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Front Cover - *Trosia chaconi* (Megalopygidae, Trosiinae), Panama, Chiriquí, photograph by Emmet Gowin.
Back Cover - *Edebessa nigropuncta* (Megalopygidae, Trosiinae), Ecuador, Otonga, photograph by Emmet Gowin.

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A review of the Neotropical moths of the genus *Trosia* Hübner and allies (Megalopygidae: Trosiinae)

Vitor O. Becker

Serra Bonita Reserve, P. O. Box 01, 45880 000-Camacan, Bahia, Brazil, becker.vitor@gmail.com

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Abstract: The Neotropical *Trosia s. l.,* which includes *Edebessa* Walker, *Endobrachys* C. Felder & R. Felder, *Thoscora* Schaus and *Trosia* Hübner *s. strict.*, is reviewed, represented by 44 species, 12 of which are newly described here: *Edebessa corinneae* **sp. n.** (Brazil), *E. moinieri* **sp. n.** (Brazil), *E. onorei* **sp. n.** (Ecuador), *Endobrachys cratoplastis* **sp. n.** (Brazil), *E. placidula* **sp. n.** (Brazil), *E. pulchelulla* **sp. n.** (Brazil), *Thoscora chrysogastra* **sp. n.** (Brazil), *T. xanthogastra* **sp. n.** (Brazil), *Trosia chaconi* **sp. n.** (Costa Rica), *T. inornata* **sp. n.** (Brazil), *T. semirufula* **sp. n.** (Ecuador), and *T. virginalis* **sp. n.** (Mexico). One genus: *Eochroma* Clench, **syn. n.** (=*Endobrachys* C. Felder & R. Felder), and 7 species names: *Trosia caramia* Dyar, **syn. n.** (=*Endobrachys revocans* C. Felder & R. Felder*)*; *Trosia ochracea* Hopp, **syn. n.** (=*Megalopyge acca* Schaus), *Podalia darca* Dyar, **syn. n.** (=*Thoscora brugea* Schaus), *Podalia xinga* Dognin **syn. n.** *(=Chrysopyga pellucida* Möschler), *Trosia pulla* Forbes, **syn. n.** (=*Isochroma fallax* C. Felder & R. Felder), *Trosia amala* Dyar, **syn. n.**, and *Sciathos nigropunctigera* Fletcher, **syn. n.** (=*Sciathos semirufa* Druce), are regarded as new junior subjective synonyms.

Key words: *Edebessa*, *Endobrachys*, genitalia, Neotropical, new species, new synonyms, synonymy, *Thoscora*, *Trosia*.

INTRODUCTION

Trosiinae is a New World group of Lepidoptera in the family Megalopygidae that is mostly tropical and ranges from the southern United States, throughout Mexico and Central America, south to southern Brazil and Argentina; the subfamily is absent in the Caribbean and Chile.

This article covers the taxa treated by Hopp (1927, 1934) under the generic name *Trosia* Hübner. In the first article Hopp (1927) revised in detail the group of white Trosiinae species now regarded as belonging to *Norape* Walker and allies, including a short summary of *Trosia,* where all the genera treated here were regarded as junior synonyms. In the second article (Hopp, 1934: 1079-1082), he repeated the same generic synonymy, treating the species, in more detail, in several species-groups which coincided with the genera he synonymized. Most of these generic synonyms were later reinstated as valid by Clench (1956), and this was followed by Becker (1995: 120-122). *Trosia zernyi* Hopp, 1930, a small uniform gray species, is not treated here. As Clench (1956: 10) pointed out, that species "… *differs from all others in the group by the short stalking of M_2 and M_3 on the fore wing, and M_3 and Cu_1 in the hind wing",* and it presumably requires a new genus, and this will be dealt with in a forthcoming article.

Trosiinae includes mostly brightly colored moths with narrow forewings, which often resemble arctiine species (Erebidae, Arctiinae). Delimitation of species is not easy, especially the forms that comprise the genus *Trosia* Hübner, and particularly those of the *T. dimas* (Cramer, 1775) species-group. This task is further complicated by the fact that genitalia characters are "weak" in both sexes, as pointed out by Forbes (1942: 400). Male genitalia are very similar or identical throughout the group, even between species belonging to different genera, as can be seen in the figures. Despite this fact, most of the forms can be segregated into discrete entities, based on external characters, as pointed out by Clench (1956: 9): "*Hopp's work, being careful, based on large amounts of material and on extensive genitalic study, is excellent, but curiously, it errs, when at all, on the side of over-conservatism. He frequently unites under one specific name, whether as varietal forms or absolute synonyms, forms which are readily separable on multiple discontinuous characters, and are therefore almost certainly distinct species (and, until proven one way or another, are much better considered), despite apparent identity of genitalia".*

The genitalia are proportionally small, in relation to the size of the adults. The male genitalia, as shown in the figures, have a short uncus that is broad at its base and tapers distally, usually in the shape of a broad-based triangle; the vinculum and tegumen are fused, forming a perfect ring; the gnathos and juxta are absent; the valva are strongly divided: the costal margin is often a long, nearly straight rod, the sacculus is a broad triangular flap; the aedeagus is usually straight, three to four times as long as the diameter; the vesica are often armed with a single, long, strong cornutus. As the genitalia are very similar between species, and some of the characters, like the shape of the sacculus and uncus, show some intraspecific variation, usually the only reliable character to distinguish species is the length and shape of the cornutus. The female genitalia are membranous; the corpus bursae is elongate, often constricted

at the middle; the signum is absent; the inception of the ductus bursae is posterior, close to the ostium bursae; the ovipositor has a dorsal pair of small, nipple-shaped structures, between the papillae analis.

MATERIALS AND METHODS

This review is based mostly on the material deposited in the author's collection in Brazil (VOB), representing over 512 specimens (with over 100 genitalia preparations) belonging to 39 species in four genera. Synoptic collections, representing all of these species were taken to the Natural History Museum, London, United Kingdom (NHMUK) and the United States National Museum of Natural History, Washington, DC (USNM) and were compared with type secimens deposited there. The type material of most species was examined, and images of the types of names described by Hopp, deposited in the Naturhistorisches Museum, Vienna, Austria (NHMV), Museum für Naturkunde, Leibnitz-Institut für Evolutions- und Biodiversitätsforching an der Humboldt Universität, Berlin, Germany (MNHU) and the Zoologische Sammlungen des Bayerischen Staates, München, Germany (ZSBS) were also examined. The author worked extensively with the USNM collection, which includes types of Dognin, Dyar and Schaus, during many visits over 40 years. The USNM collection was curated in detail, including genitalia dissections of almost all species, by Carl Heinrich about the time that Hopp was active. The author had access to detailed images that were used in this research. The holotypes of the new species described here are currently in the author's collection and will be transferred, together with remainder of the collection, to a Brazilian institution in the future. Some paratypes will be deposited in the USNM or museums listed with specimen data. Genitalia were prepared following the methods described by Robinson (1976). Terms for morphological characters follow Hodges (1971). Descriptions of the wing pattern throughout this paper refer to the dorsal coloration.

The following abbreviations are used here: AMC = Alfred Moser Collection, São Leopoldo, Rio Grande do Sul, Brazil; ASU = Arizona State University, Tempe, Arizona, USA; BA = Bahia State, Brazil; Chi = Chiapas State, Mexico; CMNH = Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA; CPAC = Centro de Pesquisa Agropecuária dos Cerrados, Embrapa, Planaltina, DF, Brazil; DF = Distrito Federal, Brazil; FW = forewing; GO = Goiás State, Brazil; g. s. = genitalia slide; HW = hind wing; LACM = Los Angeles County Museum, Los Angeles, California, USA; MA = Maranhão State, Brazil; MCZ = Museum of Comparative Zoology, Cambridge, USA; Misspl. = misspelling; MG = Minas Gerais State, Brazil; (MNHU) = Museum für Naturkunde, Leibnitz-Institut für Evolutions- und Biodiversitätsforching an der Humboldt Universität, Berlin, Germany; MS = Mato Grosso do Sul State, Brazil; MSU = Mississippi State University, Starkville, Mississippi, USA; MT = Mato Grosso State, Brazil; NHMUK = Natural History Museum, London, United Kingdom; NHMV = Naturhistorisches Museum Vienna, Austria; PA = Pará State, Brazil; PI = Piauí State, Brazil; PR = Paraná State, Brazil; RJ = Rio de Janeiro State, Brazil; RO = Rondônia State, Brazil; RS = Rio Grande do Sul State, Brazil; SC = Santa Catarina State, Brazil; SMNK = Staatliches Museum für Naturkunde, Stuttgart, Germany; SP = São Paulo State, Brazil; USNM = United States National Museum, Washington, DC, USA; VOB = Vitor O. Becker Collection, Serra Bonita Reserve, Camacan, Bahia, Brazil; ZM = Zoologisk Museum, Statens Naturhistorike Museum, Copenhagen, Denmark; ZSBS = Zoologische Sammlungen des Bayerischen Staates, München, Germany.

RESULTS

This study shows that the taxa formerly treated by Hopp (1934: 1079-1081), under the generic name *Trosia* Hübner, represent 44 species, belonging to four genera. Of these, 12 species are here described for the first time, and one generic name and seven species names are regarded as new junior subjective synonyms.

Nomenclatural summary

EDEBESSA Walker, 1856
- *Alimera* Möschler, 1883 **syn. n.**
- *Edibessa* Jones, 1912, misspl.
- *Langucys* Butler, 1878
  - ***bicolor*** (Möschler, 1883) (*Alimera*) Amazon (Guianas to Brazil)
    - *brillosa* Piñas, 2006, *nomen nudum*
    - *languciata* Schaus, 1905
  - ***circumcincta*** Schaus, 1905 Amazon (Guianas, Ecuador, Brazil)
  - ***corinneae*** Becker, **sp. n.** Brazil (central)
  - ***meunieri*** Becker, **sp. n.** Amazonian (Brazil)
  - ***nigropuncta*** (Druce, 1909) (*Langucys*) Andes (Colombia to Peru)
  - ***nigrorufa*** (Walker, [1865]) (*Glanycus*) Andes (Colombia to Peru)
    - *obusta* Dognin, 1920
  - ***onorei*** Becker, **sp. n.** Ecuador
    - *rocio* Piñas, 2006, *nomen nudum*
  - ***purens*** Walker, 1856 Brazil, Paraguay

ENDOBRACHYS R. C. Felder & R. Felder, 1874
- *Eochroma* Clench, 1956 **syn. n.**
  - ***cratoplastis*** Becker, **sp. n.** Brazil (central)
  - ***placida*** (Jones, 1912) (*Edibessa* [sic]) SE Brazil
  - ***placidula*** Becker, **sp. n.** Brazil (central)
  - ***pulchella*** (Schaus, 1905) (*Trosia*) Amazon (Guianas to Ecuador)
  - ***pulchellula*** Becker, **sp. n.** Amazon (Brazil)
  - ***revocans*** C. Felder & R. Felder, 1874 F. Guiana to Brazil, Paraguay
    - *arpi* (Schaus, 1900) (*Sciathos)*
    - *caramia* (Dyar, 1910) (*Trosia*) **syn. n.**
    - *ferugina* (Jones, 1912) (*Edibessa* [sic])
    - *jeanette* (Dyar, 1910) (*Trosia*)

THOSCORA Schaus, 1904
- *Gerontia* Schaus, 1904
  - ***acca*** (Schaus, 1892) (*Megalopyge*) S Brazil
    - *ochracea* (Hopp, 1922) (*Trosia*) **syn. n.**
  - ***aterrima*** (Hopp, 1930) (*Trosia*) Andes (Colombia)
  - ***chrysogastra*** Becker, **sp. n.** Brazil **(**central)
  - ***brugea*** Schaus, 1904 Amazon (Guianas to Brazil)
    - *darca* (Dyar, 1910) (*Podalia*) **syn. n.**
  - ***omayena*** (Schaus, 1904) (*Gerontia*) Amazon (Guianas to Brazil)
  - ***pellucida*** (Möschler, 1878) (*Chrysopyga*) Amazon (Guianas to Brazil)
    - *xinga* (Dognin, 1922) (*Podalia*) **syn. n.**
  - ***ribbei*** (Druce, 1898) (*Sciathos*) S Mexico to S Brazil
    - *electra* (Hopp, 1922) (*Trosia*)
  - ***rubrivena*** (Jones, 1912) (*Edibessa* [*sic!*]) Brazil (central to SE)
  - ***rufa*** (Jones, 1912) (*Edibessa* [*sic!*]) Brazil (SE)
  - ***xanthogastra*** Becker, **sp. n.** Brazil (central)
  - ***zikani*** (Hopp, 1922) (*Trosia*) Brazil (SE)

TROSIA Hübner, [1820]
- *Isochroma* C. Felder & R. Felder, 1874
- *Jsochroma* Felder & Rogenhofer, 1875
- *Joschroma* Neave, 1939, misspl.

Sarothroma Herrich-Schäffer, [1855]
Sciathos Walker, 1855
albida (Dognin, 1905) (*Edebessa*) Andes (Colombia to Peru)
metaleuca (Druce, 1906) (*Sciathos*)
amarilla Hopp, 1922 Brazil (SE)
anax Dognin, 1923 Colombia, Brazil (central and SE)
chaconi Becker, **sp. n.** Central American (Costa Rica, Panama)
dimas (Cramer, 1775) (*Phalaena*) S Mexico to central Brazil
tricolora (Fabricius, 1787) (*Bombyx*)
donckieri Dognin, 1924 Brazil (central to SE)
fallax (C. Felder & R. Felder, 1874) (*Isochroma*) Guatemala to central Brazil
pulla Forbes, 1942 **syn. n.**
rosita Schaus, 1920
flavida Dognin, 1911 Andes (Colombia, Ecuador)
flava Hopp, 1934, misspl.
fumosa Hopp, 1934 Brazil (SE)
incostata Schaus, 1905 Mexico to Brazil (central)
inornata Becker, **sp. n.** Brazil (central)
misda Dyar, 1910 Brazil (SE)
nigra Hopp, 1934 Andes (Peru)
obsolescens Dyar, 1899 United States (S), Mexico (N)
roseipuncta (Druce, 1906) (*Sciathos*) Andes (Peru)
semirufa (Druce, 1906) (*Sciathos*) S Mexico to SE Brazil
amala Dyar, 1910 **syn. n.**
nigropunctigera (Fletcher, 1982) (*Sciathos*), repl. name, **syn. n.**
punctigera (Stoll, 1790) (*Phalaena*), preocc.
semirufula Becker, **sp. n.** Brazil, Ecuador
tolimata Dognin, 1922 Andes (Colombia, Ecuador)
virginalis Becker, **sp. n.** S Mexico

Key to genera

1. HW with Sc and Rs stalked beyond cell ..... ***Endobrachys***
   HW with Sc and Rs stalked before end of cell **2**
2. FW with M1 from upper angle of cell or short stalked with radial sector ..... ***Edebessa***
   FW with M1 below upper angle of cell **3**
3. Thorax without dots dorsally **4**
   Thorax with dots dorsally ..... ***Trosia***
4. Wings white ..... ***Trosia* (*virginalis*)**
   Wings not white ..... ***Thoscora***

ENDOBRACHYS C. Felder & R. Felder, 1874

Endobrachys C. Felder & R. Felder, 1874: pl. 83, fig. 17. Type-species: *E. revocans* R. Felder, 1874: pl. 83, fig. 17, by monotypy.
Eochroma Clench, 1956: 10. Type-species: *Trosia pulchella* Schaus, 1905: 334, by original designation. **Syn. n.**

Diagnosis. The species in this genus mimic lampyrid beetles (Lampyridae) and moths of the arctiine genus *Cratoplastis* C. & R. Felder (Erebidae, Arctiinae). The male genitalia show some slight differences between species, especially in the shape of uncus, sacculus and cornutus.

Distribution. South America, from the Guianas, south to SC, Brazil.

Remarks. *Endobrachys* was synonymized under *Trosia* by Hopp (1927: 274; 1934: 1079) and reinstated as a good genus by Clench (1956: 11) who, in the same work, proposed *Eochroma* based on the branching of HW veins Sc and Rs beyond the discal cell. This character does not hold, as the specimens of all the species treated here in *Endobrachys* share similar venation. The species included here in *Endobrachys* were treated by Hopp (1934: 1079) in his *revocans*-group.

