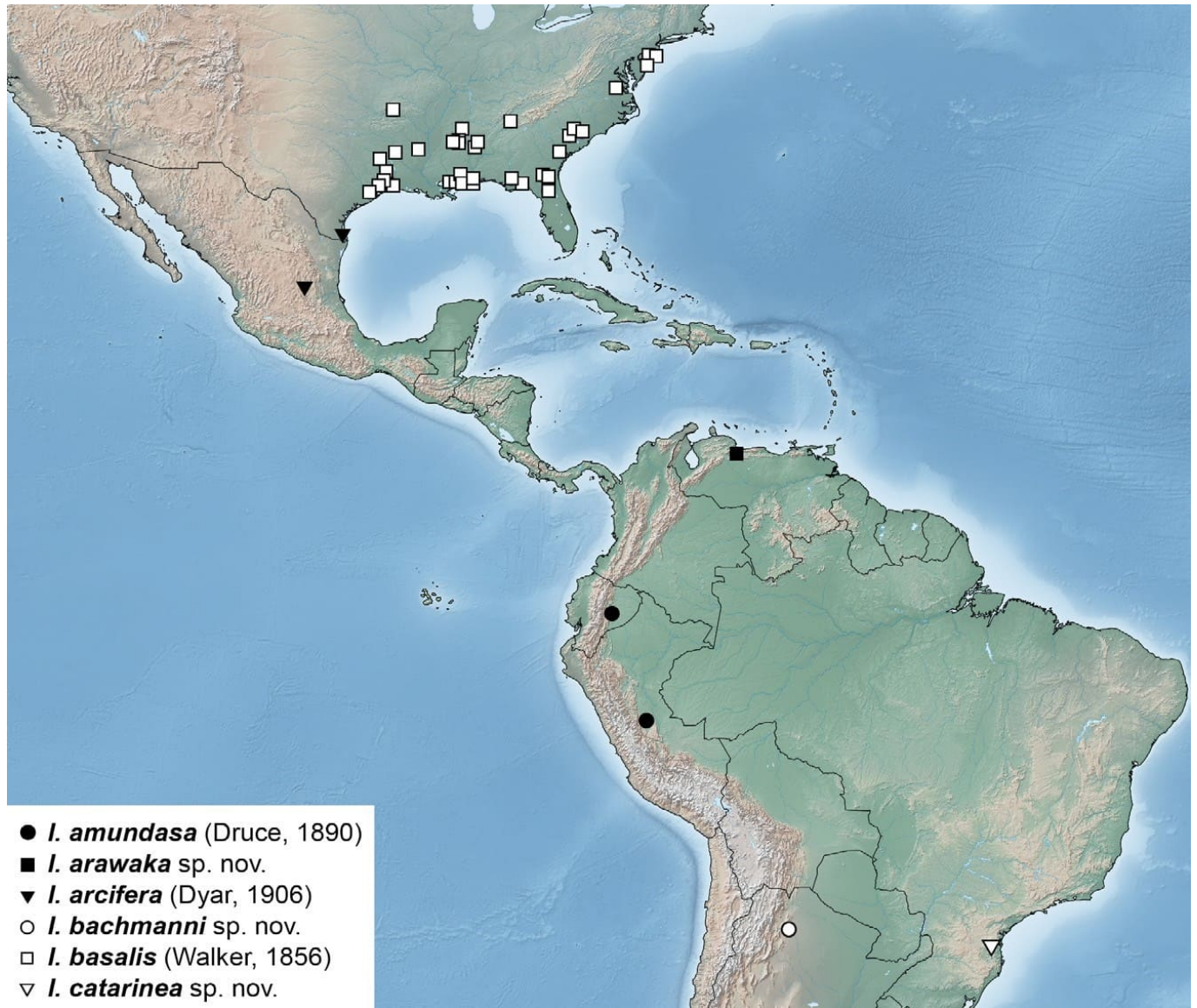


Figure 8. Figure 59. Map of distribution species of *Inguromorpha*: *I. amundasa*, *I. arawaka*, *I. arcifera*, *I. bachmanni*, *I. basalis*, *I. catarinea*.

