

Review of the Neotropical species of the family Pterophoridae, part II: Pterophorinae (Oidaematophorini, Pterophorini) (Lepidoptera)

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The Pterophoridae, subfamily Pterophorinae (Tribus: Oidaematophorini and Pterophorini), species of the neotropical fauna are reviewed, and species are redescribed. Many adults are illustrated in colour for the first time, along with line drawings of their genitalia. The examination of type specimens revealed several new synonyms: *Pterophorus salticola* Meyrick, 1913 is a junior synonym of *Hellinsia pelospilus* (Zeller, 1877); *Oedaematophorus pelodactylus* Berg, 1885 and *Pterophorus sacrificus* Meyrick, 1926 are junior synonyms of *Hellinsia surinamensis* (Sepp, 1855); *Pterophorus chionophanes* (Meyrick, 1930) and *Oidaematophorus chionoptilia* (T.B. Fletcher, 1940) are junior synonyms of *Hellinsia argutus* (Meyrick, 1926). Lectotypes are designated for: *Pterophorus salticola* Meyrick, 1913, *Pterophorus spermatias* Meyrick, 1908, *Pterophorus oxyntes* Meyrick, 1908, *Pterophorus discors* Meyrick, 1913, *Pterophorus crescents* Meyrick, 1926, *Mimesoptylus conjunctus* Zeller, 1877, *Pterophorus glochinias* Meyrick, 1908, *Pterophorus palmatus* Meyrick, 1908, *Pterophorus nivalis* Meyrick, 1908, *Pterophorus delospilus* Meyrick, 1921, *Pterophorus stadias* Meyrick, 1908, *Pterophorus malesanus* Meyrick, 1921, *Pterophorus trachyphloeus* Meyrick, 1926, and *Pterophorus suspiciosus* Meyrick, 1921. This study resulted in the recognition of 31 new species: *Hellinsia paccha*, *H. puruha*, *H. orellanai*, *H. sucrei*, *H. canari*, *H. pallens*, *H. cajanuma*, *H. cuculla*, *H. caras*, *H. pizarroi*, *H. ruminahui*, *H. magnus*, *H. quitus*, *H. postnigrata*, *H. huayna*, *H. benalcazari*, *H. papallacta*, *H. shyri*, *H. tupaci*, *H. aguilera*, *H. alfaroi*, *H. angela*, *H. lumbaquia*, *H. maldonadoica*, *H. milleri*, *H. montufari*, *H. morenoi*, *H. pichincha*, *Oidaematophorus pseudotrichyphloeus*, *Adaina atahualpa*, and *Chocophorus mayaensis*. In the genus *Hellinsia* the species are arranged in groups, predominantly based on the male genital structure. A comprehensive checklist of the species included.

Introduction

This volume is a continuation of part I (Gielis, 2006), which treated the subfamilies Ochyroticinae, Deuterocopinae, and Pterophorinae (Platyptiliini, Exelastini, Oxyptilini). This volume treats species of the tribus Oidaematophorini and Pterophorini described up to 2009. The Neotropical region is a faunistic area which comprises a large number of undescribed species. In this volume the choice has been made to describe a limited number of new species, mainly from Ecuador. A third volume with corrections and additions to the first and current volume is in preparation.

The Oidaematophorini are by far the richest in terms of species numbers, while the Pterophorini are represented by a few genera only, and include a limited number of species.

The tribus Oidaematophorini causes the most difficulties in the identification of species, because of their uniform appearance, especially in the genera *Hellinsia* Tutt (1905) and *Adaina* Tutt (1905). Gielis (2003) listed 195 described species of *Hellinsia*. In

the present review another 28 are newly described, mainly from Ecuador. This results in a total of 228 species of the genus, of which 119 are known of the Neotropical Region. Unidentified material suggests many species are still to be recognized. A similar situation exists in the poorly examined faunas of the Afrotropical, south-east Asian and Indo-Australian regions. This situation strongly urged me to consider in which way a grouping of species in this large genus could be established, based on the morphology of the male genitalia.

Material and methods

In this publication metric sizes are used.

A key to the genera and abbreviations are available in Gielis (2006).

