

**Descriptions and notes on Neotropical *Hilarographa* ZELLER
(Lepidoptera: Tortricidae)**

JÓZEF RAZOWSKI

Institute of Systematics and Evolution of Animals PAS, Sławkowska 17, 31-016 Kraków,
Poland, e-mail: Razowski@isez.pan.krakow.pl

ABSTRACT. The number of the *Hilarographa* species increased from 16 to 21; six species are described as new: *H. charagmotorna* sp. n., *H. mariannae* sp. n., *H. iquitosana* sp. n., *H. parambae* sp. n., and *H. belizeae* sp. n. Unknown genitalia of 4 species are illustrated.

KEY WORDS: Tortricidae, Hilarographini, new species, Neotropics.

INTRODUCTION

Since description of the tribe Hilarographini (DIAKONOFF 1977) several papers occurred in a comparatively short time. They concerned chiefly the Oriental and Palaeartic faunas. Then HEPPNER published the synopsis of the world fauna (HEPPNER 1982b) and a revision of American *Thaumatogeta* (HEPPNER 192a). During the last 25 years there was no continuation of their studies except for some papers by DIAKONOFF but none dealing with the Neotropics. Hence, I am returning to my manuscript from before 20 years completing it with some new data.

HEPPNER (1982b) catalogized some colourful species of the genera more or less similar to *Hilarographa*, incl. *Mictopsichia* in Hilarographini.

Hilarographa and *Thaumatogeta* strongly differ from *Mictopsichia* which in the World Catalogue by BROWN (2005) were included in the "new tribe 3" of Tortricinae. *Mictopsichia* and its allies are excluded from this paper.

Material

This paper is based on the material curated by the Natural History Museum, London and the Carnegie Museum, Pittsburgh. The specimens have been collected in numerous countries from Mexico to Brazil, chiefly in Brazil and Peru. The specimens examined have been compared with the type material in the London Museum.

The types of the new species are deposited in the above mentioned museums.

The adults are published in colour because of the importance of the pattern in hilarographines which often show rather slight genital differences.

Abbreviations used in the text are as follows: CMNH - the Carnegie Museum Natural History, Pittsburgh, GS - genitalia slide, NHML - the Natural History Museum London, TL - type locality, T. sp. - type species.

Acknowledgements

The author thanks Mr. Kevin R. TUCK, London and Dr. John RAWLINS, Pittsburgh for providing the material for study and making possible my work in their institutions. Thanks are also due to Dr. Łukasz PRZYBYŁOWICZ and Mr. Witold ZAJDA, Kraków for dissection of the moths, the photographs of the adults and genitalia and the arrangement of plates.

SYSTEMATICS

Hilarographa ZELLER, 1877

Hilarographa ZELLER, 1877, Horae Soc. Entomol. Ross., **13**: 187. T. sp.: *Phalaena (Tortrix) swederiana* STOLL, 1790.

Distribution

In the New World the genus is known from Mexico to Peru and Brazil. HEPPNER (1982b) lists 17 species, BROWN (2005) - 16 species. At present this number sounds 21.

Hilarographa charagmotorna sp. n.

(Fig. 19)

Diagnosis

This species is similar and very closely related to *Hilarographa bellica* MEYRICK, 1912 from Dutch Guiana, *charagmotorna* distinct by very long uncus, hardly broadening postbasally.

Description

Male genitalia (Figs 1, 2). Basal part of uncus broad, helmet-shaped, posterior part long, rod-like; socius moderately large, rounded apically; gnathos vestigial, membranously connected to tegumen; hamus long, slender, pointed; valva broad, rounded posteriorly; sacculus simple, concave medially; transtilla plate-shaped strongly tapering medially; juxta short; aedeagus rather long, weakly sclerotized terminally, with reduced coecum penis and long rod-like, pointed cornutus.

Female genitalia (Fig. 15). Papilla analis moderately large; apophyses rather short; anteostial part of sterigma small, with angulate ventrolateral corners; postostial sterigma submembranous; antrum broader than distal part of ductus bursae, minutely spined, with weak inner sclerite; ductus bursae long; signum consisting of numerous, slender spines.