Key to species

1. Abdomen black **2**
   Abdomen not black **4**
2. FW with a broad, wedge shaped fascia, from base, ending in a point at termen below apex ..... ***cratoplastis***
   FW without such fascia **3**
3. FW with short black dash below costa ..... ***pulchellula***
   FW without such dash ..... ***placida***
4. FW with gray area divided by a pale fascia below cell **5**
   FW with gray area not divided ..... ***placidula***
5. FW with a short black dash below costa ..... ***pulchella***
   FW with dash below costa nearly concolorous with ground color ... ***revocans***

Endobrachys revocans C. Felder & R. Felder, 1874
Figs. 1-9, 124

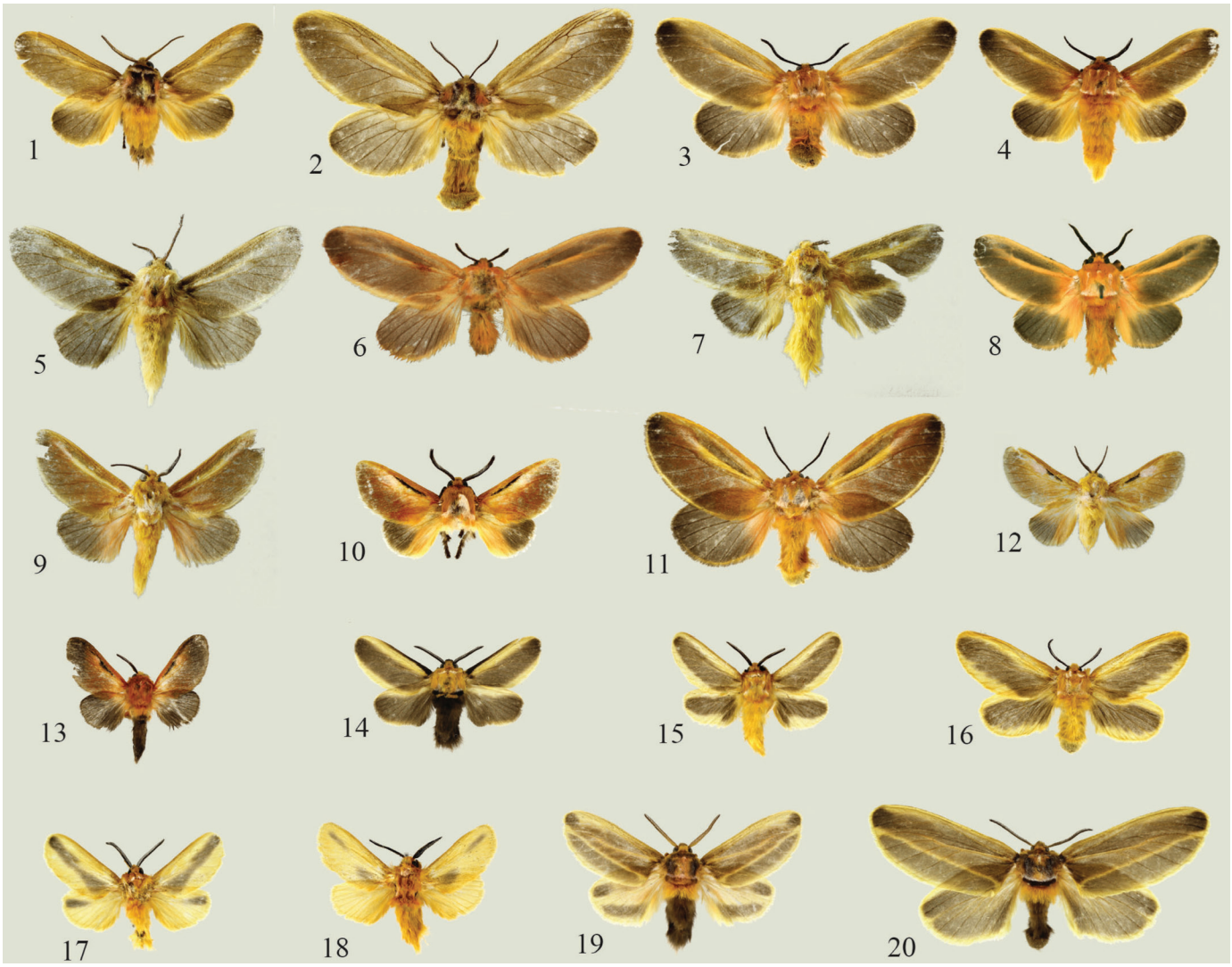
Endobrachys revocans C. Felder & R. Felder, 1874: pl. 83, fig. 17. Type ♀, FRENCH GUIANA: [no further data] (NHMUK) [examined].
Sciathos arpi Schaus, 1900: 230, Type ♂, BRAZIL: RJ, Rio de Janeiro (*Schaus*) (USNM, 12546), [examined]. [Synonymized by Hopp, 1934: 1079].
Trosia caramia Dyar, 1910: 172. Holotype ♂, PERU: Carabaya, Rio Huacamaya (USNM, 13112) [examined]. **Syn. n.**
Edibessa [sic!] *ferugina* Jones, 1912: Type ♂, BRAZIL: RJ, Rio de Janeiro, Corcovado (*Jones*) (NHMUK) [examined]. [Synonymized, under *arpi,* by Hopp, 1927: 274].
Trosia jeanette Dyar, 1910: 172. Holotype ♂, FRENCH GUIANA: St. Jean, Maroni River (*Schaus*) (USNM, 13111) [examined]. [Synonymized by Hopp, 1934: 1079].

Diagnosis. The male (Figs. 1, 4, 7-9) has the thorax and abdomen golden ochreous. The antenna is black. The FW length is 14-17 (33-40 mm wingspan), dark fuscous, with a yellow dash above cell, parallel to costa, from base to costa before apex; the termen, the tornus and the dorsum are yellow. The HW are dark fuscous, ochreous towards base. The female (Figs. 2, 3, 5, 6) is darker and larger. The FW length is 20-23 mm (45-52 mm wingspan). The abdomen has the tip dark fuscous. The male genitalia (Fig. 124) has the aedeagus bearing a thin and long cornutus, as long as the aedeagus.

Specimens examined. Types; 17 ♂♂ (4 g. s.: VOB 5301-5303, 5379), 5 ♀♀ (2 g. s.: VOB 5304, 5305) (VOB), 3 ♂♂, 1 ♀ (CPAC).

Distribution. From French Guiana to Peru and Brazil (from PA, along the Brazilian coast, from AL, south to SC, west to DF and to RO). The widest ranging species in the genus.

Remarks. This species is similar to *E. pulchella,* but has the area below the costa and the yellow dash above the cell is concolorous with the ground color (*E. pulchella* has a black line above yellow dash). Specimens from Ecuador (Napo) (Figs. 1, 2) have the thorax tinged gray dorsally. *Endobrachys revocans* was described from an unspecified number of females, presumably the single one (Fig. 6) mentioned above. *Sciathos arpi* was described from an unspecified number of specimens with no reference to sex, presumably the single one (Fig. 7) referred to above. *Endobrachys ferugina* was described from an unspecified number of specimens representing both sexes. The male bearing a round red-bordered label “Type” is illustrated (Fig. 8). *Trosia jeanette* was described from a holotype (Fig. 5) and a paratype male, from the same locality. *Trosia caramia* was described from a holotype (Fig. 9) and three paratypes males from the same locality.



Figs. 1-20. *Endobrachys* adults, dorsal view. **1-9**. *E. revocans*: **1**, **2** male, female, Ecuador; **3, 4** female, male, Brazil; **5**. =*jeanette*, male holotype, Fr. Guiana; **6**. *revocans*, female type, Fr. Guiana; **7**. =*arpi*, male type, Brazil; **8**. =*ferugina*, male type, Brazil; **9**. =*caramia,* male holotype, Peru. **10-12**. *E. pulchella*: **10, 11**. male, female, Ecuador; **12**. male type, Fr. Guiana. **13**. *E. pulchellula*, male holotype, Brazil. **14**. *E. placida*, male, Brazil. **15-18**. *E. placidula*, Brazil: **15**. male holotype; **16**. female paratype; **17**, **18**. males. **19-20**. *E. cratoplastis*, Brazil: **19**. male holotype; **20**. female paratype.

Endobrachys pulchella (Schaus, 1905) **comb. n.**
Figs. 10-12, 125

Trosia pulchella Schaus, 1905: 334. Type ♂, FRENCH GUIANA: St. Jean, Maroni River (*Schaus*) (USNM, 8914) [examined].

Diagnosis. The male (Figs. 10, 12) has the thorax and the abdomen pinkish golden-ochreous. The antenna is black. The FW length is 13-14 mm (30-33 mm wingspan), orange fuscous with a black streak above the yellow dash, below the costa. The HW is gray, with the basal half pinkish ochreous. The male genitalia (Fig. 125) has the uncus long and the aedeagus with a long, sharp cornutus. The female (Fig. 11) is larger and darker; the FW length is 22 mm (50 mm wingspan). The tip of the abdomen is yellow.

Specimens examined. Type; 1 ♂ (1. g. s.: VOB 5306), 1 ♀ (VOB).

Distribution. Amazon, from French Guiana to the eastern slopes of the Ecuadorian Andes, at low elevations.

Remarks. Similar to *E. revocans*; readily recognized by the sharp, black dash below costa, above cell, of the FW. The male genitalia is also distinct, with the uncus much longer, and the cornutus sharper than in *E. revocans*. Described from an unspecified number of specimens, presumably the single male figured here (Fig. 12).

Endobrachys pulchellula **sp. n.**
Figs. 13

Diagnosis. The thorax, the base of abdomen and the basal half of the wings are ochreous; the abdomen and the distal half of the wings are blackish.

Description. Male (Fig. 13): FW 10 mm (24 mm wingspan). Head, thorax and first abdominal segment ochreous. Antenna and legs black; tarsi with white scales on articulations. FW with basal half pinkish ochreous, gradually blackish towards edges; a black dash below costa, half as long as the cell. HW blackish, ochreous at base. Abdomen black, ochreous ventrally. Female unknown.

Male genitalia. The uncus has the shape of a long rod, slightly constricted at

distal third; valva with the dorsal rod short, thin, slightly curved dorsad; the sacculus a short triangle. Aedeagus thin, straight; the cornutus thin, straight, almost as long as the aedeagus.

Etymology. The name is the diminutive form of *pulchella* and it is treated as a feminine noun in apposition.

Specimen examined (1 ♂). Holotype ♂, BRAZIL: PA, Capitão Poço, 100 m, 25-31.i.1984 g. s. VOB 5687 (*Becker,* 47961) (VOB).

Distribution. Known only from the type-locality, in the Brazilian Amazon.

Remarks. This is the smallest species in the genus, it is similar to *E. pulchella,* but readily separated by the black abdomen, which is pinkish ochreous in *E. pulchella*. The genitalia has the uncus longer and thinner basally than in *E. pulchella,* but with the aedeagus thin, bearing a long cornutus as in *E. revocans*. Collecting all over Brazil, for more than 50 years, resulted in this single specimen, indicating that it is either a rare species or a species with restricted distribution, what is unusual in the Amazon lowlands.

Endobrachys cratoplastis **sp. n.**
Figs. 19, 20, 128

Diagnosis. The thorax and the base of the abdomen is pinkish ochreous; the tegula and the abdomen are black. The antenna is dark gray. FW with a long, wedge-shaped band, bordered yellow, extending from base, along the cell to termen, below apex. The HW is dark gray with a wide yellow fascia dividing the gray area.

Description. Male (Fig. 19): FW 15-17 mm (34-38 mm wingspan). Frons fuscous, vertex pale yellow; antenna fuscous, flagellum pale yellow basally, gradually fuscous towards distal half. Thorax dorsally dark gray, ochreous ventrally, pinkish along middle and before posterior margin. Legs fuscous brown, tarsi with white scales on articulations. FW dorsally fuscous, darker distad, forming a round blotch near apex; margins yellowish, yellow area on costa expanding gradually towards apex, two yellowish lines along middle, converging towards termen; similar pattern ventrally. HW fuscous dorsally, margins yellowish; a wide, elongate, yellow area from base to mid termen. Abdomen dorsally blackish, first segment ochreous; ventrally an ochreous band, wide at base, tapering distad. Female (Fig. 20): FW 20-22 mm (46-50 mm wingspan); wings broader, darker than in males.

Male genitalia (Fig. 128). Uncus broad basally, tapering to an acute apex, lateral margins slightly concave; valva with dorsal rod thick, evenly curved dorsad; the sacculus a short, blunt triangle. Aedeagus short, thick, straight, tappered slightly towards apex; cornutus slightly curved, almost 2/3 as long as the aedeagus.

Etymology. The species name is in reference to the generic name *Cratoplastis* C. Felder & R. Felder (Erebidae, Arctiinae), whose species resemble the species of *Endobrachys*; and is treated as a neuter Latin noun in apposition.

Specimens examined. 15 ♂♂ (2 g. s.: VOB 5307, 5308), 5 ♀♀, (1 g. s.: VOB 5309). Holotype ♂, BRAZIL: MT: Chapada dos Guimarães, 800 m, 25-30. xi.1997 (*Becker*, 111041) (VOB). Paratypes: 4 ♂♂, same data as holotype; 1 ♂, 2 ♀♀, GO, Alto Paraíso, 1400 m, 1-6.xi.1996 (*Becker*, 98930); 1 ♂, MG: Tres Corações, 9.xii.1968 (*Becker*, 17272); 1♀, MG, Unaí, 7.xi.1982 (*Becker*, 49105); (VOB, USNM); 8 ♂♂, 1 ♀, GO: Vianópolis (*Spitz*) (NHMUK); 1 ♀, DF, Planaltina, 15°53'S - 47°42'W, 1100m, 20.x.1979 (*J. Santos*) (CPAC, 8244).

Distribution. Endemic to central Brazil, recorded from southern MG, west to MT, in the Cerrado biome.

Remarks. This is the only species in the genus with a wedge shaped, dark dash, edged with yellow, along the middle of the FW dividing the dark area. The cornutus is 2/3 the length of the aedeagus, as in *E. placida* and *E. placidula,* but with a sharp tip (blunt in those species). All specimens examined were collected in October and November, at the beginning of the rainy season, suggesting that this is a univoltine species.

Endobrachys placida (Jones, 1912)
Figs. 14, 126

Edibessa [sic!] *placida* Jones, 1912: 438. Type ♂, BRAZIL: RJ, Rio de Janeiro, Corcovado (*Jones*) (NHMUK) [examined].

Diagnosis. The male (Fig. 14) has the thorax pinkish ochreous. The antenna, the patagia and the abdomen are black. The FW length is 12-14 mm (28-32 mm wingspan), dark gray with the costa, the termen and the dorsum yellow. The male genitalia (Fig. 126) with the uncus as a short, acute triangle; the dorsal rod of valva thin, evenly curved dorsad. The aedeagus bears a straight cornutus slightly shorter than the aedeagus. Female specimens not available.

Specimen examined. Type; 16 ♂♂ (2 g. s.: VOB 5310, 5311) (VOB).

Distribution. From the Atlantic Forest of southeastern Brazil, from BA to SP.

Remarks. This species and *E. placidula* differ from the other congeneric species by the gray on FW not being divided. Similar to *E. placidula* but with black abdomen (yellow in *E. placidula*). The cornutus is 2/3 as long as the aedeagus, like in *E. cratoplastis* and *E. placidula* (see discussion under those species). Described from an unspecified number of males, presumably the single one labeled as mentioned above.

Endobrachys placidula **sp. n.**
Figs. 15-18, 127

Diagnosis. The body is pinkish yellow. The antenna and the wings are gray; the wings bordered with yellow.

Description. Male (Figs. 15, 17, 18): 10-14 mm (22-26 mm wingspan). Body yellowish pink. Head ochreous, gradually darkening towards palpi; palpi and antennae black. Thorax pinkish in front and posteriorly; legs black with white scales on articulations. Wings gray, circumscribed with yellow; FW with costa ochreous; HW with gray area extending towards internal margin. Female (Fig. 16): 17 mm (36 mm wingspan); wings broader than male; abdomen more robust, tip gray.

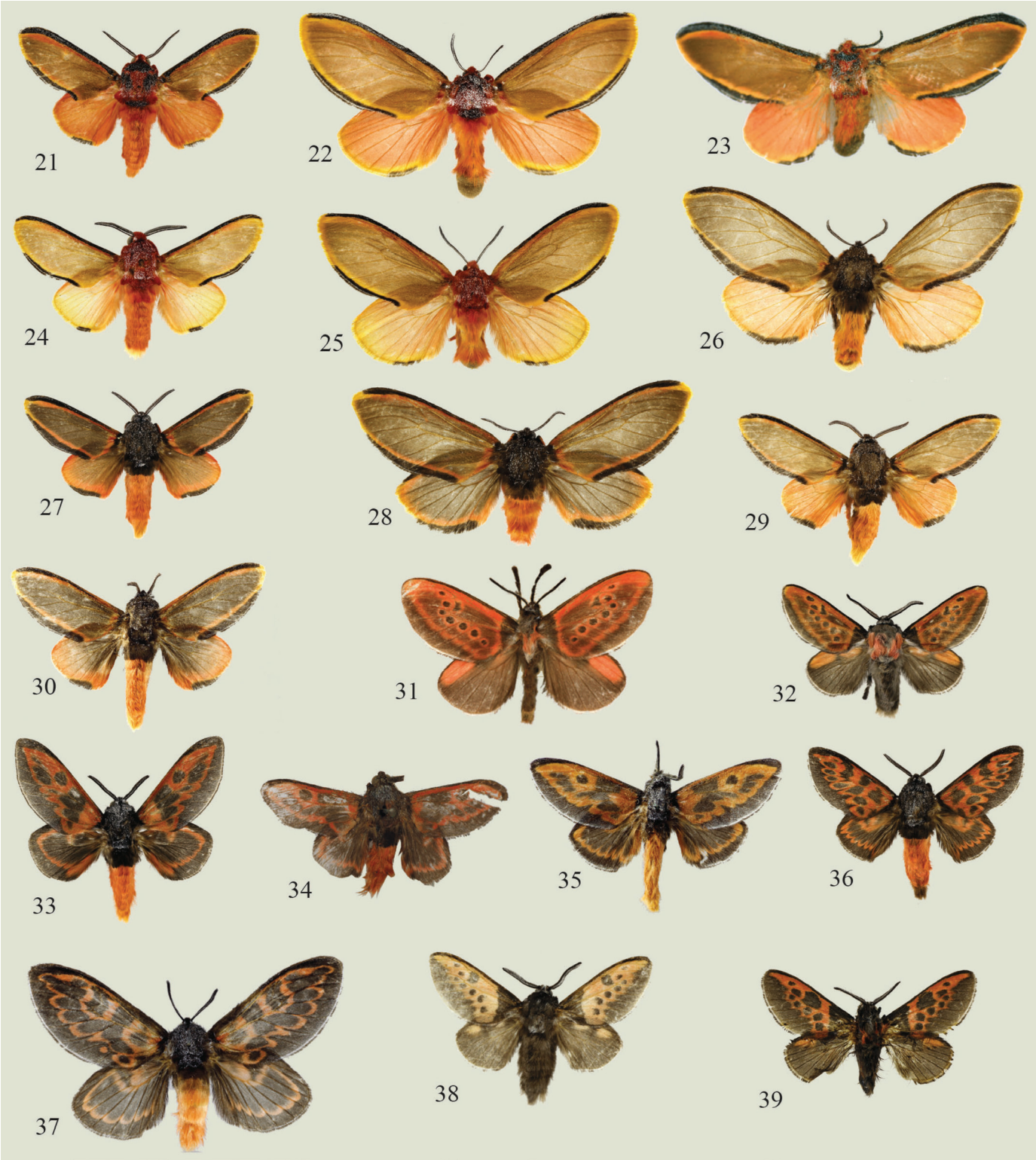
Male genitalia (Fig. 127). Uncus a short, acute triangle, lateral margins slightly concave; valva with the dorsal rod evenly curved dorsad; the sacculus a short equilateral triangle. Aedeagus straight; the cornutus thick, almost as long as the aedeagus.