Under "Material" in the descriptions only the (examined) type specimens are listed. Other specimens are not recorded individually. "Ecology" and "Distribution" record the collecting data and localities of all specimens examined. In the descriptions terms are used that may lead to confusion. In the wing description the terms costa and costal refer to the anterior part of the wing; termen and terminal refer to the outer margin; and dorsum and dorsal refer to the posterior part of the wing; cranial and rostral refers to the direction where the head is positioned; and caudal to the ninth segment of the abdomen.

Remarks on the recognizability of the species in the Tribus Oidaematophorini

In Pterophoridae the tribus Oidaematophorini is considered to be by far the most difficult to separate into genera and, within the genera, to differentiate the species. The characters which separate the genera are not easily recognizable and poorly described. With the study of genitalia, from the beginning of the 20th century onwards, a very large amount of additional information on the species became available. Especially in the genera *Hellinsia*, *Adaina* and *Oidaematophorus* this information led to a better definition of the species. The numbers of species involved in these three genera alone, rose to well over 250. This large load of information, fogged by a large number of species which can be recognized (but had not been described yet), was begging to be grouped into manageable entities. It is this overload of information which is a real problem for those who work on these moths on a worldwide basis. Consequently, I have tried to find a way to organize information concerning the genital shapes into groups, based on the saccular processes in the left and right valves.

The criteria are very similar to those used in phylogenetic studies. A character is evaluated and the various states examined. The system allows new shapes to be entered later on. This system includes only the characters of the sacculus of the left and right valve and is not intended to compose a formal data matrix, or the basis for phylogenetic studies.

A separate system based on characters of the female genitalia is possible, but with the present knowledge will not result in the same grouping as used for the males. Therefore such a system is not proposed, as it will only lead to confusion.

One of the main advantages of the system is the possibility to enter species which are unknown in the groups, and limit the possible number of species which show com-

parable characteristics externally and in the genital structures. Now these species may be defined in the system and get a place among look-alikes in the genital structures. A specimen from a completely different area with similar characteristics can be linked faster. Since we are only speaking of a grouping to facilitate recognition, the boundaries between the genera are of no importance. Once a species is grouped it is easier to consider which other species should be checked to find their identity. It is evident that this system is not without flaws. One thing to consider is the variation in genital structures that may exist. Another feature is interpretation, which may cause mistakes as in every key-like structure. To minimise this risk of mistaken interpretation, a description of the characters is given together with an example of the feature in a line drawing. The main disadvantage is the separation of species which are considered closely related on other characteristics, and which in the proposed system are placed in completely different groups because of their different genital structures.

The grouping system may be used in the genus *Hellinsia*, *Oidaematophorus*, *Adaina* and *Emmelina*. For practical reasons it has been used in the present review only for the genus *Hellinsia*. In the other genera the characteristics defining the genus are such that we meet a limited number of species in each of these genera. This circumstance does not urge to group the species in these genera, because this will not improve the overall view in these genera.

In the genus *Hellinsia* one group of species is excluded from the proposed system, and separated by their external characters. It is the group of *Hellinsia ochracealis* (Walker, 1864), which is characterized by moths with an almost uniformly brown-grey to black-brown colour of the fore wings and a ditto abdomen with more or less grey-white markings. In the review this species group will be named under the group name *ochracealis*. For the majority of the species the genital group code will be mentioned in the diagnosis of the species. The diagnosis is in these cases focussed on species in the same group code. For species of which only a female is known, or without abdomen, a code XXX is applied, followed by a discussion on species that look like the ones treated. Also in the latter group are placed those species that according to their description are expected to be placed in the genus *Hellinsia*, but of which the type specimens are not found in museums where these are mentioned to be deposited, nor in other museums visited.

Characteristics in the male genital valves, used for the grouping of species in the genus *Hellinsia*

The group code is written as a combination of a letter and a number. The letter indicates the presence or absence of the saccular process and the shape of this process in the left valve. The number indicates the presence or absence of the saccular process and the shape of this process in the right valve. Examples of the shapes are illustrated in figures A-L and 1-11, on figs 1 and 2 respectively.