Material examined

Holotype male: "STEINBACH Acc, 5046, Cuatro Ojos, Bol[ivia], XI. 1913", GS 12364; paratype, same label, GS 12365. Coll. CMNH.

Etymology

The name refers to the colouration of the moth; Greek: charagma - mark, Latin: torno - I turn.

Hilarographa plurimana (WALKER, 1863)

(Fig. 20)

Description

Male genitalia (Figs 3, 4). Uncus long, slender, club-shaped; socius fairly broad; hamus slightly longer than hamus, very slender; valva elongate-oval with costa convex postmedially; sacculus slender, simple, slightly convex; transtilla slender, tapering terminally, rounded apically, with rows of small thorns; aedeagus brown to middle, then slender, membranous ventrally; coecum penis constricted basally.

Female genitalia (Fig. 16). Papilla analis moderate; sterigma submembranous; antrum broader than ductus bursae, both membranous; signum small, finely spined, slightly variable in size.

Material examined

Holotype male and four specimens from Tefé, Brazil (with abdomen missing) and Jurimaguas, Peru collected in March, all by PARISH (coll. NHML) and one female from Iquitos, Peru, 18.V. 1920 (coll. CMNH).

Remarks

This species was described from Ega, Amazonas, Brazil. This is a female with genitalia on slide 20913 [NHML].

Hilarographa mariannae sp. n .

(Fig. 21)

Diagnosis

Externally similar to *H. hexapeda* MEYRICK, 1913 from British Guiana and *H. methystis* Meyrick from Peru; all these species have orange hindwing with subterminal brownish fascia but *mariannae* with marbled tornal area of forewing and dark edged costal interfasciae. Male genitalia of *mariannae* characterize with concave top of median part of transtilla and simple sacculus (in *methystis* with ventroterminal projection) and uncus (in *hexapeda* with two dorsal processes).

Description

Wing span 14 mm. Head brownish, rust orange lateroposteriorly; labial palpus white cream, cream terminally; thorax olive brown with creamish lines. Forewing strongly expanding terminad. Ground colour orange if form of paler and darker lines, five long, dark edged costal lines, three radial in basal area and four from dorsum; subapical line short, cream; some fasciae accompanied by refractive markings, tornal are orange cream with fine parallel (some inconspicuous) brown lines; ocellus ill-defined with one brown dot near end of termen. Cilia brown interrupted orange beneath apex, Hindwing orange with slight brownish admixture; anal area and submarginal diffuse fascia brown; cilia orange with brown basal line.

Male genitalia (Figs 5, 6). Uncus strong, slender; socius somewhat shorter than hamus, this last broadening postbasally; valva rather broad; sacculus simple; juxta large, triangular, concave apically; aedeagus rather slender with numerous thick thorns.

Female not known.

Material examined

Holotype male: "Castro, Parana, S. Brasil, JONES 1898, [Nr] 8854"; GS 20914 [NHML]. Coll. NHML.

Etymology

This species is named for Dr. Marianne HORAK, Canberra in recognition of her outstanding work on the higher classification of Tortricidae.

***Hilarographa iquitosana* sp. n.**

(Fig. 22)

Diagnosis

Very distinct externally as having white ground colour of the hindwing; in the male genitalia *iquitosana* is closest to *H. euphronica* MEYRICK, 1920 from Brazil (Rio Trombetas) but the new species is distinct in very slender uncus and broad aedeagus.

Description

Wing span 19 mm. Head brown, thorax concolourous with weak orange strips. Forewing moderately expanding terminad, costa bent postmedially. Ground colour orange, in costal part cream consisting of slender strips separated from one another by broad brown fasciae; basal strips indistinct, remaining ones obliquely from costa connecting slightly curved dorsal strips in median cell; tornal area with some three brown lines and four black subterminal spots. Cilia brown, in tornal third whitish. Hindwing white in costal, submedian, and anal parts; remaining area dark brown; cilia whitish, in apex part tinged brown, with basal line brown.