Etymology. The name is the diminutive of *placida;* and is treated as a feminine Latin adjective.

Specimens examined. 8 ♂♂ (2 g. s.: VOB 5312, 5313), 1 ♀. Holotype ♂, BRAZIL: MG, Sete Lagoas, 720 m, 15.iv.1974 (*Becker,* 17317) (VOB); Paratypes, 7 ♂♂, 1 ♀, same data as holotype (*Becker,* 17287, 17316-17325) (VOB, USNM); 2 ♂♂, BA: Jequié, 13°56'S - 40°11'W, 800 m, 3-4.ii.2017 (*Thöny*) (VOB).

Distribution. Brazil; known from the two localities only, in the Cerrado and the Caatinga dry biomes.

Remarks. Very similar to *E. placida*; but easily distinguished by the yellowish abdomen, which is black in *E. placida*. The aedeagus has the cornutus similar to that of *E. placida*. The two specimens from Jequié (Figs. 17, 18) have the gray areas on



Figs. 21-39. *Edebessa* adults, dorsal view. **21-23**. *E. purens*, Brazil: **21, 22**. male, female; **23**. female holotype. **24**, **25**. *E. corinneae,* Brazil: **24**. male holotype; **25**. female paratype. **26**. *E. meunieri,* female paratype, Brazil; **27**, **28**. *E. circumcincta*, Brazil: **27**. male; **28**. female. **29**. *E. meunieri*, male holotype, Brazil. **30**. *E. circumcincta,* male type. **31**, **32**. *E. nigropuncta*; **31**. female type, Colombia; **32**. male, Ecuador. **33-35**. *E. nigrorufa*: **33**. male, Peru; **34**. male holotype, [Colombia]; **35**. =*obusta*, male type, Peru. **36**, **37**. *E. bicolor*: **36**. male, Brazil; **37**. =*languciata*, female type, Fr. Guiana. **38**, **39**. *E. onorei*: **38**. male holotype, Ecuador; **39**. male paratype, Peru.

the wings much reduced, otherwise identical to the type series, including the genitalia.

EDEBESSA Walker, 1856

Edebessa Walker, 1856: 1755. Type-species: *E. purens* Walker, 1856: 1755, by monotypy.

Alimera Möschler, 1883: 340. Type-species: *A. bicolor* Möschler, 1883: 340, by monotypy. [Synonymized by Dyar, 1910: 173].
Edibessa Jones, 1912, misspl.
Langucys Butler, 1878: 49. Type-species: *Glanycus nigrorufus* Walker, [1865]: 283, by original designation. [Synonymized by Becker, 1995: 120].

Diagnosis. The species belonging to this genus are bright red with the FW bearing a black line that circumscribes the wing. Male genitalia show some slight differences between the species, especially in the shape of uncus, the sacculus and the cornutus. As the figures tell more about these differences than what the descriptions could do, the genitalia are not described in full detail.

Distribution. South America, from Colombia to Brazil, south to RJ.

Remarks. *Edebessa* was treated as a valid genus by Dyar (1910: 173) and by Dyar and Strand (1913: 11), was synonymized under *Trosia* by Hopp (1927: 274; 1934: 1079) and reinstated as a valid genus by Clench (1956: 14). The species included here were treated by Hopp (1934: 1079), in his *edebessa*-group.

Key to species

1. FW with the area circumscribed by the black marginal line surrounding the wing, spotted (*nigropuncta*-group) **2**
   This area not spotted (*circumcincta*-group) **5**
2. Abdomen black **3**
   Abdomen red **4**
3. Thorax red, except for the black patagia ..... ***nigropuncta***
   Thorax black ..... ***onorei***
4. FW with a large blotch below costa, followed by a round dot distally ..... ***nigrorufa***
   FW with several irregular dots below costa ..... ***bicolor***
5. Thorax wholly black **6**
   Thorax red or partially red **7**
6. HW gray ..... ***circumcincta***
   HW red ..... ***meunieri***
7. Thorax partially red ..... ***purens***
   Thorax wholly red ..... ***corinneae***

The *circumcincta*-group

The species belonging to this group have the FW with the area inside the black margins not broken into several blotches and dots.

Edebessa purens Walker, 1856
Figs. 21-23, 129

Edebessa purens Walker, 1856: 1755. Holotype ♀, [BRAZIL: RJ], Rio de Janeiro (*Stephens)* (NHMUK) [examined].

Diagnosis. The male (Figs. 21) is red, with the antenna, the patagia and the tegula dark gray. The FW length is 18-20 mm (40-52 mm wingspan), reddish gray, surrounded by an orange line, followed by black margins. The male genitalia (Fig. 129) with the uncus as a short, almost equilateral triangle; the valva with the dorsal rod thin, long, evenly curved dorsad. The aedeagus is straigt; the cornutus is thin, almost as long as the aedeagus. The female FW length (Figs. 22, 23) is 28-30 mm (62-65 mm wingspan), broader than in male.

Specimens examined. Holotype; 13 ♂♂ (3 g. s.: VOB 2205, 5318, 5319), 1 ♀ (VOB), 4 ♂♂ (CPAC).

Food plants. Polyphagous. Reared on *Miconia albicans, M. ferruginea* (Melastomataceae), and *Roupala montana* (Proteaceae) (Diniz *et al.,* 2013: 47).

Distribution. Brazil (from PA and RO, south to RJ); west into Paraguay (Hopp, 1934: 1079).

Remarks. This species is similar to *E. meunieri* and to *E. corinneae* but with the thorax partially red, whereas it is wholly black in *E. meunieri*, and wholly red in *E. corinneae*. *Edebessa purens* and *E. corinneae* have the longest cornutus in the genus, nearly as long as the aedeagus, but in *E. purens* the uncus is shorter, almost an equilateral triangle in shape, the valvae has the dorsal rod thinner, slightly curved, and the sacculus a blunt triangle.

Edebessa corinneae **sp. n.**
Figs. 24, 25, 130

Diagnosis. The body is wholly red, with the antenna black. The FW is reddish gray, circumscribed by an orange line, with the margins black, except along termen. The HW is yellowish pink; most of the specimens have a short black line on the tornus margin.

Description. Male (Fig. 24): FW 15-19 mm (35-42 mm wingspan). Body red. Antennae black; flagellum with white scales. Thorax irrorated with white-tipped scales. Legs red with sparse white scales. FW fuscous; costa, and termen below Cu1, black; fuscous area circumscribed by an orange line. HW yellowish-pink; termen, between Cu2 and A1, black. Female (Fig. 25): 21-25 mm (44-54 mm wingspan); FW broader; abdomen robust.

Male genitalia (Fig. 130). Uncus twice as long as width, tapering distad, lateral margins slightly concave. Valva with dorsal rod thick, almost straight; sacculus elongate, tapering to a pointed triangle. Aedeagus thick at base, tapering distad; cornutus thin, as long as aedeagus.

Etymology. Named after Ms. Corinne Koltes, Switzerland, for her generosity to contribute with funds to the purchase of land for conservation in order to expand the area protected by the Serra Bonita Reserve, Camacan, Bahia; a latinized noun in the genitive case.

Specimens studied. 12 ♂♂ (2 g. s.: VOB 5320, 5321), 5 ♀♀ (1 g. s.: VOB 5322). Holotype ♂, BRAZIL: GO, Alto Paraíso, 1-6.xi.1996 (*Becker,* 98929) (VOB). Paratypes: 2 ♂♂, same data as holotype; 1 ♂, 4 ♀♀, GO, Alvorada do Norte, 14°31'S - 46°47'W, 415 m, 11-14.xi.2003 (*Becker,* 135153); 11 ♂♂, 3 ♀♀, DF: Planaltina, 15°35'S - 47°42'W, 10.x, 25.xi.1975, 10.xi.1976, 11.xi.1977, 20.x.1978, 25.x.1979, 4.xi.1980, 29.xi.1978, 23.xi.1980, 25.xi.1981, 5.xi, 3.xii.1988; 1 ♂, SP, Luis Antônio, Jataí, 21°35'S - 47°44'W, 500 m, 6.xi.2001 (*Becker,* 133352); 4 ♂♂, PI: Paq. Nal. Serra da Capivara, 08°50'S - 42°32'W, 450 m, 27.xi.2011 (*Becker,* 147892) (VOB, CPAC, USNM).

Distribution. Endemic to the Cerrado and the Caatinga biomes of Brazil, from SP, west to GO and DF, north to PI.

Remarks. This species is very similar to *E. purens,* but has the thorax wholly red (in *E. purens* the patagia and the tegula are dark gray). The genitalia are closer to those of *E. purens,* but shows some differences as explained under *E. purens*. It is very likely a univoltine species, as indicated by the specimens studied, all collected in October and November, at the beginning of the rainy season.

Edebessa circumcincta Schaus, 1905
Figs. 27, 28, 30, 131

Edebessa circumcincta Schaus, 1905: 335. Type ♂, FRENCH GUIANA: St. Jean, Maroni River (*Schaus*) (USNM, 8919) [examined].

Diagnosis. The male (Fig. 27) has the thorax and base of the abdomen black, the abdomen is red from the 3rd segment to the tip. The FW length is 18-23 mm (42-52 mm wingspan), dark gray with a reddish line surrounding the margins, with margins and cilia black. The female (Fig. 28) is similar to the male. The FW length is 28 mm (62 mm wingspan), broader than that of the male. The male genitalia (Fig. 131) has the uncus as a long, narrow triangle; the valva has the dorsal rod nearly straight; the sacculus is long, narrow, tapering towards a round apex. The aedeagus is short, thick, straight; the cornutus is thick, half as long as the aedeagus.

Specimens examined. Type; 17 ♂♂ (2 g. s.: VOB 5316, 5317), 1 ♀ (VOB).

Distribution. Amazon; from French Guiana, Ecuador, Peru and Brazil.

Remarks. This species is similar to *E. meunieri,* but has the HW black. It also has the shortest and thickest cornutus of all the species in the genus, which is only half the size of the aedeagus. Described from an unspecified number of specimens with no indication of sex, presumably the single specimen (Fig. 30) found at the USNM collection, labeled as mentioned above. In the CM there is a male labeled as *E. josepha*, a manuscript name, in Clench's handwriting. Gowin (2017: pl. 31: 19) illustrates a live male from St. Jean du Maroni, French Guiana.

Edebessa meunieri **sp. n.**
Figs. 26, 29

Diagnosis. This species has the thorax and the first two segments of abdomen black. The FW is gray, bordered red, with the margins black, except at apex. The abdomen is pink from the 3rd segment to the tip. The HW wings are pink, the tornus bordered with black.

Description. Male (Fig. 29): FW 22 mm (48 mm wingspan). Head, thorax and first two segments of abdomen black, mixed with white tipped scales. Fore and mid tibia and tarsi, and hind tarsi, red. FW dark fuscous; costa and termen, below M2, and tornus, black; a reddish line circumscribing the fuscous area. HW red; termen, below Cu1, narrowly black. Female (Fig. 26): FW 29 mm (62 mm); similar to male; FW broader; abdomen robust.

Male genitalia. Uncus short, tapering slightly distad, tip a small, sharp spine. Valva with dorsal rod long, thin, curved; sacculus long, with the dorsal margin curved. Aedeagus with basal half expanded, distal half curved dorsad; the cornutus long, thin, sharp pointed.

Etymology. Named after Mr. Bertrand Meunier, from Switzerland, for his generosity to contribute with funds to purchase land to expand the protected area of the Serra Bonita Reserve, Camacan, BA; a latinized noun in the genitive case.

Specimens examined. (2 ♂♂, 1 ♀). Holotype ♂, BRAZIL: RO, Porto Velho, 180 m, 21.iv-12.v.1989 g. s. 5685 (*Becker,* 73951). Paratypes: 1 ♂, 1 ♀, same data as holotype (USNM, VOB).

Distribution. Known from the type locality only, in the western Amazon, Brazil.

Remarks. This species has the pattern intermediate between *E. circumcincta* and *E. purens*: the thorax and the base of the abdomen are black as in the *E. circumcincta*, but the HW are red as in *E. purens* and in *E. corinneae.* The male genitalia has the uncus short, as in *E. nigropuncta,* but with the aedeagus thin as in *E. purens,* including the size and shape of the cornutus. Collected at the same night and light, together with a series of *E. circumcincta.*

The *nigropuncta*-group

The species belonging to this group have the fore wings with the area inside the black margins broken into several blotches and dots.

Edebessa nigropuncta (Druce, 1909)
Figs. 31, 32, 132

Langucys nigropuncta Druce, 1909: 345. Type ♀, COLOMBIA: San Antonio, 5800 ft (*Palmer*) (NHMUK), [image examined].

Diagnosis. The male (Fig. 32) has the thorax red and the abdomen black. The FW length is 15-18 mm (35-42 mm wingspan), red with multiple black dots. The HW is blackish, pink along the costa above cell. The female (Fig. 31) is similar to the male. The FW length is 23 mm (52 mm wingspan), more reddish than the male. The male genitalia (Fig. 132) has the uncus short, tapering slightly towards apex, ending in a short, sharp tip. The aedeagus is short, straight, expanded basad; the cornutus is half as long as the aedeagus, straight, sharp pointed.

Specimens examined. Type image; 3 ♂♂ (1 g. s.: VOB 5314) (VOB), 1 ♂ (CMNH).

Distribution. Andes, from Colombia, Ecuador and Peru.

Remarks. This species is similar to *E. bicolor,* to *E. nigrorufa* and to *E. onorei* but with the thorax red. Described from an unspecified number of females, presumably the single one (Fig. 31), labeled as mentioned above. Illustrated in Piñas (2006: 56, figs. 432, 433).

Edebessa nigrorufa (Walker, [1865])
Figs. 33-35

Glanycus nigrorufus Walker, [1865]: 283. Holotype ♂, [COLOMBIA: Cundinamarca]: Bogotá (*Stephens*) (NHMUK) [examined].
Edebessa obusta Dognin, 1920: 12. Type ♂, PERU: [Puno] La Unión, Carabaya, Rio Huacamayo (*Rosenberg*) (USNM, 29854) [examined]. [Synonymized by Hopp, 1927: 275].

Diagnosis. The male (Figs. 33-35) has the thorax black, the abdomen with the first two abdominal segments black, then red to the tip. The FW length is 18-21 mm (40-47 mm wingspan), red spotted black and with the margins black. The HW are black with a curved, red band parallel to the margins.

Specimens examined. Types; ♂, Peru, Satipo; image of a ♂ specimen in AMC.

Distribution. Andes, from Colombia to Peru, at low to mid elevations.

Remarks. This species shares the black thorax with *E. bicolor* but has the FW with a large, irregular, black blotch at basal third, below the costa. *Edebessa obusta* was described from

four males from the same locality. The male bearing a label "Type ♂", in Dognin's handwriting, and a red label "Type No. 29854; U.S.N.M.", is illustrated (Fig. 35). Illustrated in Piñas (2006: 56, fig. 434) and in Gowin (2017: pl. 9: 3).