Saccular process in left valve:

- A. absent
- B. single, straight or curved; not longer than 1/3 of valve length)*
- C. single, straight or curved; length between 1/3 and 2/3 of valve length)*

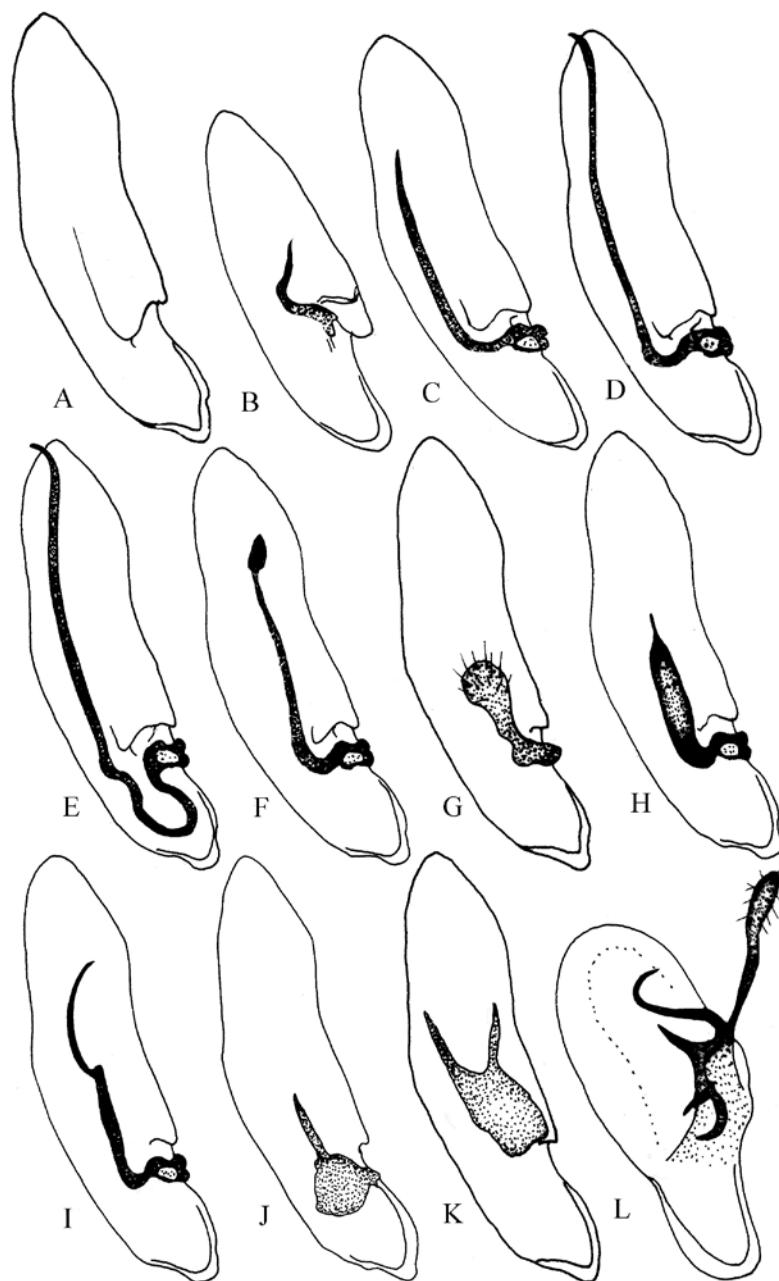


Fig. 1. Examples of saccular shapes in left valve.