Male genitalia (Figs 7, 8). Uncus proportionally long, slender, with broad base; socii broad, basally fused with hami; hamus slender, curved apically; vinculum a slender band broadening medially; valva rather broad; sacculus simple; transtilla deeply concave apically, minutely spined posteriorly, submembranous ventrally; aedeagus moderately broad, finely thorny posteriorly; coecum penis small.

Female not known.

Material examined

Holotype male: "Iquitos (STUART [18]93"; GS 20905 [NHML]. Coll. NHML.

Etymology

The specific epithet refers to the type locality.

***Hilarographa quinquaestrigana* (WALKER, 1863)**

(Fig. 23)

Description

Male genitalia (Figs 9, 10). Uncus rather short, slender, not expanding terminad; socius as long as hamus, rounded terminally; hamus distinctly sclerotized, slender in posterior part; valva oval with outer slit; sacculus simple, slender; median part of transtilla forming

two spiny terminal lobes; vinculum short, broad; aedeagus slender, weakly sclerotized posteriorly; coecum penis small, slender.

Female not known.

Material examined

Holotype male (not dissected) and one male labelled Amazonas, Brazil, SAUNDERS and two specimens from Amazonas, Brazil (coll. NHML).

Remarks

The holotype of *Carpocapsa quinquaestrigana*, from São Paulo, Brazil is housed in the NHML. This is a not dissected male. Its synonymy (cf BROWN 2005) *Carpocapsa firmana* FELDER & ROGENHOFER, 1875 is from Amazons, Brazil is not examined genitally either. It is preserved also in NHML.

***Hilarographa refluxana* (WALKER, 1863)**

Remarks

This species is from Rio de Janeiro, Brazil. The holotype, a not dissected female in the collection of NHML. It is easily distinguished from the "lectotype" of *H. ribbei* ZELLER, 1877 from Panama in orange ground colour of dorsal half of the forewing and brown lines perpendicular to dorsum.

***Hilarographa ribbei* ZELLER, 1877**

Remarks

In the collection of the NHML there is one specimen named as lectotype with abdomen missing. It characterizes with eight oblique, creamish dorsal lines on the brownish ground (in the original description there are two yellowish blotches on the black-brown ground colour). This specimen is from Panama. The true holotype is from Chiriqui, Panama. It is deposited in the Museum für Naturkunde der Humboldt Universität Berlin but for many years is lent, hence not accessible.

***Hilarograapha belizeae* sp. n.**

(Fig. 24)

Diagnosis

This species resembles *refluxana* but *belizeae* lines from dorsum are cream and distinctly oblique whilst in *refluxana* they are rather orange, slightly oblique.

Description

Wing span 16,5 mm. Head creamish, tinged brownish laterally; labial palpus ca 2, cream with brownish mark near middle; thorax olive brownish with cream lines. Forewing weakly expanding terminally; termen convex. Ground colour cream represented by lines from costa and dorsum; terminal area orange rust with some three blackish spots; dorsal nines (seven or eight) differing in shape and length. Cilia brownish. Hindwing orange brown, browner on periphery; cilia paler, at apex and median area cream.

Male genitalia (Figs 11, 12). Uncus long, slender, slightly expanding terminally; hamus almost as long as socius; valva broad; sacculus slender, weakly convex; median part of transtilla very large weakly tapering terminad, with a few small thorns; aedeagus large, tapering terminad, with dorso-postmedian rod shorter than the main part; coecum penis small slender.

Female not known.

Material examined

Holotype male: "Belize: Upper Raspaculo Valley 116.49'N 88.48'W 445 m, At light, 17 May 1993, Marcus MATTHEWS"; GS 31829. Paratypes, three identically labelled males. Coll. NHML.

***Hilarographa parambae* sp. n.**

(Fig. 25)

Diagnosis

Externally this species is similar to *H. thaliarcha* MEYRICK, 1920 from Pará, Brazil but differs from it in the presence of costobasal strip of ground colour and slender brown terminal belt of the hindwing. *H. parambae* is closely related to *H. bryonota* MEYRICK, 1921 from Peru and *H. quinquaestriana* (with a similar, bilobed transtilla) but differs from them chiefly in long, slender aedeagus.