Edebessa bicolor (Möschler, 1883)
Figs. 36, 37, 133

Alimera bicolor Möschler, 1883: 340. Holotype ♀, SURINAM: [no further data] (*Hoffmann*) (SMNK) [not examined].
Edebessa languciata Schaus, 1905: 336. Type ♀, FRENCH GUIANA: St. Jean, Maroni River (*Schaus*) (USNM, 8920) [examined]. [Synonymized by Hopp, 1927: 275].
Edebessa brillosa Piñas, 2006: 56, figs. 429, 430, *nomen nudum.*

Diagnosis. The male (Fig. 36) has the body black, except for the abdomen, which is red beyond the 2nd segment. The FW length is 15-18 mm (35-42 mm wingspan), red spotted black, the margins black. The HW is red with the margins and a curved, black fascia along the middle black. The female (Fig. 37) has the FW length 28 mm (60 mm wingspan), red, spotted black. The HW has the curved, black band along middle wider than in the male. The male genitalia (Fig. 133) with uncus as a long, pointed triangle; the valva has the dorsal rod evenly curved; the sacculus is a long narrow triangle; the cornutus almost as long as the aedeagus, straight, tapering towards apex.

Specimens examined. Type of *E. languciata;* 4 ♂♂ (2 g. s.: 2206, 5315) (VOB).

Distribution. Amazon; from the Guianas and Colombia to Peru, and Brazil.

Remarks. *Edebessa bicolor* shares the black thorax with *E. nigrorufa* but the FW have several irregular dots. This species and *E. nigropuncta* have the cornutus nearly 2/3 the length of the aedeagus, but differ in the shape of uncus and the sacculus. Very likely it is a phenotype form of *E. nigrorufa* with the large, irregular blotch on the FW, below costa, broken into several irregular dots. *Edebessa languciata* was described from an unspecified number of specimens with no reference to sex, presumably only the female (Fig. 37) which is labeled as "Type" in the NHMUK. In the CM there is a male labeled *E. personata,* a manuscript name, in Clench's handwriting.

Edebessa onorei **sp. n.**
Figs. 38, 39

Edebessa rocio Piñas, 2006: 56, fig. 431, *nomen nudum.*

Diagnosis. This species is black with the mid third of FW red, spotted black.

Description. Male (Figs. 38, 39): FW 18-20 mm (40-44 mm wingspan). Black; FW with mid third red. Body black. Frons white, vertex mixed with white scales. Thorax dorsally with sparse white scales posteriorly. FW basal third black, followed by a red area extending from costa, narrowing to dorsum; a large, round dot at end of cell, seven round dots in the vein interspaces; a wide black area along termen, narrowing towards both ends. HW black, a large round, red dot at apex, below costa.

Male genitalia. Uncus broad basally, tapering gradually towards tip. Valva with dorsal rod thick, slightly curved dorsad; the sacculus is a short, blunt triangle. Aedeagus short, straight, thick; the cornutus is thick, almost straight, 2/3 as long as the aedeagus.

Etymology. Named after Giovanni Onore, Quito, for his contribution to the knowledge of the insect fauna of Ecuador; and is treated as a latinized noun in the genitive case.

Specimens examined. Holotype ♂, ECUADOR: Pastaza, Mera, 1300 m, xii.1992 (*Becker,* 100676); Paratype ♂, PERU: Satipo, Satipo, 500 m, 1-30. vii.1976 (*Moser*) (VOB).

Distribution. Known from the type-locality and from Peru, on the eastern side of the Andes, at mid elevations.

Remarks. This species is similar to *E. bicolor* and to *E. nigrorufa* but with the body wholly black. The genitalia are similar to those of *E. circumcincta,* but with the uncus broader basad. The specimen illustrated by Piñas was collected by him at "Oriente, Napo, Cosanga-Tena, 1800 m, 06.xi.1999".

THOSCORA Schaus, 1904

Thoscora Schaus, 1904: 139. Type-species: *T. brugea* Schaus, 1904: 140, by monotypy.
Gerontia Schaus, 1904: 139. Type-species: *G. omayena* Schaus, 1904: 139, by monotypy. Preocc. (Hutton, 1883 [Mollusca]). [Synonymized by Clench, 1956:12].

Diagnosis. Similar to *Trosia.* easily distinguished by the thorax with no marks dorsally. Except for *T. rufa* and *T. rubrivena, Thoscora* species do not show the row of dots across the FW, which is present in *Trosia.* The genitalia are similar to those of the other species belonging to the other genera treated here, except for those of *T. pellucida* and *T. ribbei,* which have the male genitalia with the dorsal rod of valva expanded distally (Figs. 135, 139).

Distribution. Mexico, throughout Central America, to southern Brazil and Argentina.

Remarks. Both *T. rufa* and *T. rubrivena* are included here because they lack the marks on the thorax dorsally, following Hopp (1934: 1080) who included them in his *acca*-group. Both *Thoscora* and *Gerontia* were synonymized by Dyar (1910:174) under *Podalia* Walker, 1856, a Megalopyginae genus. However, as shown by their genitalia, both belong to the Trosiinae, as treated by Hopp (1934: 1079) who synonymized them under *Trosia. Thoscora* was reinstated as a valid genus by Clench (1956: 12) and this was followed by Becker (1995: 122). According to Clench (1956: 12) the genus includes all the species listed by Hopp (1934: 1080) in his *acca*-group. As Clench (1956: 12) included *G. omayena* in *Thoscora*, consequently *Gerontia* became a synonym of *Thoscora*, what was overlooked by Fletcher (1982: 166) who kept it as a junior synonym of *Trosia.*

Key to species

1. FW crossed with row of dots (*rufa*-group) **2**
   FW with no dots (*pellucida*-group) **3**
2. FW gray with the veins contrasting red ..... ***rubrivena***
   FW reddish or yellowish with the veins not contrasting ..... ***rufa***
3. FW black, the thorax bright reddish ochreous ..... ***aterrima***
   FW gray, reddish or yellowish, thorax fuscous or pale ochreous **4**
4. FW gray **5**
   FW reddish or yellowish **10**
5. Abdomen pale yellow, banded gray **6**

Abdomen yellow or ochreous **7**
6. HW semitranslucent pale yellow ..... ***omayena***
HW gray ..... ***brugea***
7. Legs fuscous ..... ***pellucida***
Legs yellow or ochreous **8**
8. Tarsi brown ..... ***zikani***
Tarsi ochreous **9**
9. Head ochreous ..... ***xanthogastra***
Head fuscous ..... ***chrysogastra***
10. Dorsal rod of valva expanded distad ..... ***ribbei***
Dorsal rod of valva not expanded distad ..... ***acca***

The *rufa*-group

The species belonging to this group have the FW crossed with a row of black dots, as in the genus *Trosia,* but lack the dots on thorax, present in *Trosia.*

Thoscora rubrivena (Jones, 1912)
Figs. 68, 141

Edibessa [sic!] *rubrivena* Jones, 1912: 438. Type ♀, BRAZIL: PR, Castro (*Jones*) (NHMUK), here designated [examined].

Diagnosis. The male (Fig. 68) is reddish gray. The FW length is 10-11 mm (24-27 mm wingspan), gray with the veins red, and with a row of black dots across, forming the postmedial band. Female similar to male; the FW length is 12 mm (28 mm wingspan). The male genitalia (Fig. 141) has the uncus as a tringle, with the lateral margins slightly concave, ending as a round apex, with a sharp point apically; valva slightly curved dorsad; the sacculus a long, narrow triangle. The aedeagus is short, thick; the cornutus blunt, half as long as the aedeagus.

Specimens studied. Type; 2 ♂♂ (1 g. s.: VOB 2196) (VOB).

Distribution. Southern Brazil, in the Atlantic Forest biome.

Remarks. This species can be distinguished from *T. rufa* by its contrasting red veins on the FW. Described from an unspecified number of females, presumably the single one referred to above. Jones, in the original description, stated "*Possibly this may be the female of the preceeding [sic] species* [*T. rufa*]." The external characters, as well as those of the genitalia (Figs. 141, 142) show that they are distinct species.

Thoscora rufa (Jones, 1912)
Figs. 70-74, 142

Edibessa [sic] *rufa* Jones, 1912: 438. Type ♂, BRAZIL: SP, São Paulo (*Jones*) (NHMUK) [examined].

Diagnosis. This species has the body yellow to ochreous; the antenna with the flagellum back and the pectination fuscous. The male FW length (Figs. 70-72) is 10-12 mm (24-30 mm wingspan), reddish to pale yellow, with a row of black dots forming the postmedial band, and with the cilia fuscous. The male genitalia (Fig. 142) has the uncus as a long triangle; the valva with the dorsal rod short, straight; the sacculus a blunt triangle. The aedeagus is almost straight; the cornutus 2/3 as long as the aedeagus, tapering distad to a sharp point. The female (Figs. 73,74) is similar to the male, with the tip of the abdomen bearing a dark gray coremata; the FW length is 14-16 mm (33-37 mm wingspan).

Specimens studied. Type; 17 ♂♂ (4 g. s.: 2197, 2198, 5323, 5324), 5 ♀♀ (VOB).

Distribution. South and central Brazil (SP, GO, DF, MS), north to Jequié, BA.

Remarks. This species is similar to *T. rubrivena* but has the FW veins not contrasting red. Described from an unspecified number of males. The male bearing a red-bordered "Type" label, labeled as mentioned above, is the only one found.

The *pellucida*-group

The species belonging to this group have the FW with no dots across FW, which are present in the species of the *rufa*-group and of the genus *Trosia.*

Thoscora aterrima (Hopp, 1930)
Fig. 69

Trosia acca aterrima Hopp, 1930a: 76. Holotype ♂, COLOMBIA: [Cauca], Rio Micay, xii.1927 (*W. Hopp*) (ZSBS) [image examined].

Diagnosis. The male (Fig. 69) has the wings and abdomen black (Fig. 69); the thorax is ochreous. The female is uniformly dark gray with the thorax ochreous.

Specimens studied. Images only: of the ♂ holotype and the ♀ allotype (ZSBS), of a ♂ paratype (NHMV), and of a ♂ in the USNM.

Distribution. Andes (Colombia).

Remarks. No other Trosiinae resembles this species. It was described from a series of both sexes [data as above], in the col. Hopp; and another series of both sexes from Colombia, [Nariño], "*Bella Vista bei Tumaco*", in the NHMV.

Thoscora omayena (Schaus, 1904)
Fig. 40

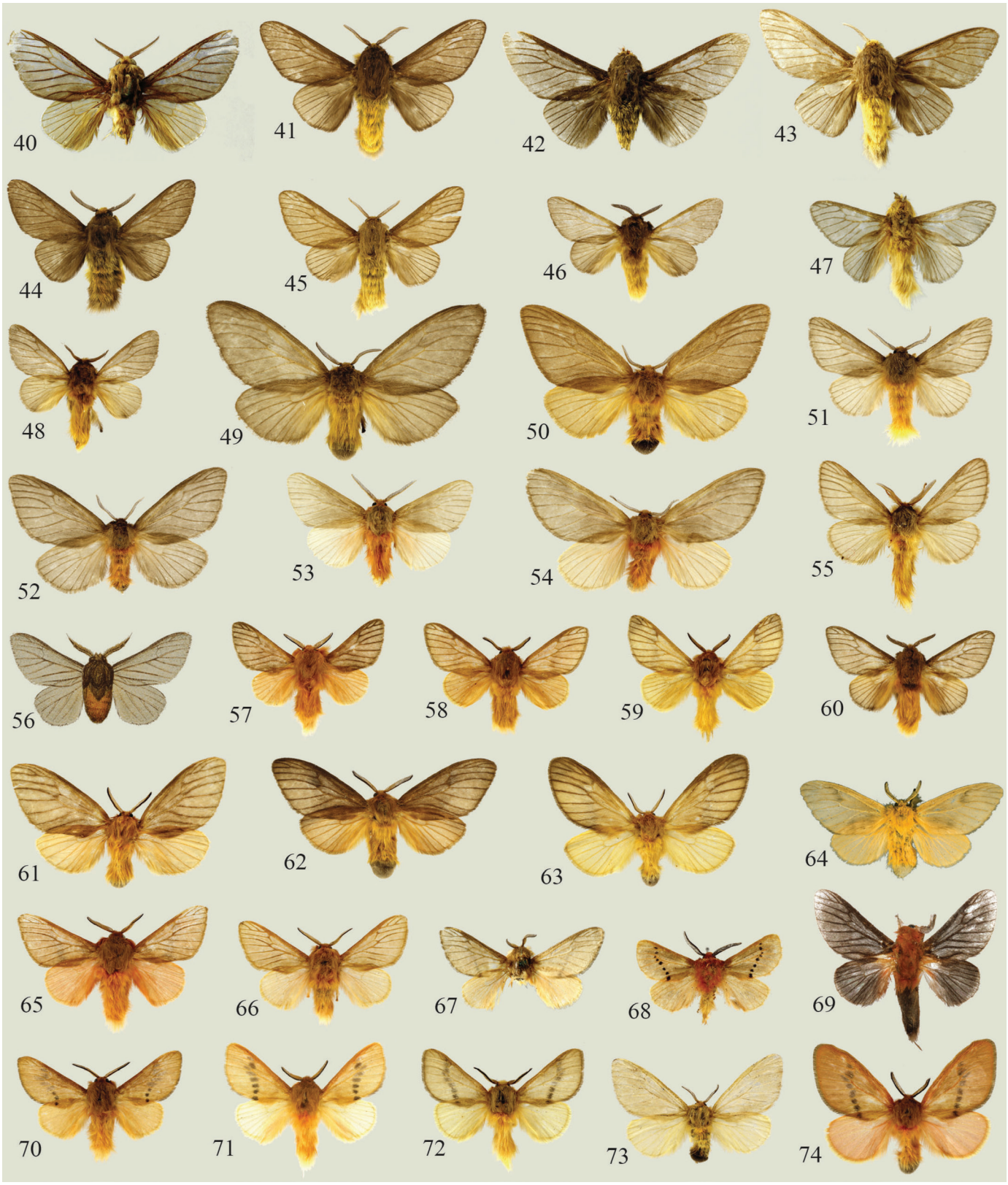
Gerontia omayena Schaus, 1904: 139. Type ♂, GUYANA: Omai (*Schaus*) (USNM, 12540) [examined].

Diagnosis. The male (Fig. 40) is dark fuscous. The FW length is 20 mm (45 mm wingspan). The HW is semitranslucent pale yellowish gray; the abdomen is ochreous, banded with fuscous. Female material was not available.

Specimens studied. The type only.

Distribution. Guyana and Surinam.

Remarks. This species is similar to *T. brugea* and *T. pellucida.* It differs from *T. brugea* by the more translucent FW, the pale HW, and the aedeagus armed with a long, sinuous cornutus. From *T. pellucida* it can be distinguished by the larger size, the yellow legs and the genitalia with the dorsal rod not expanded distally. *Gerontia omayena* was described from an unspecified number of specimens with no indication of sex, presumably only the one (Fig. 40) labeled as referred to above.



Figs. 40-74. *Thoscora* adults, dorsal view. **40**. *T. omayena*, male type, Guyana. **41-45**. *T. brugea*: **41.** male, Brazil; **42**. =*darca***,** male holotype, Fr. Guiana; **43**. male type, Venezuela; **44**, **45**. males, Brazil; **46-50**. *T. pellucida*: **46**. male, Ecuador; **47**. =*xinga*, male holotype, Brazil; **48**. male, Brazil; **49**, **50**. females, Brazil. **51**, **52**. *T. chrysogastra*, Brazil: **51**. male holotype; **52**. female paratype. **53-55**. *T. xanthogastra,* Brazil: **53**. male holotype; **54**. female paratype; **55**. male paratype. **56**. *T. zikani,* male, Brazil. **57-64**. *T. ribbei*: **57**. male, Costa Rica; **58-60**. males, Brazil; **61-64**. females: **61**. Costa Rica; **62**, **63**. Brazil; **64**. =*electra*, Paraguay. **65-67**. *T. acca,* Brazil**: 65**, **66**, males; **67**. male type. **68**. *T. rubrivena*, male, Brazil. **69**. *T. aterrima*, male holotype, Colombia. **70-74**. *T. rufa*, Brazil: **70-72**. males; 73, 74. females.

Thoscora brugea Schaus, 1904
Figs. 41-45, 134

Thoscora brugea Schaus, 1904: 140. Type ♂, VENEZUELA: [Yaracuy], Aroa (*Schaus*) (USNM, 12539), here designated [examined].
Podalia darca Dyar, 1910: 175. Holotype ♂, FRENCH GUIANA: Maroni River (*Schaus*) (USNM, 13115) [examined]. **Syn. n.**

Diagnosis. The male (Figs. 41-45) is gray, with the abdomen ochreous, banded fuscous. The FW length is 15-20 mm (35-45 mm wingspan). The HW is gray, and the legs are yellow. The male genitalia (Fig. 134) with uncus an equilateral triangle; valva with the dorsal rod long, thin, almost straight; the sacculus as an elongate triangle. The aedeagus is short, thick, slightly curved dorsad; the cornustus almost as long as the aedeagus, slightly curved. Female material was not available.

Specimens studied. Types; 13 ♂♂ (2 g. s.: VOB 5325, 5326) (VOB).

Distribution. From Venezuela, the Guianas, to Brazil (south to ES).

Remarks. *Thoscora brugea* was described from an unspecified number of specimens with no indication of sex, presumably only the one (Fig. 43) labeled as mentioned above. *Podalia darca* (Fig. 42) was described from 3 ♂♂ and 1 ♀. Hopp (1934: 1080) had synonymized both *T. brugea* and *P. darca* under *T. pellucida*. However, according to the types, both represent one single species, distinct from *T. pellucida*. The difference shown by the type specimens of *T. brugea* and *P. darca* is not more than the amount of scaling on the wings, which is confirmed by the genitalia of specimens matching *T. brugea*, which match the genitalia of the type of *P. darca*.