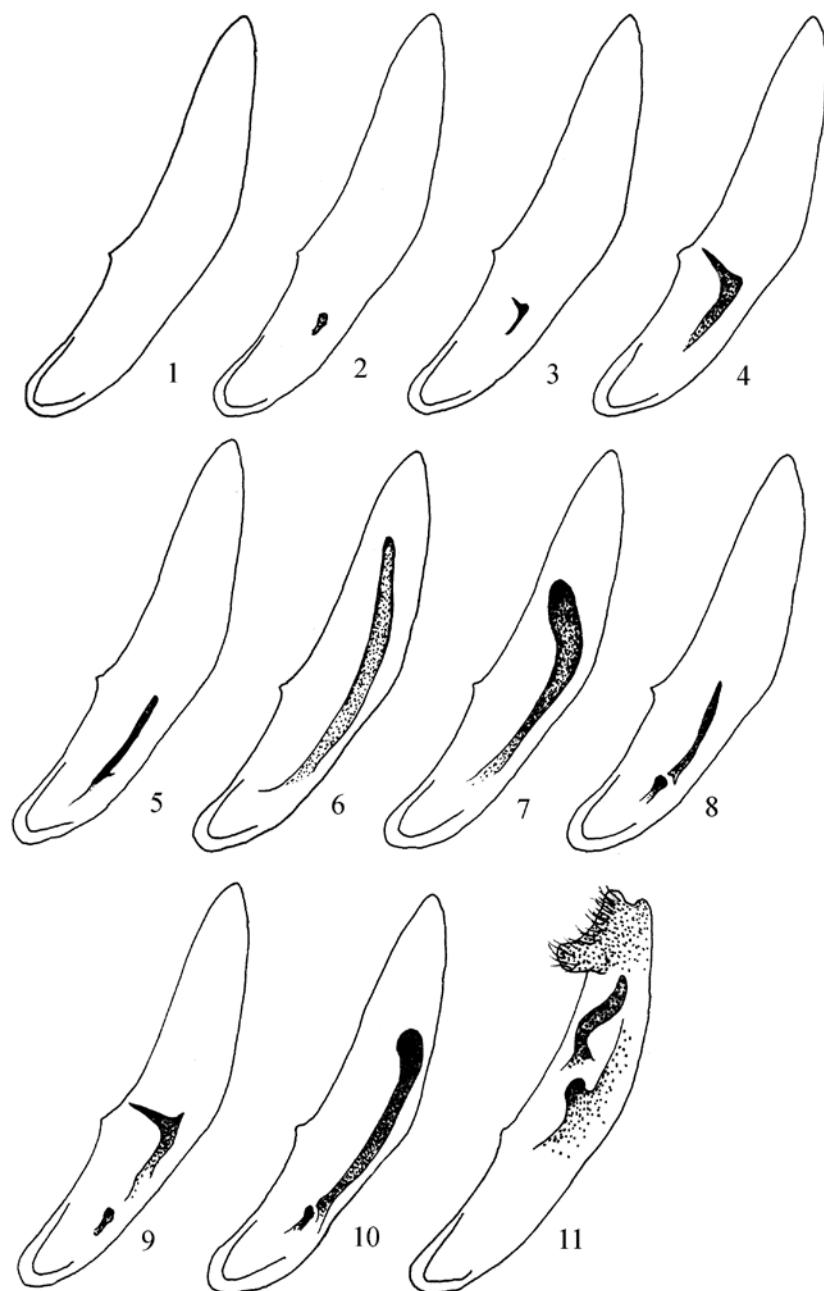


Fig. 2. Examples of saccular shapes in right valve.

- D. single, straight or curved; longer than 2/3 of valve length)*
- E. single, with a basal semicircular twist through the basal part of the valve (this shape is often seen in specimens from the genus *Oidaematophorus*, however, not exclusively)
- F. single, slender with a knob-like end of saccular process
- G. single, a short blunt knob, occasionally with separate spine(s)
- H. single, with a rather wide sacculus ending in an acute tip
- I. single, sacculus composed of two shape elements, a straight and a curved part
- J. single, basally with a sclerotized plate
- K. double spined
- L. complex, saccular structure multiple (these shapes are often seen in specimens from the genus *Emmelina*).

)* The length of the saccular process, compared to the length of the valve is measured in a straight line from the base of the process up to the most distant part of the process (tip or curvature), and not along the process.

Saccular process in right valve:

- 01. absent
- 02. single, a small knob or minimal hook
- 03. single, a small but well-defined hook, less than half the width of the valve
- 04. single, a large hook, bigger than half the width of the valve
- 05. single, a short nearly straight rod, shorter than half the valve length
- 06. single, a long nearly straight rod, longer than half the valve length
- 07. single, a rod with a club-like tip
- 08. double, two knobs and/or rod-like processes
- 09. double, a knob or rod and a hook
- 10. double, a knob or rod and a rod with a club-like tip
- 11. complex, saccular structures multiple (these shapes mostly belong to species in the genus *Emmelina*).

Checklist of the neotropical species of the Pterophoridae, subfamily Pterophorinae (tribus: Oidaematophorini, Pterophorini)

The checklist presents the currently valid name of a species, followed by the name of the author, year of publication, if described in another genus the original genus of the description is mentioned, the country of the locus typicus, and finally in the genus *Hellinsia* the group code (except in the group *H. ochracealis*, as discussed above).

In the genus *Hellinsia* species are arranged according to the sequence of the group code. Species with the same code are arranged alphabetically.

In *Oidaematophorus*, *Emmelina* and *Chocophorus* an alphabetical sequence is followed.