Description

Wing span 16 mm (female 16 mm). Head brownish, orange medially; labial palpus cream ochreous, whitish terminally. Thorax brownish with orange strips. Forewing rather weakly expanding terminally; costa almost straight; termen convex near middle. Ground colour orange cream, in costal area cream; vertical strips in basal area, the largest along costa; two cream strigulae at middle, two other subapically, one orange line before middle, all separated by brown fasciae (some with long refractive markings; elongate-triangular mark from postbasal part of dorsum, two smaller interfasciae from mid-dorsum area followed by spots in median cell; broad interfascia from before tornus; ocellar area orange with some three brown lines and two brown spots at termen. Cilia brown, more cream at tornus. Hindwing cream orange, brownish terminally, orange brown in anal area. Cilia orange cream, brownish in apex area.

Female darker than male with weak pale elements in basal area of forewing and brown cilia, and with broad brown peripheral and anal marking.

Male genitalia (Figs 13, 14). Uncus slender, hamus similar; socius large, rounded terminally; vinculum slender, rounded apically; valva broad to end of sacculus, then slightly tapering; transtilla large, thorny, with two terminally rounded lobes; aedeagus long, slender, with long, thorny dorsoposteriorly rod like sclerite; coecum penis small.

Female genitalia (Fig. 17). Sterigma weakly sclerotized; antrum membranous, tapering proximally, with weak inner sclerites; ductus bursae long, slender; ductus seminalis from base of ductus bursae; accessory bursa from a scobinate field in median area of corpus bursae.

Material examined

Holotype male: "Paramba, Ecuador, III. 1897, RSNBG 68483"; GS 20892 [NHML]; paratype female, same label but Nr 68484 and GS 20891 [NHML]. Coll. NHML.

Etymology

The name refers to the type locality.

Hilarographa xanthotoxa MEYRICK, 1920

(Fig. 26)

Description

The female genitalia of the specimen from Pará (Fig. 18). Proximal part of sterigma small; apophyses long; sterigma weakly sclerotized except for small transverse proximal sclerite; antrum slightly broader than posterior part of ductus bursae; ductus bursae very long, venry slender; ductus seminalis originating at base of this last; signum a small rounded patch of thorns just distally from base of accessory bursa.

Material examined

Two females from Benevides, Pará and one female from Arima, Rio Purus, Brazil; one specimen from Cuatro Ojos, Bolivia collected in December (CMNH). Holotype and one specimen from Teffé, Brazil (NHML).