Thoscora pellucida (Möschler, 1878)
Figs. 46-50, 135

Chrysopyga pellucida Möschler, 1878: 675. Holotype ♀, SURINAM: Paramaribo (MNHU) [not found].
Podalia xinga Dognin, 1922: 30. Holotype ♂, BRAZIL: PA, Ponte Nova, rio Xingu (*Fassl*) (USNM, 29854) [examined]. **Syn. n.**

Diagnosis. The male (Figs. 46-48) has the abdomen pale yellow. The FW length is 14-15 mm (33-35 mm wingspan), gray with the costa and the cilia fuscous. The HW is gray with a faint tinge of yellow. The male genitalia (Fig. 135) has the uncus broad basally, tapering to the middle, and the distal half thin, ending as an acute apex. The valva has the dorsal rod expanded distally to a blunt triangle; the sacculus is long, narrow, tapering to an acute apex. The aedeagus is short, straight; the cornutus is thin, almost as long as the aedeagus. The female FW (Figs. 49,50) length is 15-23 mm (35-52 mm wingspan), gray (some specimens have a faint yellow tinge towards base). The tip of the abdomen bears a patch of gray scales.

Specimens studied. Holotype of *Podalia xinga;* 4 ♂♂ (2 g. s.: VOB 2204, 5327), 12 ♀♀ (VOB), 1 ♀ (CPAC).

Distribution. South America; Guianas to Ecuador, south to central and southern Brazil.

Remarks. This species is similar to *T. omayena,* to *T. chrysogastra* and to *T. xanthogastra,* but has the legs fuscous (they are yellow in these three species). The male genitalia are similar to those of *T. ribbei,* showing the valva with the costal rod expanded distally (Fig. 135); in the other three species the costal rod is not expanded distally, as is the case with all the other species belonging to all the genera treated in this work. The type specimen of *pellucida*, which should be at the MNHU, where the other types from Surinam described by Möschler are deposited, has not been traced (Théo Léger, *pers. comm.*). It is very likely that Hopp (1934: pl. 161a) had examined it and it is the one figured by him as the female of *T. brugea*. The series of males and females examined match the figures of both sexes of *T. brugea* in Hopp (1934, pl. 161a), however, he treated it as a synonym of *T. pellucida* in the text (Hopp, 1934: 1080). The genitalia of *T. ribbei* and *T. pellucida* are similar. However, *T. pellucida* has a gray FW (reddish to pale ochreous in *T. ribbei*). The type of *T. xinga* (Fig. 47) has not been dissected, however, the genitalia of specimens that match it, also from Pará, Brazil, have the dorsal rod of the valva expanded distally, as in *T. pellucida.*

Thoscora zikani (Hopp, 1922)
Fig. 56

Trosia zikani Hopp, 1922: 430. Holotype ♂, BRAZIL: MG, Passa Quatro, 5.xii.1921 (*Zikan*) (ZSBS) [not found].

Diagnosis. This species (Fig. 56) has the thorax and the base of the abdomen fuscous, the tarsi brown, and the abdomen ochreous. The FW length is 15 mm (35 mm wingspan); both wings semitranslucent light gray, and the veins fuscous.

Specimens studied. None.

Distribution. Brazil; southern MG, in the Atlantic Forest biome.

Remarks. Hopp stated, in the original description, that the type was in his personal collection. His collection was later transferred to the ZSBS, however, according to Dr. Axel Hausmann (*pers. comm.*) no specimen was found there. A search in the NHMV and MNHU was carried with no results either, according to their curators. According to the original description and the illustration in Hopp (1934: pl. 161a), reproduced herein (Fig. 56), it looks similar to *T. xanthogastra* and *T. chrysogastra,* except for the tarsi, brown in *T. zikani*, whereas orange or yellow in the other two. According to the original figure, *T. zikani* resembles a descaled specimen of *Megalopyge uruguayensis* Berg (Megalopyginae). Unfortunately, no specimen from any locality along the Atlantic Forest of southern Brazil, the biome of the type-species, was available for study. As both *T. chrysogastra* and *T. xanthogastra* belong to the Cerrado biome, the fauna of which is distinct from that of the Atlantic Forest, the three species are regarded as distinct.

Thoscora xanthogastra **sp. n.**
Figs. 53-55, 136, 137

Diagnosis. The male of this species is gray with the legs and the abdomen orange. The FW is light gray with the veins hardly marked. The HW is light gray, tinged orange yellow towards the base. The female is larger, with the wings broader than those of the male.

Description. Male (Figs. 53, 55): Gray. Head, thorax below, and abdomen

orange; antenna with flagellum pale, pectinations fuscous. Thorax pale gray dorsally. FW length 16-17 mm (36-38 mm wingspan), pale gray, veins ill defined. HW pale yellow, tinged orange towards base. Female (Fig. 50, 54) 22 mm (50 mm wingspan); wings broader than male; tip of abdomen light gray.

Male Genitalia (Figs. 136, 137). Uncus tapering distad gradually to an acute tipped triangle. Valva with dorsal rod slightly curved; sacculus an expanded, triangular flap. Aedeagus 3x as long as diameter, slightly curved ventrad; cornutus ¾ the size of aedeagus, strong, slightly bent.

Etymology. From the Greek *xanthos* = yellow + *gaster -tros* = abdomen, belly; and is treated as a feminine Latin noun in apposition.

Specimens studied. 3 ♂♂, 1 ♀ (2 g. s.: VOB 5328, 5329). Holotype ♂, BRAZIL: GO, Alvorada do Norte, 14°31'S, 46°47'W, 415 m, 14.xi.2003 (*Becker, Ferro & Emery*) (VOB 135150). Paratypes: 2 ♂♂, 1 ♀, same data as holotype (VOB, 135150); 1 ♂, DF, Planaltina, 15°53'S - 47°42'W, 1100 m, 9.xi.1977 (*Becker* 22157, g. s. VOB 5330) (VOB) (excluded from type series).

Distribution. Known only from central Brazil, in the Cerrado biome.

Remarks. This species is similar to *T. pellucida,* to *T. chrysogastra* and to *T. zikani.* It differs from *T. pellucida* and from *T. zikani* by its orange legs (the tarsi are brown in *T. pellucida* and in *T. zikani*), and by the HW light gray, tinged orange towards base in *T. xanthogastra,* whereas plain gray in *T. chrysogastra* and in *T. pellucida.* They also differ in the shape of genitalia.

Thoscora chrysogastra **sp. n.**
Figs. 51, 52, 138

Diagnosis. This species is gray with both the thorax, ventrally, and the abdomen golden yellow; the wings with the veins only slightly contrasting.

Description. Male (Fig. 51): 17 mm (40 mm wingspan). Frons orange, vertex and antenna fuscous. Thorax above, and FW gray. HW pale gray. Thorax below, and abdomen, golden yellow. Female (Fig. 52): 20-22 mm (45-48 mm wingspan); wings broader than male; tip of abdomen dark fuscous.

Male genitalia (Fig. 138). Uncus bell-shaped, distal third narrowing abruptly to a thin tip. Valva with dorsal rod slightly curved; sacculus a wide triangular flap. Aedeagus 3x as long as diameter; cornutus ½ length of aedeagus, straight.

Etymology. From the Greek *chryso* = gold + *gaster -tros* = abdomen, belly; and is treated as a feminine Latin noun in apposition.

Specimens studied. 4 ♂♂, 4 ♀♀ (1 g. s.: VOB 5331). Holotype ♂, BRAZIL: SP, Pedregulho, 20°14'S, 47°26'W, 950 m, 5.xi.2001 (*Becker,* 133476). Paratypes: 1 ♂ (g. s.), 1 ♀, same data as holotype; 2 ♀♀, DF, Planaltina, 15°53'S - 47°42'W, 1100m, 11.x.1977, 3.xii.1988 (*Becker,* 20181, 59323); 1 ♀, GO, Alto Paraíso, 1400 m, 1-6.xi.1996 (*Becker,* 98931); 2 ♂♂, BA: Jequié, 13°56'S - 40°11'W, 800 m, 3-4.ii.2017 (*Thöny*) (VOB).

Distribution. Known from central and southern Brazil, north to BA, in the Cerrado and the Caatinga biomes.

Remarks. This species is similar to *T. pellucida,* to *T. xanthogastra* and to *T. zikani.* It differs from *T. pellucida* and *T. zikani* by its yellow legs (brown in those), and from *T. chrysogastra* by the HW plain gray. The genitalia of *T. chrysogastra* are also distinct from those of *T. xanthogastra*. The *T. chrysogastra* female has the tip of the abdomen dark fuscous, whereas in *T. xanthogastra* it is light gray. Very likely a univoltine species, as indicated by the specimens examined, collected in October and November in the Cerrado biome, and in early February in the Caatinga biome, the beginning of the rainy season in both places.

Thoscora ribbei (Druce, 1898) **stat. rev.**
Figs. 57-64, 139

Sciathos ribbei Druce, 1898: 441. Holotype ♂, PANAMA: Chiriqui (*Ribbe*) (MNHU) [not traced].
Trosia electra Hopp, 1922: 431. Holotype ♀, PARAGUAY: San Bernardino, 1.xi.?, "*in copula*" (*Fiebrig*) (MNHU) [image examined]. [Synonymized by Hopp, 1934: 1080].

Diagnosis. The male of this species (Figs. 57-60) is reddish to pale ochreous; the FW length is 12-14 mm (28-33 mm wingspan), reddish, smoked gray in most of the specimens, and the veins are contrasting. The valva (Fig. 139) has the dorsal rod expanded distally as a short triangle. The female (Figs. 61-64) has the FW length 16-20 mm (36-45 mm wingspan), broader than that of the male.

Specimens studied. Image of *T. electra* holotype; 31 ♂♂ (9 g. s.: VOB 2200, 2201, 2203, 5332-5337), 8 ♀♀ (2 g. s.) (VOB).

Distribution. Southern Mexico to southern Brazil, but north of Espírito Santo.

Remarks. In southern Brazil this species cannot be distinguished externally from *T. acca*, however they can be easily separated by their male genitalia (see *T. acca*). The type specimen of *S. ribbei* was not found either at the MNHU, or at any other European Museum (NHMUK, NHMV, ZSBS). However, the genitalia of all males dissected, from Central America, that match the images of *S. ribbei* in Druce (1898: pl. 88, fig. 1) and in Hopp (1934: pl. 160e), have the valva with the dorsal rod expanded distally. Male genitalia of specimens that match the type of *T. electra* (Fig. 64), from Central Brazil, a biome similar to that of eastern Paraguay, also match those of *T. ribbei.* The genitalia of *T. ribbei* and *T. pellucida* are similar, but *T. pellucida* has the thorax fuscous and the FW gray. Hopp (1934: 1080) regarded *T. ribbei* as a subspecies of *T. acca,* and *T. electra* a synonym of *T. ribbei*.

Thoscora acca (Schaus, 1892)
Figs. 65-67, 140

Megalopyge acca Schaus, 1892: 322. Type ♂, BRAZIL: [RJ], Rio de Janeiro (*Schaus*) (USNM) [examined].
Trosia ochracea Hopp, 1922: 431. Holotype ♂, BRAZIL: RJ, Rio de Janeiro (*Miranda*) [not found]. **Syn. n.**

Diagnosis. The male (Figs. 65-6) has the body and the HW pinkish orange or yellow. The FW length is 13-15 mm (30-35 mm wingspan), yellow or orange, tinged fuscous. The genitalia (Fig. 140) with dorsal rod of valva not expanded distally. Female specimens not available.

Specimens studied. Type of *M. acca*; 4 ♂♂ (3 g. s. VOB 2199, 2202, 5338) (VOB).

Distribution. Brazil (RJ, SP, southern MG, west to DF).

Remarks. This species is almost identical to *T. ribbei,* but readily distinguished by the male genitalia, which present the valva with the costal rod not expanded distally (the dorsal rod is expanded as a broad triangle in *T. ribbei*). *Megalopyge acca* was described from an unspecified number of males, presumably the single specimen (Fig. 67) labelled as mentioned above. The type of *T. ochracea* could not be traced at any of

the major museums where the material studied by Hopp are currently deposited (NHMV, ZSBS, MNHU). Fortunately there is a good illustration of the type in Hopp (1934: pl. 160e) to which the specimens mentioned above match. The type locality confirms this synonymy as all the males collected from Rio de Janeiro southwards belong to *T. acca.* However, specimens from southern and central Brazil, where *T. acca* and *T. ribbei,* come close to sympatry, should have their genitalia examined for a safe identification.

TROSIA Hübner, [1820]

Trosia Hübner, [1820]: 196. Type-species: *Bombyx tricolora* Fabricius, 1787: 114, by subsequent designation by Dyar, 1910: 169.
Isochroma C. Felder & R. Felder, 1874: pl. 83, figs. 18, 19. Type-species: *I. fallax* R. Felder, 1874: pl. 83, fig. 18, by monotypy. [Synonymized by Dyar, 1910: 169].
Jsochroma Felder & Rogenhofer, 1875, misspl.
Joschroma Neave, 1939, misspl.
Sarothroma Herrich-Schäffer, [1855]: 86. Type-species: *Phalaena punctigera* Stoll, 1790: 151, by monotypy. [Synonymized by Hopp, 1934: 1079].
Sciathos Walker, 1855: 752. Type-species: *Phalaena punctigera* Stoll, 1790: 151, by monotypy. [Synonymized by Dyar, 1910: 169].

Diagnosis. Except for *T. inornata*, the species of *Trosia* have the FW crossed, from distal third of costa to mid dorsum, by a row of dots representing the postmedial band.

Distribution. Southern United States, throughout Central America, to southern Brazil and Argentina.

Remarks. The species of *Trosia* can be easily distinguished from the other Trosiinae by the row of dots, forming the postmedial band, crossing the FW from costa to dorsum. The segregation into species is difficult, especially those phenotypes that compose the *dimas*-group, and this is further complicated by the fact that the genitalia characters are weak, as was pointed out by Forbes (1942: 400) and by Clench (1956: 9). The species treated here were included by Hopp (1934: 1081-82) in his *dimas-punctigera* group, who recognized six names as valid species and listing over 10 names as subspecies, forms or synonyms. Forbes (1942: 400-01) recognized nine species, again listing 10 names as synonyms. *Jsochroma* in reality is not a misspelling as, in Latin, there is no distinction between "*I*" and "*J*", as in *Iulius/Julius Caesar,* for example.

Key to species

1. FW with a row of dots across, forming the postmedial line **2**
   FW with no row of dots ..... ***inornata***
2. Uniformly dark gray, except the white veins and the row of black dots on the FW ..... ***nigra***
   Not like this **3**
3. Row of dots on the FW pink ..... ***roseipuncta***
   Row of dots on the FW black **4**
4. Ground color of both wings white on both sides **5**
   Ground color of both wings otherwise; if the FW is white, the HW is pink **8**
5. Thorax white dorsally ..... ***virginalis***
   Thorax with red or ochreous dots dorsally **6**
6. Black dots on the FW large, filling the vein interspaces ..... ***albida***
   Black dots on the FW small 7
7. FW length 12 mm or less ..... ***donckieri***
   FW length 15 mm or more ..... ***anax***
8. FW ground color smoked gray **9**
   FW ground color not smoked gray **14**
9. Thorax white spotted red dorsally **10**
   Thorax ochreous, not spotted red dorsally ..... ***chaconi***
10. FW with no white below the red costa ..... ***fallax***
    FW whitish or with a white fascia below the red costa **12**
12. FW with wide, semicircular, white area above dorsum ..... ***fumosa***
    FW without such area **13**
13. FW less than 15 mm, with the black dots disposed in a sinuous line ..... ***semirufula***
    FW more than 16 mm, with the black dots disposed in a nearly straight line ..... ***semirufa***
14. FW with the costa red **15**
    FW with the costa not red **16**
15. Aedeagus with a long cornutus (central Brazil do southern Mexico) ..... ***dimas***
    Aedeagus with a short cornutus (southeastern Brazil) ..... ***misda***
16. Thorax ochraceous above ..... ***flavida***
    Thorax dotted red above **17**
17. HW pink ..... ***incostata, obsolescens***
    HW pale yellow or buff **18**
18. HW buff, concolor with the FW ..... ***tolimata***
    HW pale yellow, not concolor with the FW ..... ***amarilla***

Trosia inornata **sp. n.**
Fig. 122

Diagnosis. This species is whitish, with no dots on thorax and on FW, except for a very small black dot on mid dorsum, close to the margin; red ventrally.

Description. Male (Fig. 122): 10 mm (24 mm wingspan). Light gray. Head, thorax and FW below red. FW light gray, costa rosy, a small black dot on mid dorsum, near margin. HW white. Abdomen light gray, a diffuse patch of pink scales at base, dorsally.

Male genitalia. An elongate triangle ending as a round tip, with short, small, sharp point. Valva with the dorsal rod evenly curved dorsad; sacculus nipple-shaped, elongate. Aedeagus slightly curved; cornutus thick, almost as long as the aedeagus.

Etymology. From the Latin *orno -atus* = decorate, preceded by suffix *in* = without; and is treated as a feminine Latin adjective.

Specimens studied. Holotype ♂, BRAZIL: DF, Planaltina, 15°53'S - 47°42'W, 1100m, 18.xi.1975 (*Becker,* 18646) (VOB).