In *Adaina* a sequence is followed which is guided by the shape of the saccular process in the left valve. The arguments for this sequence are discussed, and it is used for the convenience of inserting species into this genus. There is no phylogenetic basis for this choice.

Tribus Oidaematophorini Bigot, Gibeaux, Nel & Picard, 1998

- Group: *Hellinsia ochracealis* (Walker, 1864)
- Hellinsia chamelai* (Gielis, 1992) (*Oidaematophorus*). Mexico.
- H. elhacha* Gielis, 1999. Costa Rica.
- H. ochracealis* (Walker, 1864) (*Utuca*). Brazil (Am).
- H. paraochracealis* (Gielis, 1992) (*Oidaematophorus*). Brazil (DF).
- H. spiculibursa* Gielis, 1996. Venezuela.
- H. powelli* (Gielis, 1996) (*Oidaematophorus*). Costa Rica.
- H. homodactylus* (Walker, 1864) (*Pterophorus*). USA. B01
- H. mollis* (Walsingham, 1915) (*Pterophorus*). Guatemala. B01
- H. paccha* **spec. nov.** Ecuador. B01
- H. angulofuscus* (Gielis, 1991) (*Oidaematophorus*). Argentina. B02
- H. nodipes* (Zeller, 1877) (*Mimeseoptilus*). Colombia. B02
- H. pelospilus* (Zeller, 1877) (*Leioptilus*). Peru. B03
- Pterophorus salticola* Meyrick, 1913. Peru. **Syn. nov.**
- H. praealtus* (Walsingham, 1915) (*Pterophorus*). Guatemala. B03
- H. puruha* **spec. nov.** Ecuador. B03
- H. emmorus* (Walsingham, 1915) (*Pterophorus*). Mexico (Ver). B05
- H. nauarches* (Meyrick, 1930) (*Pterophorus*). Peru. B05
- H. orellanai* **spec. nov.** Ecuador. B05
- H. paleaceus* (Zeller, 1873) (*Leioptilus*). USA (Oh/Tx). B05
- Leioptilus sericidactylus* Murtfeldt, 1880. USA (Mo).
- H. pseudobarbata* Gielis, 1999. Costa Rica. B05
- H. spermatias* (Meyrick, 1908) (*Pterophorus*). Brazil (SP). B05
- H. sucrei* **spec. nov.** Ecuador. B05
- H. beneficus* (Yano & Heppner, 1983) (*Oidaematophorus*). Mexico, D.F. B07
- H. canari* **spec. nov.** Ecuador. B07
- H. oxyntes* (Meyrick, 1908) (*Pterophorus*). Brazil (SP). B07
- H. hoguei* Gielis, 1996. Mexico (DF). B09
- H. discors* (Meyrick, 1913) (*Pterophorus*). British Guyana. C01
- H. hebrus* (Meyrick, 1932) (*Pterophorus*). Costa Rica. C01
- H. pallens* **spec. nov.** Ecuador. C02
- H. scripta* Gielis, 1999. Costa Rica. C02
- H. agraphodactylus* (Walker, 1864) (*Pterophorus*). Hispaniola. C03
- Pterophorus aspilodactylus* Walker, 1864. Jamaica.
- H. epileucus* (Walsingham, 1915) (*Pterophorus*). Mexico (Tab). C03
- H. lenis* (Zeller, 1877) (*Leioptilus*). Colombia. C03
- H. mauleicus* (Gielis, 1991) (*Oidaematophorus*). Chile. C03
- H. nigricalcarius* Gielis, 1996. Colombia. C03
- H. cajanuma* **spec. nov.** Ecuador. C05
- H. siskaellus* (Gielis, 1991) (*Oidaematophorus*). Argentina. C05
- H. solanoi* Gielis, 1999. Costa Rica. C05
- H. cuculla* **spec. nov.** Ecuador. C07
- H. tetraonipennis* (Walsingham, 1915) (*Pterophorus*). Guatemala. C07