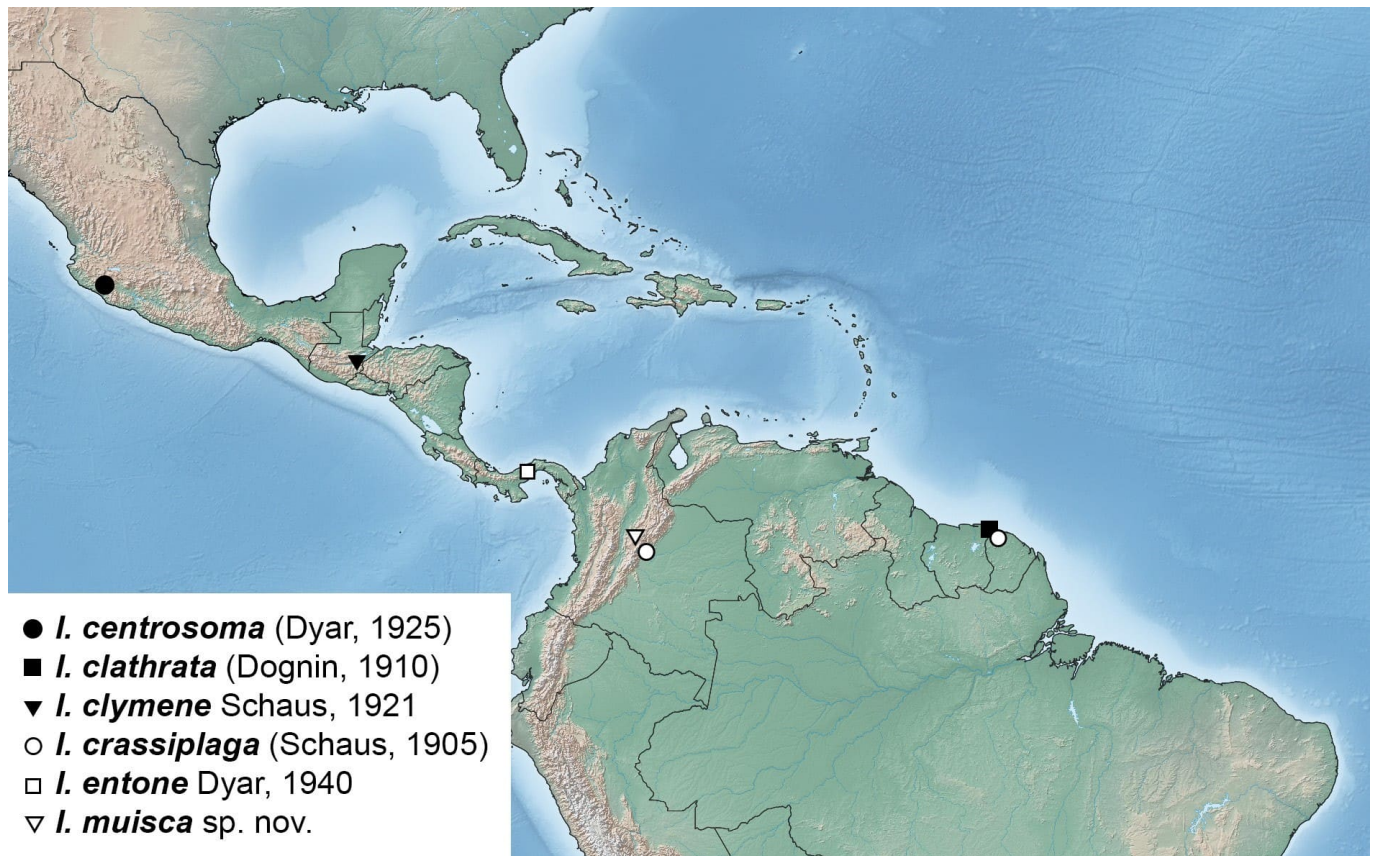


Figure 9. Figure 60. Map of distribution species of *Inguromorpha*: *I. centrosoma*, *I. clathrata*, *I. clymene*, *I. crassiplaga*, *I. entone*, *I. muisca*.