Distribution. Known only from the type-locality.

Remarks. The smallest species in the genus, this plain species cannot be confused with any other *Trosia* species. Male genitalia similar to those of *T. incostata* (Fig. 149), but with aedeagus not expanded basad.

Trosia nigra Hopp, 1934
Fig. 123

Trosia dimas ab. *nigra* Hopp, 1934: 1082. Holotype ♂, PERU: [Puno] (NHMUK) [image examined].

Diagnosis. This species (Fig. 123) is uniformly dark gray, except for the white veins and the row of black dots across FW.

Specimens studied. Holotype image.

Distribution. Known from the type locality only, in the Andes, Peru, at mid elevation.

Remarks. This gray species cannot be confused with any other species of *Trosia*. No other specimen seems to exist in any of the collections examined (the image presented here is a reproduction of the image in Hopp (1934, pl. 161b)).

Trosia roseipuncta (Druce, 1906)
Fig. 84

Sciathos roseipuncta Druce, 1906: 408. Type ♂, PERU: [Carabaya], Quinton, 5000 ft (NHMUK) [image examined].

Diagnosis. This species (Fig. 84) is red; the FW rosy with the row of dots across the FW red.

Specimens studied. Type image.

Distribution. Peru, at high elevations.

Remarks. This species is similar to *T. semirufa* but the row of dots on FW are red, not black as in all the other species of *Trosia*. Described from at least two specimens representing both sexes. The male, labeled as mentioned above, is illustrated (Fig. 84).

***Trosia virginalis* sp. n.**
Figs. 115, 154

Diagnosis. This species is wholly white, except for the gray antennae, the fuscous tarsi and the typical row of small, black dots crossing the FW.

Description. Male (Fig. 115): 12-14 mm (28-32 mm wingspan). White. Head ventrally, vertex, and thorax below, golden ochreous; frons white. Antenna with flagellum white, pectinations gray. FW with a row of blackish dots crossing the middle, from distal third of costa to mid dorsum; costa golden below. Tarsi fuscous. Female unknown.

Male genitalia (Fig. 154). Uncus triangular, distal third constricted, ending in a sharp tip; valva with dorsal rod evenly curved; sacculus a broad triangular flap. Aedeagus straight, longer than valvae, basal half pear-shape, distal half thin; vesica with cornutus 2/3 as long as aedeagus.

Etymology. From the Latin *virgo -inis* = maiden, virgin; and is treated as a feminine Latin adjective.

Specimens studied. (6 ♂♂, g. s.: VOB 2195, 5341). Holotype ♂, MEXICO: Chi[apas], Teopisca, 1900 m, 23-26.vi.1981 (*Becker,* 43231) (VOB). Paratypes: 5 ♂♂ (3 g. s.), same data as holotype (VOB).

Distribution. Southern Mexico (at high elevations).

Remarks. This species is similar to *T. anax* and to *T. donckieri* but lack the red dots on the thorax dorsally. This and *T. inornata* are the only *Trosia* species with no dots on thorax.

Trosia albida (Dognin, 1905)
Figs. 112-114, 155

Edebessa albida Dognin, 1905: 120. Type ♂, PERU: [Puno], Carabaya, Santo Domingo (USNM, 29823) [examined].
Sciathos metaleuca Druce, 1906: 89. Type ♂, PERU: [Puno], Carabaya, Oconeque (NHMUK) [examined]. [Synonymized by Hopp, 1927: 274].

Diagnosis. The male (Figs. 112-114) is white with the FW costa and the dots on thorax ochraceous, and the abdomen pinkish ochreous. The FW length is 14 mm (32 mm wingspan), white with the black dots large, almost filling the vein interspaces, touching each other. The male genitalia (Fig. 155) with the uncus and the sacculus as short, acute triangles; valva with the dorsal rod long, thin, evenly curved dorsad. The aedeagus is short, thick, slightly bent dorsad; the cornutus slightly shorter than the aedeagus, thin, bent basally. Female specimens are not available for study.

Specimens studied. Types; 2 ♂♂ (1 g. s.: VOB 5343) (VOB).

Distribution. Andes; from Ecuador and Peru.

Remarks. Similar to *T. anax* and *T. donckieri.* The black dots forming the row on the FW large, whereas small in *T. anax* and *T. donckieri*. *Edebessa albida* was described from "*plusieur* ♂♂*"*; the male bearing a "Type ♂" label in Dognin's handwriting (Fig. 113) is illustrated. *Sciathos metaleuca* was described from an unspecified number of males, presumably a single one (Fig. 114), which is labeled as mentioned above.

Trosia tolimata Dognin, 1922
Fig. 111

Trosia incostata var. *tolimata* Dognin, 1922: 30. Holotype ♂, COLOMBIA: Tolima, Cañon del Tolima, 1700 m (*Fassl*) (USNM, 29821) [examined].

Diagnosis. The male of this species has both wings buff, concolorous (Fig. 111); the costa of FW not red

Specimens studied. The holotype only.

Distribution. Andes (Colombia).

Remarks. This species is similar to *T. albida* and to *T. incostata,* but *T. albida* has the wings pure white and FW costa red, and *T. incostata* has the HW red. Only the type specimen (Fig. 111) is known. It could be a form of *T. albida,* however more material from the region should be studied to clarify this. The image in Piñas (2006: 57, fig. 445), as *T. tolimata*, might be this, but has the HW pinkish, not buff and concolorous with the FW, as the type.

Trosia anax Dognin, 1923
Figs. 116-117, 153

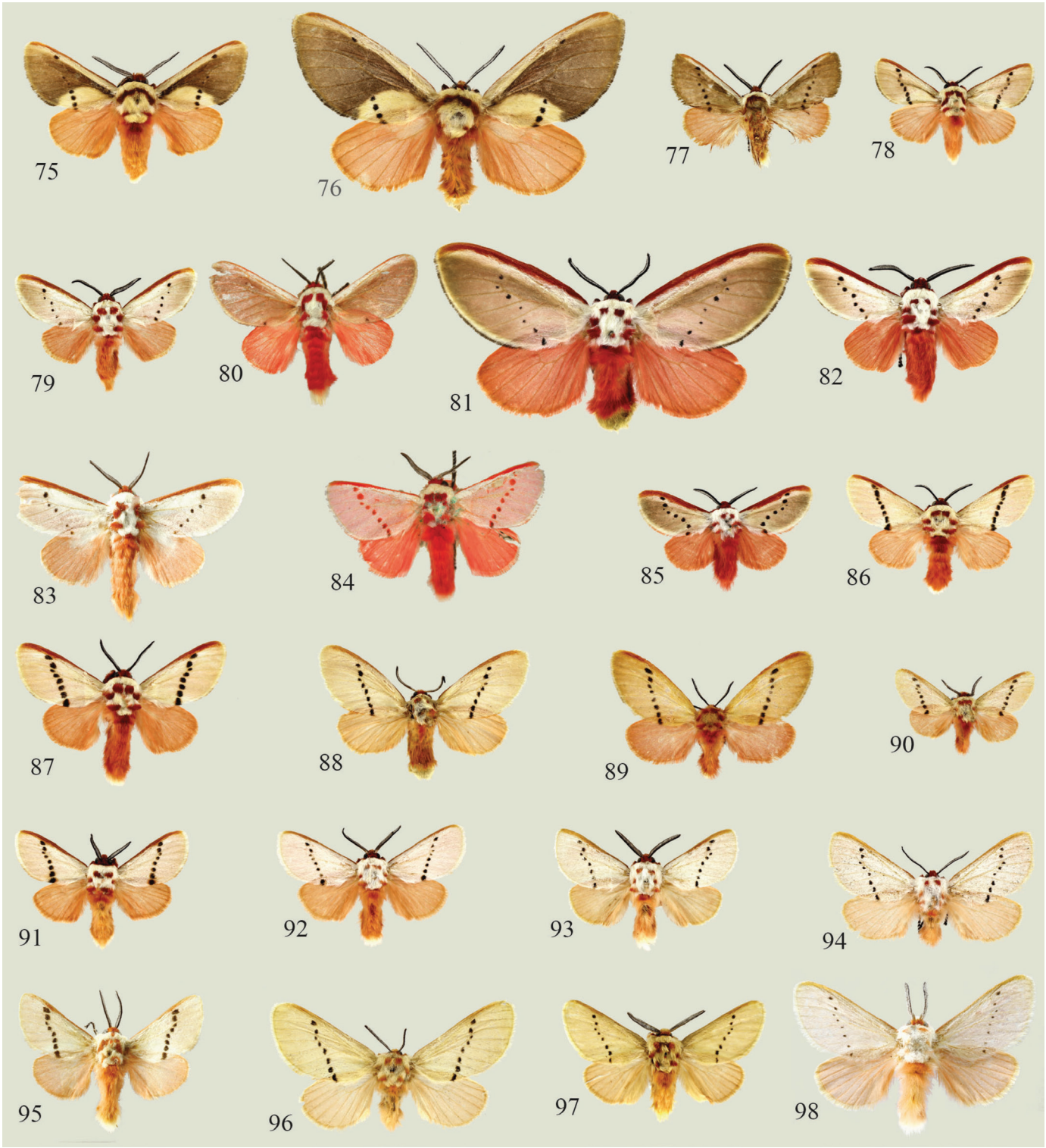
Trosia anax Dognin, 1923: 33. Holotype ♂, COLOMBIA: [Meta], Villavicencio (*Apollinaire*) (USNM, 29820) [examined].

Diagnosis. The male of this species (Figs. 116-117) is wholly white, with the dots on the thorax and the abdomen red; the FW length is 15-17 mm (35-39 mm wingspan) with the costa red. Male genitalia (Fig. 153) with uncus as an elongate, narrow pointed triangle; valva with dorsal rod long, thin, almost straight; the sacculus a short triangle. The aedeagus is short, straight; the cornutus almost as long as the aedeagus, bent basally. Female specimens not available.

Specimens studied. Holotype; 7 ♂♂ (2. g. s.: VOB 2193, 5342) (VOB), 9 ♂♂ (CPAC).

Distribution. Colombia, from the type locality only; and southern Brazil.

Remarks. The black dots on the FW are small; similar to



Figs. 75-98. *Trosia* adults, dorsal view. **75-78**. *T. fumosa*, Brazil: male, female, males; **79-83**. *T. semirufa*: **79**. male, Costa Rica; **80**. male type, Peru; **81**. female, Ecuador; **82**. male, Ecuador; **83**. =*amala*, male holotype, Mexico; **84**. *T. roseipuncta*, male type, Peru; **85**. *T. semirufula*, male paratype, Ecuador; **86-92**. *T. dimas*: **86, 87**. males, Brazil; **88**. female, Mexico; **89**. female, Brazil; **90-92**. males, Brazil; **93-95**. *T. misda*, Brazil: **93**, **94**. male, female; **95**. male holotype; **96-98**. *T. obsolescens*: **96**, **97**. female, male, Mexico; **98**. male type, USA.

those of *T. donckieri,* however *T. anax* is about 1/3 larger than *T. donckieri* and has the dots on thorax larger than the space between them. The genitalia (Fig. 153) of both are quite distinct. It also resembles *T. albida,* including in size, but has the dots on the FW much smaller. Except for the type (Fig. 117), the only other specimens that match it is a series in VOB, all from Brazil, sympatric with *T. donckieri.* It is very likely that the type is mislabeled.

Trosia donckieri Dognin, 1924
Figs. 118-120, 156

Trosia donckieri Dognin, 1924: 32. Holotype ♂, BRAZIL: SC [no further data] (*Donckier*) (USNM, 29824) [examined].

Diagnosis. This species is white with the dots on the thorax, and the abdomen red. The male (Figs. 118-119) has the FW length 9-13 mm (21-30 mm wingspan) with the costa narrowly red. The HW of some males are pink. The male genitalia (Fig. 156) with the uncus a short, equilateral triangle; valva with the dorsal rod short, evenly curved dorsad; the sacculus a short, blunt triangle. The female (Fig. 120) has FW length 15 mm (35 mm wingspan).

Specimens studied. Holotype; 20 ♂♂ (4 g. s.: VOB 2187, 2194, 5339, 5340), 1 ♀ (VOB), 1 ♂ (CPAC); 1 ♂ (image) (USNM).

Distribution. Brazil and Paraguay; described from SC, the species has been collected in SP, on the border with RJ, and farther west, in central Brazil.

Remarks. This species is small, with the HW often white; it is similar, and sympatric, in Brazil, with *T. anax,* but is much smaller, about 2/3 of the size of *T. anax.* Their genitalia (Fig. 156) are also quite distinct. Except for six specimens from SP, a series of 13 specimens, in VOB, are all from the Brazilian Cerrado biome (GO, MT, MA, PI). The specimens from SP have the red dots on thorax vestigial or absent, like in the type, whereas well marked in the specimens from the Cerrado.

Trosia fallax (C. Felder & R. Felder, 1874)
Figs. 102-106, 150

Isochroma fallax C. Felder & R. Felder, 1874: pl. 83, figs. 18, 19. Type ♂, [COLOMBIA]: Bogotá (NHMUK) [examined].
Trosia rosita Schaus, 1920: 145. Type ♂, GUATEMALA: Quirigua (USNM, 22481) [examined]. [Synonymized by Forbes, 1942: 401].
Trosia pulla Forbes, 1942: 401. Holotype ♀, PANAMA: Canal Zone, Barro Colorado, 10.x.1934 (*Bates*) (MCZ) [examined]. **Syn. n.**

Diagnosis. This species has the thorax and the FW above light gray with no white below red costa; the thorax and the wings, below, are reddish; the HW pink or gray. The male FW (Figs. 102, 104, 105) length is 12-14 mm (28-33 mm wingspan); the female 18-22 mm (40-49 mm wingspan). The male genitalia (Fig. 150) with the uncus a long, narrow triangle; the valva with the dorsal rod almost straight; the sacculus a broad, blunt triangle. The aedeagus is straight; the vesica with a thin, twisted cornutus, as long as the aedeagus.

Specimens studied. Types; 8 ♂♂ (4 g. s.: VOB 2188, 2191, 2192, 5344, 5345), 7 ♀♀ (VOB), 3 ♂♂, 3♀♀ (CPAC).

Distribution. Guatemala to central Brazil.

Remarks. This species is easily distinguished by the ground color of the FW light gray, and the absence of white below the red costa (the type has the FW partially faded towards base). Some females have HW pale or light gray, as in the type of *T. pulla. Isochroma fallax* was described from an unspecified number of specimens from both sexes, the male bearing a label "Type", and labels in Felder's handwriting (Fig. 104) is illustrated. *Trosia rosita* was described from an unspecified number of males, presumably the single specimen (Fig. 105) labeled as mentioned above. As pointed out by Forbes (1942: 401) the illustration of *T. rosita* in Hopp (pl. 160g) does not represent this species but fits better the red form of *Thoscora rubra* Jones, whereas the figure labeled *T. fallax* (pl. 160g) is a fair representation of *T. fallax*. *Trosia pulla* Forbes, described from a specimen with the ground color of both wings gray (Fig. 106), is a female of this species.

Trosia flavida Dognin, 1911
Figs. 107-108, 151

Trosia flavida Dognin, 1911: 59. Holotype ♂, COLOMBIA: [Cundinamarca], Bogotá (USNM, 29825) [examined].
Trosia flava Hopp, 1934: 1079, misspl.

Diagnosis. This species (Figs. 107, 108) is orange-salmon; the antenna is black, thick; the FW length is 16-18 mm (36-42 mm wingspan), with the black dots across the FW large, rectangular. The male genitalia (Fig. 151) has the sacculus nipple-shaped; the basal half of the aedeagus is bulbous, the cornutus is thin, half as long as the aedeagus.

Specimens studied. Holotype; 8 ♂♂ (2 g. s.: VOB 5346, 5347) (VOB).

Distribution. Andes, known from high elevations in Colombia and Ecuador.

Remarks. This species is similar to *T. obsolescens* and to *T. incostata*, but easily distinguished from those by its much thicker antennae and the larger rectangular dots on FW (smaller, round in *T. obsolescens* and in *T. incostata*). The image in Piñas (2006: 57, figs. 446), misidentified as *T. tolimata,* represents *T. flavida,* as shown by the rectangular dots on FW.