Remarks

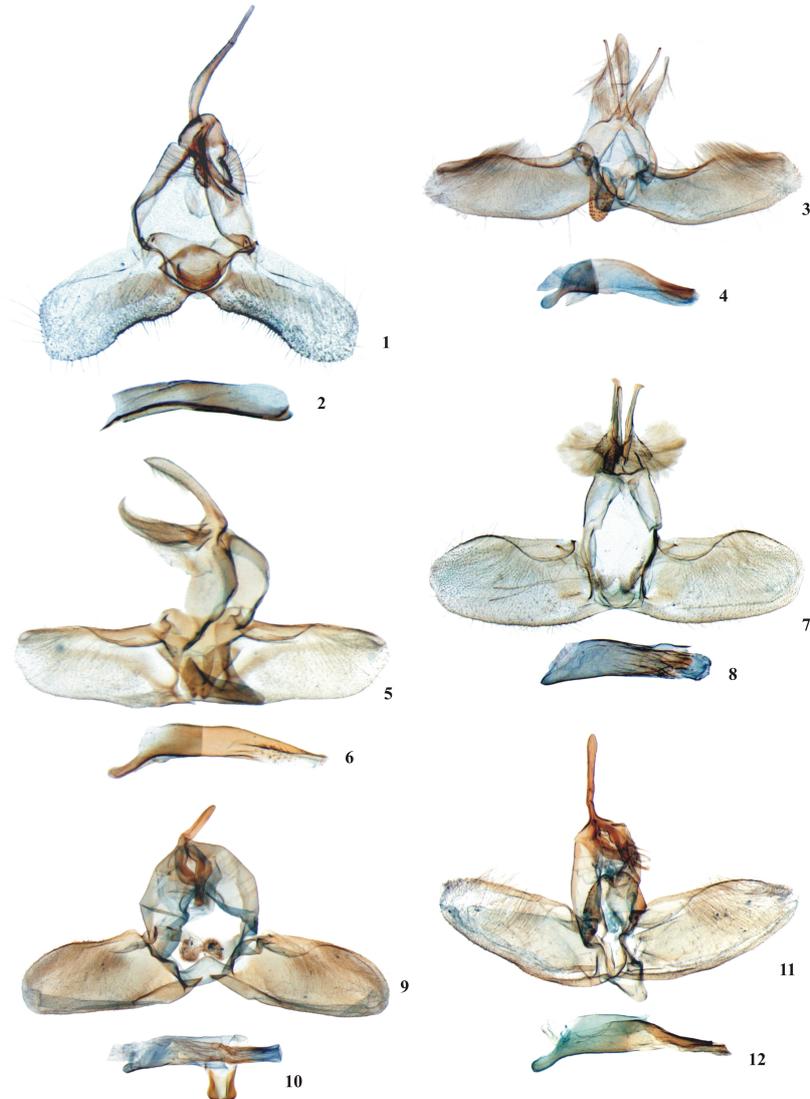
This species is very similar to *H. swederiana* (STOLL, 1791) described from Surinam. The type *swederiana* is most probably lost and I had no opportunity to examine any specimen from that country for a comparison. *Grapholitha trabeana* FELDER & ROGENHOFER, 1875, from Amazonas, Brazil is usually regarded as a synonymy of *swederiana* but has not been compared to *xanthotoxa*. The holotype of *xanthotoxa* (cf. CLARKE 1969) is a male thus a comparison of its genitalia with examined specimens is not possible.

Hilarographa dulcisana* (WALKER, 1863)*Material examined**

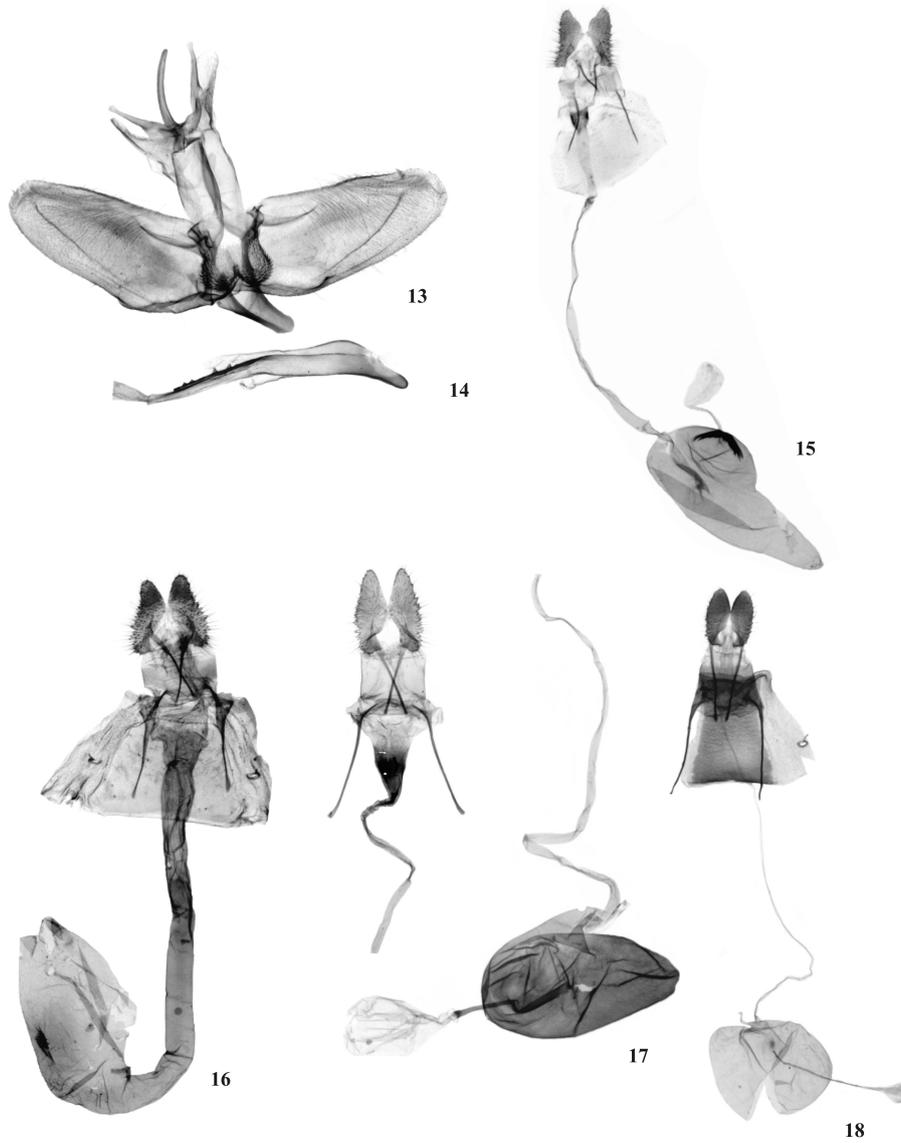
The lectotype, a male labelled "Ega" in the collection of NHML.