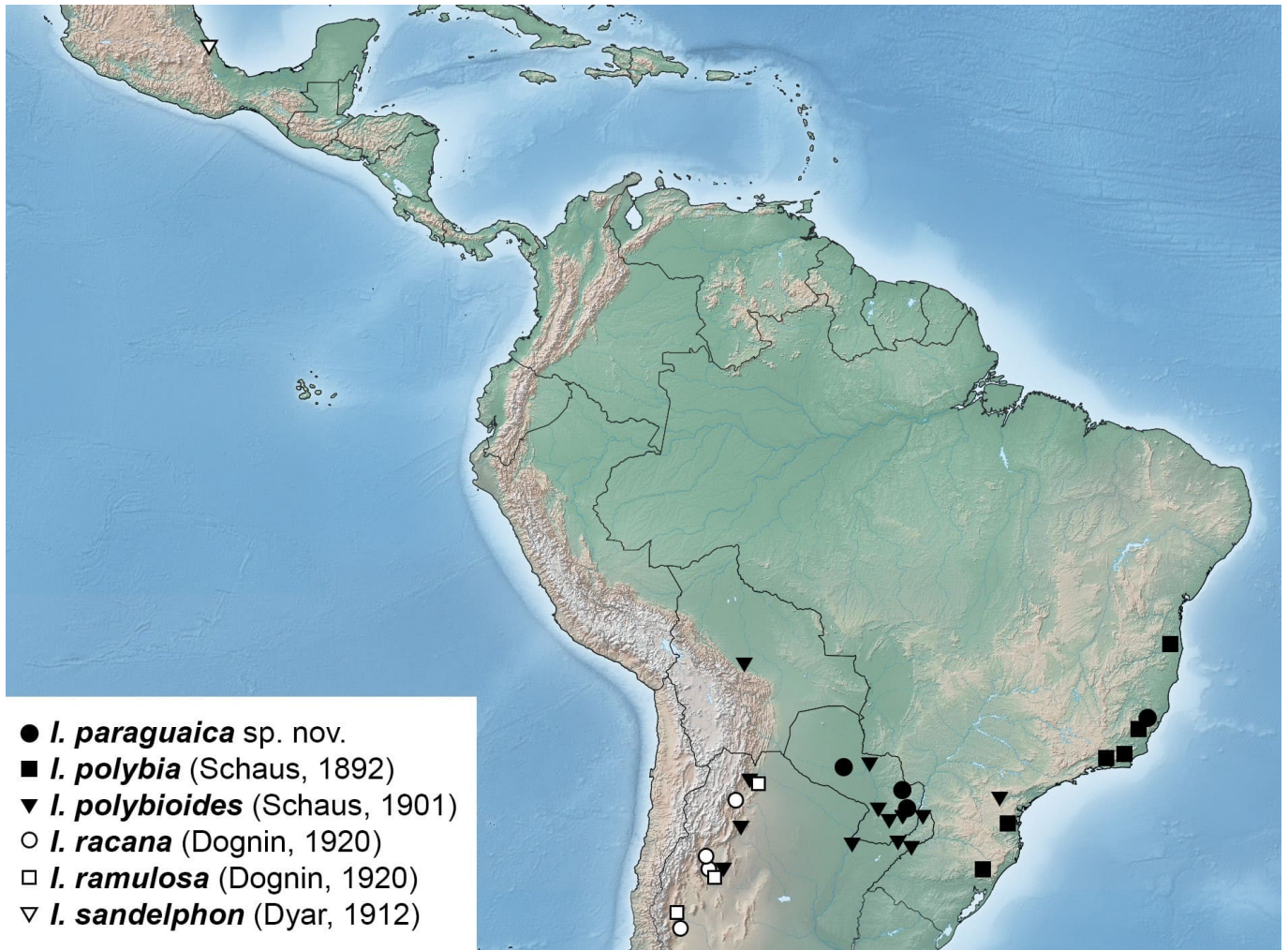


Figure 10. Figure 61. Map of distribution species of *Inguromorpha*: *I. paraguaica*, *I. polybia*, *I. polybioides*, *I. racana*, *I. ramulosa*, *I. sandelphon*.



Figure 11. Figure 62. Map of distribution species of Inguromorpha: *I. scutulata*, *I. texasensis*, *I. triarctata*, *I. willinki*.

Acknowledgements

The authors express their gratitude to Wolfram Mey (Berlin, Germany), Joel Minet (Paris, France), Geoff Martin and Alessandro Giusti (London, UK), Pablo Dellape and Jorge Salas (La Plata, Argentina), Pablo Mullieri, Johanna V. Rodriguez-Ramirez and Gastón Zubarán (MACN), Emilia Constanza Perez (Tucumán, Argentina), Esteban Daniel Saini and Albano Giudici (IMZA) and to Thomas Witt, Axel Hausmann, Ulf Buchsbaum and Harald Sulak-Wildenauer (Munich, Germany) for creating a comfortable environment during the author's internships in the MWM, NBCL and NHMUK.