Trosia chaconi **sp. n.**
Figs. 109-110, 152

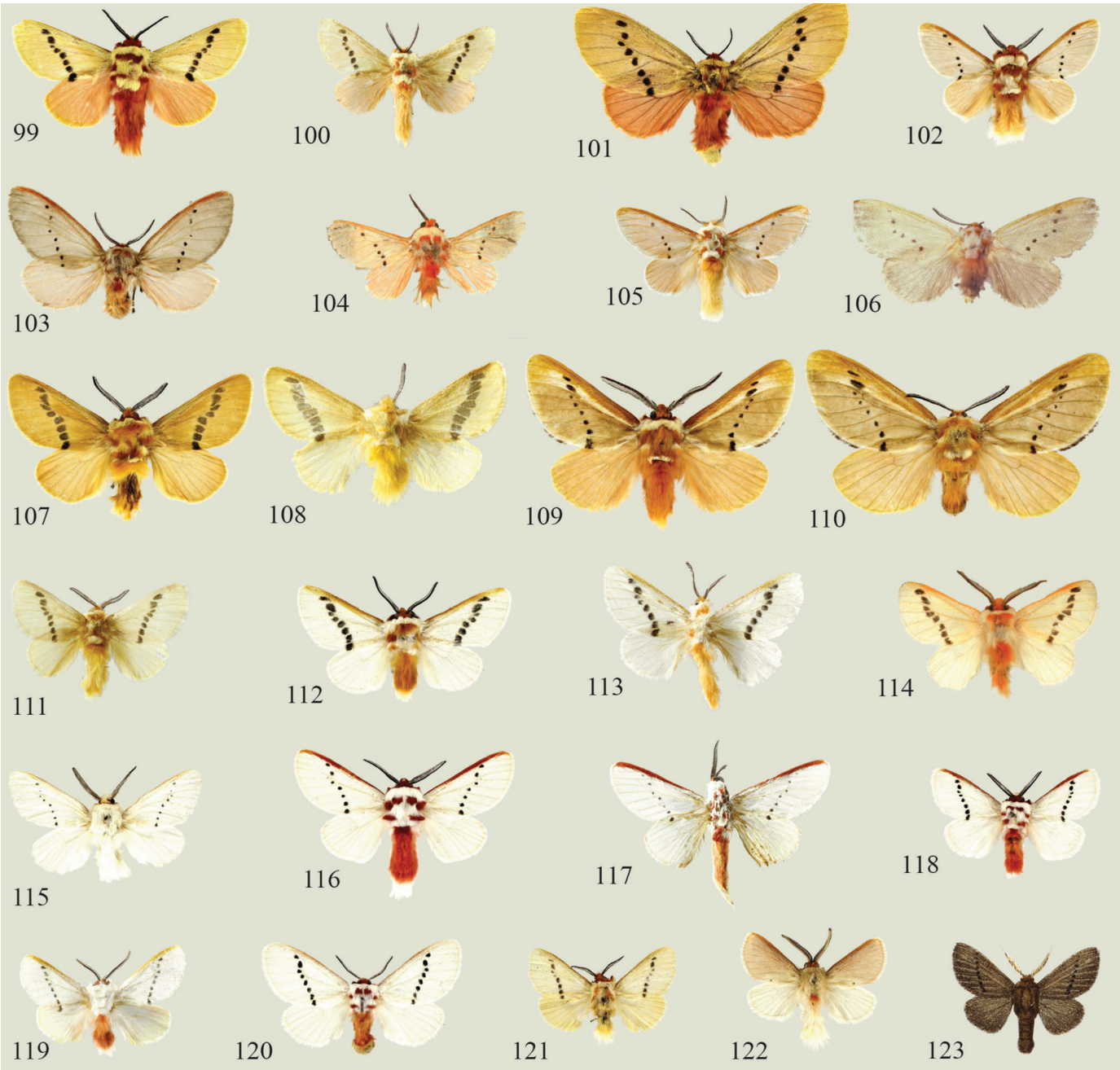
Diagnosis. This species is orange-ochreous; the FW has a wedge-shaped white fascia, expanded gradually, running from base, along cell, to near apex.

Description. Male (Fig. 109): 16-20 mm (40-45 mm wingspan). Head ochreous. Antenna black. Body and wings pinkish-ochreous ventrally. Thorax ochreous, patagia and posterior margin white. FW with costa orange; a white, wedge-shaped white fascia from base, along the cell, to termen, below apex; a sinuous row of black dots between veins, from distal third of costa to mid dorsum; termen and dorsum bordered white; cilia black from mid termen to tornus. Tarsi black, articulations with white scales. HW pinkish. Female (Fig. 110): 22-23 mm (50-52 wingspan); antennae short-ciliated; wings broader than in males.

Male genitalia (Fig. 152). Uncus basal third triangular, distal third thin, tapering to a sharp tip; valva with dorsal rod slightly curved; sacculus a short, acute triangle. Aedeagus shorter than valvae, oblong; cornutus straight, half as long as aedeagus.

Etymology. Named after the Costa Rican naturalist Isidro Chacón, a colleague and friend with whom the author shared long hours having a great time collecting at light; it is treated as a Latinized noun in the genitive case.

Specimens studied. 17 ♂♂ (2 g. s.: VOB 5355, 5356), 2 ♀♀ (1 g. s.: 5357). Holotype ♂, COSTA RICA: Guanacaste, Est Cacao, Lado SO Vol. Cacao, Parque Nacional Guanacaste, 1000-1400 m. v. 1992 (*Janzen & Hallwachs*) (USNM). Paratypes: 1 ♂, same data as holotype; 6 ♂♂, 2 ♀♀, Cartago, Tapanti, 1200-1700 m, 20.viii-5.ix.1999 (*Becker,* 119161) (VOB); 1 ♂, Puntarenas, Monteverde, 1300-1400 m, 20-21.vii.1982 (*Janzen & Hallwachs*); 1 ♂, Puntarenas, Monteverde, Las Nubes, 14 km NW of Monteverde, 31.vii.1981 (*Janzen & Hallwachs*) (VOB); 2 ♂♂, Heredia, 6 km ENE Vara Blanca, 1950-



Figs. 99-123. *Trosia* adults, dorsal view. **99-101**. *T. incostata*: **99**. male, Ecuador; **100**. male type, Venezuela; **101**. female, Brazil. **102-106**. *T. fallax*: **102**. male, Costa Rica; **103**. female, Brazil; **104**. male holotype, [Colombia]; **105**. =*rosita*, male type, Guatemala; **106**. =*pulla*, female holotype, Panama. **107, 108**. *T. flavida*, males: **107**. Ecuador; **108**. holotype, Colombia. **109**, **110**. *T. chaconi*, paratypes, Costa Rica: male, female. **111**. *T. tolimata,* male holotype, Colombia. **112-114**. *T. albida*, males: **112**. Ecuador; **113**. type, Peru; **114**. =*metaleuca*, type, Peru; **115**. *T. virginalis*, male holotype, Mexico. **116**, **117**. *T. anax*, males: **116**. Brazil; **117**. holotype, Colombia. **118-120**. *T. donckieri*, Brazil: **118**. male; **119**. male holotype; **120**. female; **121**. *T. amarilla*, male, Brazil. **122**. *T. inornata*, male holotype, Brazil; **123**. *T. nigra*, male, Peru.

2050 m, 10.18333, ▫ 84.11667, 18-19.iii.2002 (*Epstein*) (USNM); 2 ♂♂, Cartago, Tapanti, (High Peak), 1600 m, 9.vii.1998 (*Wells* & *Valverde*) (LACM). PANAMA: 5 ♂♂, Chiriqui, Los Pozos, ca. 19 km NW of Volcan, Mt. Totumas, 1900 m, 8.88425 -82.64639, 7-20.viii.2012 (*MacDonald*) (MSU).

Distribution. Known only from Costa Rica and Panamá, at high elevations.

Remarks. This species resembles *T. flavida* and *T. obsolescens;* but is easily recognized by the white dash below the ochreous costa and by the long, thick, black male antennae. Gowin (2017: pl. 7:22, 42:4) illustrates two males, from La Fortuna, Chiriqui, and from Mount Totumas, Panama, respectively.

Trosia fumosa Hopp, 1934
Figs. 75-78, 143

Trosia dimas f. *fumosa* Hopp, 1934: 1081. Type ♂, [BRAZIL: MG?, RJ?) (*Zikan*) (?) [not found].

Diagnosis. This species is red with the dorsal dots on thorax large, linked to each other, forming a band around the anterior margin. The male FW (Figs. 75, 77, 78) length is 13-17 mm (30-39 mm wingspan), smoked gray, except for a white fascia below the costa and a large, semicircular white area on the dorsum, extending from the base to the tornus. In some specimens the gray area of FW is faded, almost blending with the white area (Fig. 78), while in others it is wholly fuscous (Fig. 77). The male genitalia (Fig. 143) has the uncus triangular, with the edges slightly concave; the sacculus is nipple-shaped. The aedeagus has a long cornutus, nearly ¾ the length of the aedeagus. The female FW length (Fig. 76) is 15-25 mm (34-55 mm wingspan).

Specimens studied. 68 ♂♂ (2 g. s.: 2183, 5354), 4 ♀♀ (VOB).

Distribution. Atlantic Forest of southeastern Brazil, from BA to SP.

Remarks. This species was described from an unspecified number of specimens. In the original description Hopp (1934: 1081) did not state how many specimens he had, neither the locality they were collected, saying that he had received the material from Zikán. Zikán was a Swiss collector who lived all his life in Passa Quatro, south of Minas Gerais State, on the border with São Paulo, and at Itatiaia, Rio de Janeiro, not far from Passa Quatro. This distinct species, well-illustrated in Hopp (1934: pl. 160f) is common along the Atlantic Forest of southeastern Brazil. A series of 35 males from SP: São José do Barreiros (*Thöny*), collected at the same light, in the same nights, show some variation: some specimens represent the typical form, with the large white patch on FW (Fig. 75), on the other extreme some specimens show the FW wholly fuscous (Fig. 77), and others in between. Some of the specimens with fuscous FW have the thorax fuscous dorsally, not white (Fig. 77).

Trosia semirufa (Druce, 1906)
Figs. 79-82, 144

Phalaena punctigera Stoll, 1790: 151. Syntypes ♂, ♀, SURINAM: [no further data] [presumably lost], preocc. (Linnaeus, 1758 [Noctuidae]).
Sciathos semirufa Druce, 1906: 89. Type ♂. PERU: [Puno], Carabaya, Quinton, 5000 ft (NHMUK) [examined].
Trosia punctigera var. *amala* Dyar, 1910: 170. Holotype ♂, MEXICO: Ver, Cordoba (USNM, 13547) [examined]. **Syn. n.**
Sciathos nigropunctigera Fletcher, 1982: 147, repl. name, **Syn. n.**

Diagnosis. This species is red, with the red dots on the thorax large, with the diameter larger than the space between them; the FW has a conspicuous white band below costa, from base to termen, below apex. The male FW length (Figs. 79, 80, 82, 83) is 13-17 mm (30-40 mm wingspan), with the costa red and the row of black dots almost straight. The male genitalia has the basal 2/3 of uncus triangular, then constricted, and expanded to a near round tip, ending in a sharp point. The valva has the dorsal rod evenly bent. The aedeagus (Fig. 144) is straight; the cornutus less than half the length of aedeagus.
The female FW length (Fig. 81) is 23-28 mm (50-62 mm wingspan).

Specimens studied. Types; 41 ♂♂ (4 g. s.: 2177, 2177, 5349-5351), 9 ♀♀ (2 g. s.: VOB 5352, 5353) (VOB).

Distribution. From southern Mexico, throughout Central America, south to SP, Brazil at low elevations.

Remarks. This species is similar to *T. semirufula* but easily distinguished by the large red dots on thorax, the diameter of which are larger than the space between them, and by the row of black dots forming almost a straight line. In *T. semirufula* the dots on the thorax are small, smaller than the space between them, and the row of black dots on the FW form a sinuous line. The genitalia of *T. semirufa* are similar to those of *T. fumosa,* but show some differences.

Phalaena punctigera was described from an unspecified number of specimens, at least from one of each sex. The original figures (Stoll, 1790, pl. 34, figs, 1, 1A) are rather crude but good enough to allow the identification. *Sciathos semirufa* was described from an unspecified number of specimens, presumably the single one illustrated (Fig. 80). The type is not more than a specimen with the black dots on the FW almost rubbed off, as shown by traces of them still present on the dorsum and towards the costa. A pair from Ecuador (Figs. 81, 82) which match the type of *T. semirufa,* and one male from Costa Rica (Fig. 79) which matches the type of *T. amala,* are illustrated here. Dyar stated "*Specimens from Brazil, the Guianas, and Central America are large and fully colored. Those from Mexico are smaller and have more or less white on discal area of the hind wings both above and below. For the latter I propose the varietal name* amala*."* The series of 50 specimens in VOB is represented by specimens ranging from Vera Cruz, Mexico, throughout Central America, south to Ecuador and Brazil. Some of the specimens from Brazil show no difference from those from Mexico. Forbes (1942: 401) regarded *T. amala* as a subspecies of *T. punctigera,* stating: "*The Nat. Mus. keeps the Central American specimens* (race *amala*) *separate from the type race from South America, but differences are slight, if any.*" In the NHMUK there is a specimen labeled "*haemorrhoidalis* Walker", regarded as a synonym of *T. punctigera* Stoll. Presumably this is a manuscript name as it has not been traced in any of the publications dealing with Megalopygidae.

Trosia semirufula **sp. n.**
Figs. 85, 145

Diagnosis. This species is red, with the red dots on the thorax small, their diameter smaller than the space between them. The FW is gray with the costa red and with a white band below, from base to termen, below apex; the row of black dots on the FW forming a sinuous line.

Description. Male FW (Fig. 85) 12-14 mm (30-34 mm wingspan). Body ventrally, head, abdomen, and wings underside, red; antennae and legs black, tarsal articulation with white scales. FW gray; costa red, a narrow white band below costa, from base to below apex; termen, tornus and dorsum white, tinged red on tornus; black dots forming the postmedial band sinuous. Female unknown.

Male genitalia (Fig. 145). Uncus with the basal third triangular, distal third narrow, ending in a sharp tip. Valva with costal rod slightly curved; sacculus triangular. Aedeagus straight; cornutus 3/4 as long as aedeagus.

Etymology. A diminutive of *semirufa*; and is treated as a feminine Latin adjective.

Material studied. 9 ♂♂ (1 g. s.: VOB 5348). Holotype ♂, BRAZIL: BA, Camacan, 15˚23'S - 39˚33'W, 800 m, iv.2021 (*Becker*); Paratypes: 5 ♂♂, same data as holotype; 1 ♂, BRAZIL: MG, São Roque de Minas, 18˚36'S - 46˚32'W, 900 m, 9-10.xi.1988 (*Joerke* & *Mielke*); 1 ♂, MT, Chapada dos Guimarães, 800 m, 20.xi.1994, g. s. (*Becker,* 94141).; 1 ♂, ECUADOR: Pichincha, Los Bancos, Milpe, 00°01'N, 78°51'W, 1170 m, 4.vii.2017 (*Becker,* 155125) (VOB).

Distribution. Brazil, central and southeastern, and Ecuador, on the western side of the Andes; at mid elevation.

Remarks. This species is similar to *T. semirufa,* but has the dots on the thorax smaller, and the row of black dots on the FW forms a sinuous line. In *T. semirufa* the red dots on the thorax are larger than the diameter between them, and the row of black dots on the FW disposed as an almost straight line. The male genitalia are similar to those of *T. semirufa,* but the sacculus is broader in *T. semirufula.*

Trosia dimas (Cramer, 1775)
Figs. 86-92, 147

Phalaena dimas Cramer, 1775: 91. Type(s) ♂, [SURINAM: Paramaribo] 'West Indies' (*Baron Rengers*) [presumably lost].
Bombyx tricolora Fabricius, 1787: 114. Type(s)?, FRENCH GUIANA: Cayenne (*Rohr*) (ZM), [presumably lost]. [Synonymized by Dyar, 1910: 170].

Diagnosis. This species has the body red. The male FW length (Figs. 86, 87, 90-92) is 10-15 mm (25-35 mm wingspan), white to pale yellow with the costa red. The HW is red or pink. The male genitalia (Fig. 147) has the aedeagus straight; the cornutus is thin, straight, as long as the aedeagus. The female FW length (Figs. 88, 89) is 14-18 mm (33-42 mm wingspan), white, yellow, salmon or red.

Specimens studied. 26 ♂♂ (8 g. s.: 5364-5371), 9 ♀♀ (2 g. s.) (VOB).

Distribution. Southern Mexico, throughout Central and South America, south to central Brazil, in the lowlands.

Remarks. This species is similar to *T. misda* but is allopatric and with distinct male genitalia (Fig. 146): the cornutus is straight, very long, almost as long as the aedeagus in *T. dimas*, whereas short, half as long in *T. misda*. This is the most complicated species in the genus. The pattern is quite variable, both in size and in color, and very likely these different forms represent more than one species. The external characters are not discrete, merging into one another, not allowing a clear-cut distinction between the phenotypes. The phenotype with white FW dorsally (Fig. 86) is identical to *T. misda*. The phenotype with the FW dorsally yellow (Figs. 87, 88) resembles *T. incostata,* but the FW costa is red (not red in *T. incostata*). Some specimens of the yellow phenotype have the six red dots on thorax very large (Fig. 87), almost connecting to each other. However, this character is not clear-cut as other similar specimens have the dots small as in the white phenotype, others show a gradation between both. Despite these variations, the species is well defined by the long, straight cornutus on the vesica, which is very short in *T. misda,* the only species it can be confused with. Two females, from MA: Açailândia, have the FW salmon (Fig. 89), but the male, collected together on the same night, at the same light, clearly belongs to the white form (Fig. 90). Most of the specimens have the row of black dots arranged in a nearly straight line, but in others they form a slightly sinuous line. Specimens from dry areas tend to be smaller. In order to clarify the situation, more material, from a wide range of distribution, as well the study of immatures, and DNA barcoding, should help to clarify the status of the different populations. For the time being, with the material available, and based on morphological information, the conclusions presented here are the best that can be offered.