Remarks

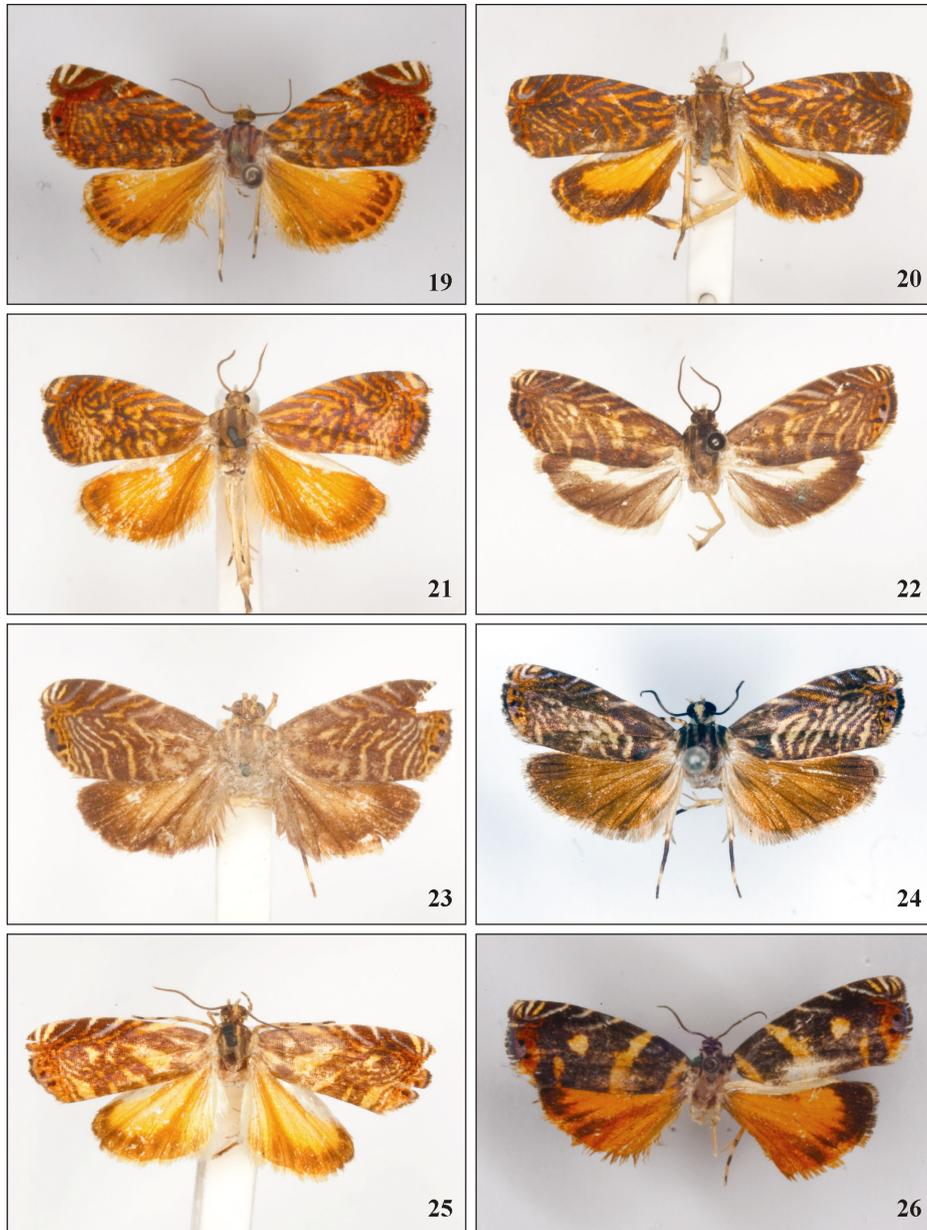
Unfortunately the abdomen was destroyed by psocids, hence the genitalia are not known.