References

Barnes W, McDunnough JH (1911) Revision of the Cossidae of North America. Contributions to the

Natural History of the Lepidoptera of North America 1: 1-36.

Dognin P (1910) Hétérocères nouveaux de l'Amérique du Sud. Fascicule I. Oberthür & Fils, Rennes: 1-46.

Dognin P (1920) Hétérocères nouveaux de l'Amérique du Sud Fascicule XVIII. Oberthür & Fils, Rennes: 1-13.

Donahue JP (1995) Cossidae. In: Heppner, J.B. (ed.), Atlas of Neotropical Lepidoptera. Checklist: Part 2. Hyblaeoidea, Pyraloidea, Tortricidae. Association for Tropical Lepidoptera. Gainesville. pp. 122-126.

Druce H (1890) Descriptions of some new Species of Lepidoptera Heterocera from Central and South America. Proceedings of the Zoological Society of London 1890: 493-520.

Dyar HG (1898) *Inguromorpha slossoni* Hy. Edw. Entomological News 9: 213-214.

Dyar HG (1905) New Genera of South American Moths. Proceedings of the United States National Museum 29: 173-178.

Dyar HG (1906) Descriptions of new North American moths and larvae. Science Bulletin of the Museum of the Brooklyn Institute of Arts and Sciences 1 (8): 193-201.

Dyar HG (1912) Descriptions of new species and genera of Lepidoptera, chiefly from Mexico. Proceedings of the United States National Museum 42: 39-106.

Dyar HG (1913) Descriptions of new Lepidoptera, chiefly from Mexico. Proceedings of the United States National Museum 44: 279-324.

Dyar HG (1925) Some new American moths (Lepidoptera). Insecutor Inscitiae Menstruus 13(1/3): 1-19.

Dyar HG (1940) Cossidae. In: Seitz, A. Die Gross-schmetterlinge der Erde, vol. 6, die amerikanischen Spinner und Schwärmer, Alfred Kernen, Stuttgart, 1265-1285.

Edwards H (1888) New Genera and Species of North American Moths. Entomologica Americana 3: 181-185.

GBIF.org (12 March 2023) GBIF Occurrence Download <https://doi.org/10.15468/dl.z3a5vt>

Hodges RW (1983) Cossidae. In: Hodges, R.W., Dominick, T., Davis, D.R., Ferguson, D.C., Franclemont, J.G., Munroe, E.G. & J.A. Powell (Eds.). Check List of the Lepidoptera of America North of Mexico. E.W. Classey Ltd., and The Wedge Entomological Research Foundation, London, 30-31.

Kristensen NP (2003) Lepidoptera, Moths and Butterflies. Vol. 2. Morphology, Physiology, and Development. Handbuch der Zoologie de Gruyter 4. Arthropoda: Insecta. Part 36. Walter de Gruyter, Berlin and New York, xii + 564 pp.

Lafontaine JD, Mikkola K (1987) Lock-and-key system in the inner genitalia of Noctuidae (Lepidoptera) as taxonomic character. Entomologiske Meddelelser 55: 161-167.

Naydenov AE, Yakovlev RV, Penco FC, Sinyaev VV (2020) New data on Neotropical Carpenter-Moths of Subfamily Hypoptinae Neumoegen & Dyar, 1894 (Lepidoptera: Cossidae). II. A review of the genus *Dolecta* Herrich-Schäffer, [1854], with description of seventeen new species. Ecologica

Montenegrina 35: 82–114. <https://doi.org/10.37828/em.2020.35.7>

Naydenov AE, Yakovlev RV, Penco FC (2022a) *Gentiliocossus* — new genus of Hypoptinae (Lepidoptera: Cossidae). Russian Entomological Journal 31 (1): 67–70. <http://dx.doi.org/10.15298/rusentj.31.1.13>

Yakovlev RV, Penco FC (2022b). A new monotypic genus of the subfamily Hypoptinae Neumoegen et Dyar, 1894 (Lepidoptera: Cossidae) from Brazil. Russian Entomological Journal 31 (2): 179–181. <http://dx.doi.org/10.15298/rusentj.31.2.15>

Neumoegen B, Dyar HG (1894) Preliminary revision of the Bombyces of America north of Mexico. Journal of the New York Entomological Society 2: 147–174.