Phalaena dimas was apparently described from a single male (Cramer, 1775: pl. 59, fig. C). The figure is rather crude but allows recognition. The type locality is wrong as the species has not been recorded from any of the Caribbean Islands but is common throughout the lowlands of tropical America. At the time Cramer's work was published what was known as "West Indies" included the Guianas coast of South America. *Bombyx tricolora* was described from an unspecified number of specimens. According to Zimsen (1964: 547), the type material of this species, which belonged to Fabricius' collection, is not at the ZM, where most of his collection is deposited. The short description can fit any of the several species in the genus. Kirby (1892: 540) synonymized *Bombyx tricolora* under *Phalaena punctigera* Stoll. However, since Dyar (1910), who synonymized *B. tricolora* with *P. dimas*, Kirby's synonymy was not followed by any of the subsequent authors (Hopp, 1927, 1934), Forbes (1942), Fletcher, (1982). The pair in Piñas (2006: 56, figs. 439, 440) identified as *T. fumosa,* are misidentifications: they represent *T. dimas* (*T. fumosa* is endemic to the Atlantic Forest of southeastern Brazil). His *Trosia* sp. 1 (2006: 57: figs. 443, 444) represent the yellow form of *T. dimas*. Becker (1995: 192) listed all the names included by Hopp (1934: 1081-82), either as synonyms or as forms of *T. dimas,* as valid species, following Clench's suggestion (1956: 9).

Trosia misda Dyar, 1910
Figs. 93-95, 146

Trosia misda Dyar, 1910: 171. Holotype ♂, BRAZIL: PR, Castro (USNM, 12524) [examined].

Diagnosis. This species has the FW dorsally white or cream (Figs. 93-95), with the costa, and ventrally, red; the abdomen is red dorsally, white ventrally. The male FW length is 13-15 mm (30-35 mm wingspan), the female is 16 mm (37 mm wingspan). The male genitalia (Fig. 146) has the base of the aedeagus bulbous, with the cornutus straight, about half as long as the aedeagus.

Specimens studied. Holotype; 29 ♂♂ (7 g.s.: VOB 2186, 5372-5377), 2 ♀♀ (g. s.).

Distribution. Southern Brazil, along the Atlantic coast, from BA to RS.

Remarks. The cream-colored phenotype of this species resembles *T. flavida,* which is a different species (see *T. flavida*). Externally *T. misda* is indistinct from *T. dimas,* but is allopatric and has distinct genitalia (see figs. 146, 147). *T. misda* (originally a Schaus' manuscript name) was described from a series of specimens with yellowish FW, distributed throughout the lowlands of Tropical America, as stated by Dyar (1910:171): "*The type specimen is from Castro, Parana, Brazil. Others are from the Guianas, Venezuela, Peru, Costa Rica, and Mexico".* A specimen from São Paulo, next to the type-locality, compared with, and matching the type (Fig. 95),

was dissected and its genitalia characters are shared by others collected along the Atlantic Forest of southeastern Brazil. All specimens from central Brazil, north to Mexico, have a long cornutus, almost as long as the aedeagus, indicating that they belong to *T. dimas.* Therefore, all the specimens, from the Guianas northwards, mentioned by Dyar, belong to *T. dimas. Trosia misda* was synonymized with *T. dimas* by Hopp (1934: 1081), and reinstated to species level by Forbes (1942: 400).

Trosia obsolescens Dyar, 1899
Figs. 96-98, 148

Trosia obsolescens Dyar, 1899: 173. Type ♂, USA: AZ, Nogales, 15.viii.1998 (*Koeberle*) [USNM, 4104), here designated [examined]. [Synonymized by Hopp, 1934: 1082].

Diagnosis. This species (Figs. 96-98) has the thorax white with the dots dorsally, and the abdomen pinkish-ochreous. The male FW length is 15-17 mm (34-39. mm), pinkish yellow with the costa not red. The male genitalia (Fig. 148) with uncus a small, equilateral triangle; valva with the dorsal rod long, evenly curved dorsad; the sacculus is a wide, blunt triangle. The aedeagus is straight; the cornutus thin, as long as the aedeagus, bent near apex. The female FW length is 17-20 mm (39-45 mm wingspan). The HW is rosy.

Specimens studied. Type; 3 ♂♂ (1 g. s.: 5358), 7 ♀♀ (1 g. s.) (VOB).

Distribution. Southern United States to northern Guatemala, at high elevations.

Remarks. This species, like *T. incostata,* has the FW costa not tinged red. The male genitalia (Fig. 148) is similar to those of *T. incostata* and of *T. dimas,* including the aedeagus bearing a long cornutus. It is distinguished from *T. dimas* by the FW costa tinged red in *T. dimas.* Specimens from northern Mexico (Nuevo Leon, Santiago, south of Monterrey), to northern Guatemala (Huehuetenango, Barillas), all from high elevations, match perfectly the type as well as the figure in Powell & Opler (2009: pl. 20, fig. 28). The species is almost identical to *T. incostata,* however, Scott E. Miller (USNM) informed that DNA from specimens from United States and from Mexico, indicate that they are distinct. For this reason, they are maintained here as two different species: *T. obsolescens* is applied to the population of United States and from high elevations in northern Mexico and Guatemala, and *T. incostata* to the populations from the lowlands of Mexico to central Brazil.

Trosia incostata Schaus, 1905
Figs. 99-101, 149

Trosia incostata Schaus, 1905: 335. Type ♂, VENEZUELA: Merida (*Schaus*) (USNM, 8917 [examined]. [Synonymized by Hopp, 1934: 1082].

Diagnosis. This species (Figs. 99-101) has the thorax white dorsally with the dots, the ventral side, the HW, and the abdomen, red. The male FW length is 14-17 mm (33-39 mm wingspan), pale yellow, with the costa not red. The male genitalia (Fig. 149) with uncus a small equilateral triangle; valva with the long dorsal rod almost straight; the sacculus is an elongate triangle. The aedeagus is straight, expanded basally; the cornutus is thin, as long as the aedeagus, The female FW length is 15-20 mm (35-45 mm wingspan), slightly tinged pink. The male genitalia (Fig. 149) with the uncus a small triangle slightly constricted at distal third; the valva has the dorsal rod slightly curved dorsad; the sacculus an elongate triangle. Aedeagus straight, with the basal half expanded; the cornutus is straight, as long as the aedeagus.

Specimens studied. Type; 12 ♂♂ (6 g. s.: VOB 2176, 2179, 2184, 5360-5362), 5 ♀♀ (1 g. s.) (VOB).

Distribution. Southern Mexico to central Brazil.

Remarks. This species is similar to the yellowish form of *T. dimas*, including in the male genitalia, but *T. dimas* has the FW costa red. *Trosia dimas* is indistinct from *T. obsolescens,* including by the male genitalia (Figs. 148, 149) (see discussion under *T. obsolescens*). Described from an unspecified number of specimens, with no reference to sex. Only one specimen, labeled as mentioned above, was found in the USNM collection. This could be only a synonym of *T. obsolescens,* a species known from southern United States, northern Mexico to northern Guatemala, at high elevation.

Trosia amarilla Hopp, 1922
Figs. 121, 157

Trosia amarilla Hopp, 1922: 431. Holotype ♂, BRAZIL: MG, Passa Quatro, 9.iii.1918 (*Zikan*) (ZSBS) [not found].

Diagnosis. This species (Fig. 121) is small, pale yellow with the dots on thorax also very small; the FW length is 10-12 mm (24-28 mm wingspan), with the costa thinly bordered ochreous. The male genitalia (Fig. 157) has the basal third of uncus triangular, the apex is round, with a distal sharp tip. The valva has the sacculus broadly triangular, with the ventral margin slightly curved. The aedeagus is straight, with the cornutus also straight, thin, nearly as long as the aedeagus.

Specimens studied. 8 ♂♂ (1 g. s.: VOB 5378) (VOB).

Distribution. Known from high elevations in southern MG (type locality) and from Serra da Bocaina, eastern SP, next to the border with RJ.

Remarks. This species is similar to *T. obsolescens* but smaller, and readily separated by its yellow HW, concolorous with the FW. According to Hopp (1922: 431) the type was in his personal collection, which currently should be deposited in the ZSBS. Axel Haussmann (*pers. comm.*) informed that it could not be found there; it was not found either at the NHMV nor at the MNHU, according to their curators. The eight specimens examined here, collected by Hubert Thöny not far from the type-locality, match the illustration in Hopp (1934: pl. 160f).

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Figs. 124-157. *Endobrachys, Edebessa, Thoscora* and *Trosia* male genitalia. **124-128**. *Endobrachys*: **124**. *E. revocans.* **125**. *E. pulchella.* **126**. *E. placida.* **127**. *E. placidula,* paratype. **128**. *E. cratoplastis,* paratype. **129-133**. *Edebessa*: **129**. *E. purens.* **130**. *E. corinneae,* paratype. **131**. *E. circumcincta,* paratype. **132**. *E. nigropuncta.* **133**. *E. bicolor.* **134-142**. *Thoscora*: **134**. *T. brugea.* **135**. *T. pellucida.* **136-137**. *T. xanthogastra,* paratypes. **138**. *T. chrysogastra,* paratype. **139**. *T. ribbei.* **140**. *T. acca.* **141**. *T. rubrivena.* **142**. *T. rufa.* **143-157**. *Trosia*: **143**. *T. fumosa.* **144**. *T. semirufa.* **145**. *T. semirufula,* paratype. **146**. *T. misda.* **147**. *T. dimas.* **148**. *T. obsolescens.* **149**. *T. incostata.* **150**. *T. fallax.* **151**. *T. flavida.* **152**. *T. chaconi,* paratype. **153**. *T. anax.* **154**. *T. virginalis,* paratype. **155**. *T. albida.* **156**. *T. donckieri.* **157**. *T. amarilla.*

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LITERATURE CITED

Becker, V. O. 1995. *In*: Heppner, J. B. (Ed.), *Atlas of Neotropical Lepidoptera*. Checklist Part 2. Gainesville, Association for Tropical Lepidoptera. 243 pp.

Butler, A. G. 1878. On the Lepidoptera of the Amazons, collected by Dr. James W. H. Trail during the years 1873 to 1875. *Transactions of the Entomological Society of London* 1878: 39-84.

Clench, H. K. 1956. Contribution to the study of the Neotropical Megalopygidae (Lepidoptera). 1. The genera of the "*Trosia*" group. *Neotropica* 2: 9-14.

Cramer, P. 1775. *De Uitlandsche Kapellen*. V. 1 Amsterdam, Baalde. 155 pp.

Diniz, I. R., Braga, L., Lepesquer, C., Silva, N., Morais, H. 2013. *Lagartas do Cerrado. Guía de Campo.* Rio de Janeiro, Technical Books. 193 pp.

Dognin, P. 1905. Hétérocères nouveaux de l'Amerique du Sud. *Le Naturaliste* (2)27: 120.

Dognin, P. 1911. *Hétérocères nouveaux de l'Amerique du Sud* 3: 1-66.

Dognin, P. 1920. *Hétérocères nouveaux de l'Amerique du Sud* 18: 1-13.

Dognin, P. 1922. *Hétérocères nouveaux de l'Amerique du Sud* 20: 1-30.

Dognin, P. 1923. *Hétérocères nouveaux de l'Amerique du Sud* 23: 1-34.

Dognin, P. 1924. *Hétérocères nouveaux de l'Amerique du Sud* 25: 1-34.

Druce, H. 1891-1900. *Lepidoptera-Heterocera.* V. 2. *In*: Godman, F. D., Salvin, O. (Eds.), *Biologia centrali-americana. Insecta.* London, Porter. 622 pp.

Druce, H. 1906. Descriptions of some new species of Heterocera from Peru. *Annals and Magazine of Natural History* (7)17: 406-415, 18: 77-94.

Druce, H. 1909. Descriptions of four new species of Heterocera from Tropical America. *Annals and Magazine of Natural History* (8)3: 345-348.

Dyar, H. G. 1899. The megalopygid genus *Trosia,* with description of a new species. *Journal of New York Entomological Society* 7: 173-174.

Dyar, H. G. 1910. Notes on Megalopygidae. *Proceedings of the Entomological Society of Washington* 12: 161-176.

Dyar, H. G., Strand, E. 1913. Megalopygidae. *In*: Wagner, H. (Ed.), *Lepidopterorum catalogus* 16: 7-26.

Felder, C., Felder, R., Rogenhofer, A. 1874-1975. *Reise der österreich Fregatte Novara* (Zool) 2. (Abt.2): pls 75-120 (1874); pls 75-107 (1875). Vienna.

Fletcher, D. S. 1982. *In*: Fletcher, D. S., Nye, I. W. B. (Eds.), *The Generic Names of the Moths of the World.* 4. London, British Museum (Natural History). 192 pp.

Forbes, W. T. M. 1942. The Lepidoptera of Barro Colorado Island, Panama. 2. *Bulletin of the Museum of Comparative Zoology* 90: 263-406.

Gowin, E. 2017. *Mariposas Nocturnas.* Princeton, Princeton University Press. 143 pp.

Herrich-Schäffer, G. A. W. 1855. *Systematische Bearbeitung der Schemetterlinge von Europa* 6: 1-51.

Hodges, R. W. 1971. *Sphingoidea*. *In*: Dominick, R. B., *et al.* (Eds.), *The moths of America North of Mexico*, Fascicle. 21. London, Classey and R. B. D. Publications, 158 pp.

Hopp, W. 1922. Neue Dalceridae und Megalopygidae. (Lep.). *Deutsches Entomologische Zeitschrift* 1922: 429-434.

Hopp, W. 1927. Die Megalopygiden-Unterfamilie der Trosiinae (Lep., Megalopygidae). *Mitteilung Zoologische Museum Berlin* 13: 206-336.

Hopp, W. 1929. Nachtrag zu den Trosiinae (Lep., Megalopyg.). *Mitteilung Zoologische Museum Berlin* 15: 41-51.

Hopp, W. 1930a. Neue Megalopygidae. *Deutsches Entomologische Zeitschrift Iris* 44: 75-77.

Hopp, W. 1930b. Ergebnisse einer zoologischen Sammelreise nach Brasilien, insbesondere in das Amazonasgebiet, ausgeführt von Dr. H. Zerny. *Annalen des Naturhistorischen Museums in Wien* 44: 269-277.

Hopp, W. 1934. *Megalopygidae*, pp. 1071-1101. *In*: A. Seitz (Ed.), *Die Gross Schmetterlinge der Erde*. 6. Stuttgart, A. Kernen.

Hübner, J. 1816-[1826]. *Verzeichniss bekannten Schmetterlinge* [sic]. Ausgburg, Jacob Hübner. 431 pp; index 72 pp.

Jones, E. D. 1912. Descriptions of new species of Lepidoptera-Heterocera from south-east Brazil. *Transactions of the Entomological Society of London* 1912: 419-444.

Kirby, W. 1892. *A synonymic catalogue of the Lepidoptera-Heterocera*. London, Taylor & Francis. xii + 952 pp.

Möschler, H. B. 1878. Beiträge zur Schmetterlingsfauna von Surinam II. *Verhandlungen der Kaiserlich-Königlichen Zoologisch.-Botanischen Gesellschaft in Wien* 27: 629-700.

Neave, S. A. 1939. *Nomenclator zoologicus.* 2. London, Zoological Society. 1025 pp.

Piñas-Rubio, F. 2006. *Mariposas del Ecuador*. V. 2. *Microlepidoptera.* Quito, Ecuador, Compañía de Jesús. 89 pp. (CD with images).

Powell, J. A., Opler, P. A. 2009. *Moths of Western North America.* Berkeley, University of California. 369 pp.

Robinson, G. S. 1976. The preparation of slides of Lepidoptera genitalia with special reference to the Microlepidoptera. *The Entomologist's Gazette* 27: 127-132.

Schaus, W. 1892. Descriptions of new species of Lepidoptera Heterocera from Brazil, Mexico, and Peru. Part 2. *Proceedings of the Zoological Society of London* 1892: 318-341.

Schaus, W. 1900. New species of Heterocera from tropical America. *Journal of the New York Entomological Society* 8: 225-234.

Schaus, W. 1904. New species of American Heterocera. *Transactions of the American Entomological Society* 30: 135-178.

Schaus, W. 1905. Descriptions of new South American moths. *Proceedings of the United States National Museum* 29: 179-345.

Schaus, W. 1920. New species of Lepidoptera in the United States National Museum. *Proceedings of the United States National Museum* 57: 107-152.

Stoll, C. 1790. *In*: Cramer, P., *De Uitlandsche Kapellen.* (Supplement). Amsterdam, Baalde. 184 pp.

Walker, F. 1855. *List of specimens of lepidopterous insects in the collections of the British Museum.* V. 3. London, Trustees of the British Museum (Natural History). pp. 582-775.

Walker, F. 1856. *List of specimens of lepidopterous insects in the collections of the British Museum.* V. 7. London, Trustees of the British Museum (Natural History). pp. 1509-1808.

Walker, F. [1865]. *List of specimens of lepidopterous insects in the collections of the British Museum* V. 31. London, Trustees of the British Museum (Natural History). pp. 1-322.

Zimsen, E. 1964. *The Type Material of I. C. Fabricius.* Copenhagen, Munksgaard. 605 pp.

Trosia semirufa, Panama, Chiriquí,
photograph by Emmet Gowin

Edebessa nigrorufa, Panama, Cana,
photograph by Emmet Gowin

Edebessa nigropuncta (Megalopygidae, Trosiinae), Ecuador, Otonga