- H. batallonica* Arenberger & Wojtusiak, 2001. Venezuela. C08
H. betsiae (Gielis, 1991) (*Oidaematophorus*). Chile. C08
H. caras **spec. nov.** Ecuador. C08
H. crescents (Meyrick, 1926) (*Pterophorus*). Colombia. C08
H. falsus (Barnes & Lindsey, 1921) (*Oidaematophorus*). USA (Ar). C08
H. fishii (Fernald, 1893) (*Pterophorus*). USA (Nev). C08
H. inquinatus (Zeller, 1873) (*Oedematophorus*). USA (Tx). C08
H. monserrate Arenberger & Bond, 1995. Colombia. C08
H. phloeochroa (Walsingham, 1915) (*Pterophorus*). Mexico (Ver). C08
H. pizarroi **spec. nov.** Ecuador. C08
H. ruminahuii **spec. nov.** Ecuador. C08
H. surinamensis (Sepp, 1855) (*Phalaena*). Surinam. C08
 Oedaematophorus pelodactylus Berg, 1885. Argentina & Uruguay. **Syn. nov.**
 Pterophorus sacrificus Meyrick, 1926. Colombia. **Syn. nov.**
H. conjunctus (Zeller, 1877) (*Mimeseoptilus*). Colombia. C09
H. magnus **spec. nov.** Ecuador. C09
H. paramoi Arenberger & Wojtusiak, 2001. Venezuela. C09
H. devriesi (B. Landry & Gielis, 1992) (*Oidaematophorus*). Ecuador, Galapagos Islands. C11
H. glochinias (Meyrick, 1908) (*Pterophorus*). Brazil (RJ). C11
H. argutus (Meyrick, 1926) (*Pterophorus*). Colombia. D01
 Pterophorus chionophanes (Meyrick, 1930) (*Pterophorus*). Peru. **Syn. nov.**
 Oidaematophorus chionoptilia (T.B. Fletcher, 1940). Colombia. **Syn. nov.**
H. balanotes (Meyrick, 1908) (*Pterophorus*). USA (Fl). D01
 Pterophorus aquila Meyrick, 1908. USA (Tx).
 Pterophorus serenus Meyrick, 1913. USA (NM).
H. fissuralba Gielis, 1996. Peru. D01
H. fusciciliatus (Zeller, 1877). (*Mimeseoptilus*). Colombia. D01
H. monteverda Gielis, 1999. Costa Rica. D01
H. quitus **spec. nov.** Ecuador. D01
H. obandoi Gielis, 1999. Costa Rica. D02
H. costalba Gielis, 1996. Peru. D03
H. sublatius (Walsingham, 1915) (*Pterophorus*). Mexico (Gue). D03
H. tinctus (Walsingham, 1915) (*Pterophorus*). Mexico (Gue). D03
H. hololeucus (Zeller, 1874) (*Leioptilus*). Chile. D04
H. phlegmaticus (Walsingham, 1915) (*Pterophorus*). Mexico (Ver). D04
 Pterophorus correptus Walsingham, 1915. Mexico (Ver).
H. postnigrata **spec. nov.** Ecuador. D04
H. palmatus (Meyrick, 1908) (*Pterophorus*). Brazil (SP). D05
H. montezerpae Arenberger & Wojtusiak, 2001. Venezuela. D08
H. grandis (Fish, 1881) (*Lioptilus*). USA (Cal). D09
 Pterophorus baccharides Grinnell, 1908. USA (Cal).
H. huayna **spec. nov.** Ecuador. D09
H. nephogenes (Meyrick, 1926) (*Pterophorus*). Ecuador, Galapagos Islands. E01
H. benalcazari **spec. nov.** Ecuador. E02
H. calais (Meyrick, 1930) (*Pterophorus*). Brazil (Pe). E02
H. longifrons (Walsingham, 1915) (*Pterophorus*). Mexico (Gue). E02