Figs 1-12. Male genitalia of *Hilarographa* ZELLER: 1, 2 – *H. charagmotorna* sp. n., holotype; 3, 4 – *H. plurimana* (WALKER), Jurimagua, Peru; 5, 6 – *H. mariannae* sp. n., holotype; 7, 8 – *H. iquitosana* sp. n., holotype; 9, 10 – *H. quinquastrigana* (WALKER), Amazonas, Brazil; 11, 12 – *H. belizeae* sp. n., holotype.



Figs 13-18. Male and female genitalia of *Hilarographa* ZELLER: 13, 14 – *H. parambae* sp. n., holotype; 15 – *H. charagmotorna* sp. n., paratype; 16 – *H. plurimana* (WALKER), Jurimagua, Peru; 17 – *H. parambae* sp. n., paratype; 18 – *H. xanthotoxa* MEYRICK, Brazil.



Figs 19 - 26. Adults of *Hilarographa* ZELLER: 19 – *H. charagmotorna* sp. n., holotype; 20 – *H. plurimana* (WALKER), Jurimagua, Peru; 21 – *H. mariannae* sp. n., holotype; 22 – *H. iquitosana* sp. n., holotype; 23 – *H. quinquastrigana* (WALKER), Amazonas, Brazil; 24 – *H. belizeae* sp. n., holotype; 25 – *H. parambae* sp. n., holotype; 26 – *H. xanthotoxa* MEYRICK, Brazil.

REFERENCES

- BROWN J.W. 2005. Tortricidae (Lepidoptera) [in:] World catalogue of insects, **5**, Apollo Books, Stenstrup: 1-741.
- CLARKE J.F.G. 1969. Catalogue of the type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward MEYRICK. Trustees of the British Museum, London, **6**, 216 pp.
- DIAKONOFF A. 1977. Rearrangement of certain Glyphipterigidae sensu MEYRICK 1913, with descriptions of new taxa (Lepidoptera). Zool. Verhandl., Nr. 158: 1-55.
- HEPPNER J.B. 1982a. Revision of American *Thaumatogeta*, with a new species from Cuba (Lepidoptera: Tortricidae: Chlidanotinae). Pan-Pacif. Ent., **58**(3): 165-176.
- HEPPNER J.B. 1982b. Synopsis of the Hilarographini (Lepidoptera: Tortricidae) of the world. Proc. Entomol. Soc. Wash., **84**(4): 704 -715.

Received: July 29, 2009

Accepted: August 29, 2009