Penco FC, Yakovlev RV (2015) Lista comentada de los Cossidae (Lepidoptera) de Argentina [Commented list of Cossidae (Lepidoptera) of Argentina]. Historia Natural (Universidad Maimónides), Tercera Serie 7 (2): 67–76.

Penco FC, Yakovlev RV, Naydenov AE (2019a) New species of genus *Breyeriana* Orfila, 1957 (Lepidoptera: Cossidae: Hypoptinae) from Argentina. Ecologica Montenegrina 20: 114–118. <http://dx.doi.org/10.37828/em.2019.20.11>

Penco F, Yakovlev RV, Naydenov AE, Witt Th J (2019b) Two new species of the genus *Givarbela* Clench, 1957 (Lepidoptera: Cossidae: Hypoptinae) from South Neotropics. Zootaxa 4577 (3): 596–600. <http://dx.doi.org/10.11646/zootaxa.4577.3.13>

Penco FC, Yakovlev RV, Naydenov AE (2020) A new Genus and new Species of Carpenter-Moths (Lepidoptera: Cossidae: Hypoptinae) from southern Argentina // Russian entomological Journal 29 (2): 210–213. <http://dx.doi.org/10.15298/rusentj.29.2.16>

Penco FC, Yakovlev RV, Naydenov AE (2022) New data on Neotropical Carpenter-Moths of Subfamily Hypoptinae Neumoegen & Dyar, 1894 (Lepidoptera: Cossidae). IV. A review of the genus *Hypopta* Hübner, 1818. Ecologica Montenegrina 51: 53–63. <https://dx.doi.org/10.37828/em.2022.51.6>

Schaus W (1892) Descriptions of new species of Lepidoptera Heterocera from Brazil, Mexico, and Peru. Part II. Proceedings of the Zoological Society of London 1892: 318–340.

Schaus W (1901) New Species of Heterocera from Tropical America, Parts 1 & 2. Journal of The New York Entomological Society 9: 40–48, 73–77.

Schaus W (1905) Descriptions of new South American moths. Proceedings of the United States National Museum 29 (1420): 179–345.

Schaus W (1921) New species of Lepidoptera in the United States National Museum. Proceedings of the United States National Museum 59 (2372): 349–396.

Schaus W (1934) New Species of Heterocera from Tropical America. The Annals and Magazine of Natural History (10) 14: 79–115.

Schoorl JW (1990) A phylogenetic study on Cossidae (Lepidoptera: Ditrysia) based on external adult morphology. Zoologische Verhandelingen 63: 4–295.

Walker F (1856) List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. Part VII. British Museum (Natural History), London 7: 1509–1808.

Yakovlev RV, Naydenov AE, Penco FC (2019) New data on Neotropical Carpenter-Moths of Subfamily Hypoptinae Neumoegen & Dyar, 1894 (Lepidoptera: Cossidae). I. New taxa with bifurcated uncus. *Ecologica Montenegrina* 26: 4–13. <http://dx.doi.org/10.37828/em.2019.26.2>

Yakovlev RV, Penco FC, Naydenov AE (2020a) Status and revision of the genus *Philanglaus* Butler, 1882 (Lepidoptera: Cossidae: Hypoptinae) from Southern Peru and Chile. *Russian Entomological Journal* 29 (4): 428–431. <http://dx.doi.org/10.15298/rusentj.29.4.11>

Yakovlev RV, Naydenov AE, Penco FC (2020b) New data on Neotropical Carpenter Moths of Subfamily Hypoptinae Neumoegen & Dyar, 1894 (Lepidoptera: Cossidae). III. *Laberlia* - a new genus from Northern and Central Andean Mountains. *Ecologica Montenegrina* 38: 18–24. <http://dx.doi.org/10.37828/em.2020.38.4>

Yakovlev RV, Naydenov AE, Penco FC (2022) Catalogue of the genus *Givarbela* Clench, 1957 (Lepidoptera: Cossidae: Hypoptinae) with description of one new species from Paraguay. *Ecologica Montenegrina* 51: 47–52. <https://dx.doi.org/10.37828/em.2022.51.5>