- Stenoptilia philocremna* Meyrick, 1930. USA (Tx).
- H. papallacta* spec. nov. Ecuador. E02
- H. basalis* (Möschler, 1890) (*Oedaematophorus*). Puerto Rico. E03
- H. barbatus* Gielis, 1996. Colombia. E04
- H. cervicalis* (Meyrick, 1932) (*Pterophorus*). Bolivia. E05
- H. ochricostatus* (Zeller, 1877) (*Leioptilus*). Colombia. E05
- H. nivalis* (Meyrick, 1908) (*Pterophorus*). Jamaica. F02
- H. shyri* spec. nov. Ecuador. F03
- H. delospilus* (Meyrick, 1921) (*Pterophorus*). Peru. G07
- H. ignifugax* (Walsingham, 1915) (*Pterophorus*). Guatemala. H03
- H. glaphyrotes* (Meyrick, 1908) (*Pterophorus*). Brazil & Argentina. I01
- H. stadias* (Meyrick, 1908) (*Pterophorus*). Brazil (RJ). I04
- H. mallecoicus* (Gielis, 1991) (*Oidaematophorus*). Chile. I08
- H. paraglochinias* Gielis, 1996. Peru. I08
- H. scribarius* (Meyrick, 1926) (*Pterophorus*). Colombia. I08
- H. cristobalis* (B. Landry & Gielis, 1992) (*Oidaematophorus*). Ecuador, Galapagos Islands. J02
- H. fissuripuncta* Gielis, 1999. Costa Rica. J02
- H. grandaevus* (Meyrick, 1931) (*Pterophorus*). Chile. J02
- H. obscuricilia* Arenberger & Wojtusiak, 2001. Venezuela. J03
- H. praeinigratus* (Meyrick, 1921) (*Pterophorus*). Peru. J03
- H. fumiventris* (Zeller, 1877). (*Mimeseoptilus*). Colombia. J05
- H. tupaci* spec. nov. Ecuador. J05
- H. malesanus* (Meyrick, 1921) (*Pterophorus*). Peru. J08
- H. aguilerae* spec. nov. Ecuador. XXX
- H. alfaroi* spec. nov. Ecuador. XXX
- H. angela* spec. nov. Ecuador. XXX
- H. bogotanus* (Felder & Rogenhofer, 1875) (*Mimeseoptilus*). Colombia. XXX
- H. cinerarius* (Philippi, 1864) (*Pterophorus*). Chile. XXX
- H. coquimboicus* (Gielis, 1991) (*Oidaematophorus*). Chile. XXX
- H. fuscotransversa* Gielis, 1996. Peru. XXX
- H. investis* Gielis, 1999. Costa Rica. XXX
- H. lumbaquia* spec. nov. Ecuador. XXX
- H. maldonadoica* spec. nov. Ecuador. XXX
- H. milleri* spec. nov. Ecuador. XXX
- H. montufari* spec. nov. Ecuador. XXX
- H. morenoi* spec. nov. Ecuador. XXX
- H. nigrosparsus* (Zeller, 1877) (*Leioptilus*). Peru. XXX
- H. ossipellis* (Walsingham, 1897) (*Pterophorus*). Dominican Rep. XXX
- H. pichinchae* spec. nov. Ecuador. XXX
- H. socorroica* (Gielis, 1991) (*Oidaematophorus*). Mexico, Socorro Island. XXX
- H. tepidus* (Meyrick, 1922) (*Pterophorus*). Costa Rica. XXX
- H. urbanus* (Walsingham, 1915) (*Pterophorus*). Guatemala. XXX
- H. zetes* (Meyrick, 1930) (*Pterophorus*). Brazil (Ba). XXX

Oidaematophorus eupatorii (Fernald, 1891) (*Alucita*). USA (NY).

O. grisescens (Walsingham, 1880) (*Oedaematophorus*). USA (Cal).

- O. nigrofuscus* Gibeaux, 1986. Venezuela.
O. phaceliae McDunnough, 1938. Canada (Alberta)
O. pseudotrichophloeus **spec. nov.** Ecuador.
O. trichophloeus (Meyrick, 1926) (*Pterophorus*). Costa Rica.
- Emmelina aethes* (Walsingham, 1915) (*Pterophorus*). Mexico (Ver).
E. buscki (Barnes & Lindsey, 1921) (*Adaina*). USA (Fl).
E. jason (Meyrick, 1930) (*Pterophorus*). Brazil (MG).
E. monodactyla (Linnaeus, 1758) (*Phalaena*). Europe.
 Phalaena bidactyla Hochenwarth, 1785. Germany.
 Alucita pterodactyla Hübner, [1805], nec Linnaeus, 1758. Europe.
 Pterophorus flaveodactylus Amary, 1840. Italy.
 Pterophorus cineridactylus Fitch, 1855: 848. USA (NY).
 Pterophorus naevosidactylus Fitch, 1855. USA (NY).
 Pterophorus impersonalis Walker, 1864. Venezuela.
 Pterophorus pergracilidactylus Packard, 1873. USA (Cal).
 Pterophorus barberi Dyar, 1903. USA (Az/Ca).
 Pterophorus pictipennis Grinnell, 1908. USA (Cal).
 Pterophorus monodactylus f. *rufa* Dufrane, 1960. Belgium.
E. suspiciosus (Meyrick, 1921) (*Pterophorus*). Ecuador.

- Adaina costarica* Gielis, 1992. Costa Rica.
A. simplicius (Grossbeck, 1917) (*Pterophorus*). USA (Fl).
 Adaina naiadopa Meyrick 1931. Paraguay.
A. excreta Meyrick, 1930. Peru.
A. parainvida Gielis, 1992. Costa Rica.
A. atahualpa **spec. nov.** Ecuador.
A. beckeri Gielis, 1992. Costa Rica.
A. bernardi Gielis, 1992. Costa Rica.
A. obscura Gielis, 1999. Costa Rica.
A. invida (Meyrick, 1908) (*Marasmarcha*). Brazil (SP).
A. primulacea Meyrick, 1929. Panamá.
A. everdinae Gielis, 1991. Argentina.
A. desolata Arenberger & Bond, 1995. Colombia.
A. perplexus (Grossbeck, 1917) (*Pterophorus*). USA (Fl).
A. thomae (Zeller, 1877) (*Leioptilus*). Virgin Is., St. Thomas.
A. planaltina Gielis, 1992. Brazil (DF).
A. zephyria Barnes & Lindsey, 1921. USA (Cal).
A. bipunctatus (Möschler, 1890) (*Pterophorus*). Puerto Rico.
A. hodias (Meyrick, 1908) (*Marasmarcha*). Brazil (SP).
A. bolivari (Cåpuse, 1987). Venezuela. **comb. nov.**
A. fuscahodias Gielis, 1992. Mexico.
A. ambrosiae (Mürtfeldt, 1880) (*Pterophorus*). USA (Fl).
 Pterophorus participatus Möschler, 1890. Puerto Rico.
A. scalesiae B. Landry, Roque & Matthews, 2004. Galapagos Islands.
A. praeusta (Möschler, 1890) (*Pterophorus*). Puerto Rico.
A. ipomoeae Bigot & Etienne, 2009. Guadeloupe.

Tribus Pterophorini Bigot, Gibeaux, Nel & Picard, 1998.

Patagonophorus murinus Gielis, 1991. Argentina.

Chocophorus alternaria (Zeller, 1874) (*Aciptilia*). Chile.

C. carabayus (Arenberger, 1990) (*Pterophorus*). Peru.

C. leptochorda (Meyrick, 1913) (*Alucita*). Ecuador.

Alucita trichogramma Walsingham, 1915. Costa Rica.

C. mayaensis **spec. nov.** Costa Rica.

C. solisi Gielis & Matthews, 1994. El Salvador.

C. venedictoffi Gielis & Matthews, 1994. Ecuador.

Remarks

Illustrations have been produced over a long time period, from 1979 up to now, causing a difference in quality in colour photographs as well as in the quality and technique of the line drawings. Due to logistic difficulties, reexamination and reillustrating of all material is not an option. I ask for understanding for this inconvenience.

Tribus Oidaematophorini Bigot, Gibeaux, Nel & Picard, 1998

Oidaematophorini Bigot, Gibeaux, Nel & Picard, 1998: 297.

Hellinsia Tutt, 1905.

- Hellinsia* Tutt, 1905a: 37.— Type species: *Pterophorus osteodactylus* Zeller, 1841, by original designation.
 = *Leioptilus* Wallengren, 1862: 21, homonym.— Type species: *Alucita tephradactyla* Hübner, [1813], by subsequent designation by Tutt, 1905. Homonym of *Leioptilus* Gray, 1860 (Coelenterata).
 = *Utuca* Walker, 1864: 951.— Type species: *Utuca ochracealis* Walker, 1864, by original designation and monotypy.
 = *Lioptilus* Zeller, 1867, emendation & homonym. Homonym of *Lioptilus* Cabanis, 1850 (Aves).

Diagnosis.— The genus is characterized by the wing venation as mentioned in the description. Further arguments by exclusion of structures in *Oidaematophorus* (see genus diagnosis and remarks at genus *Oidaematophorus*).

Description.— Head appressedly scaled. Frons smooth. Palpi slender, protruding just over eye-diameter. Apex of both fore wing lobes acute. Fore wing cleft from 2/3, first fore wing lobe without anal angle. Fore wing veins: R1 absent; R2, R3, R4 and R5 separate; Cu1 from near middle of distal M3 and Cu2 from near cell. Hind wings with two veins in third lobe. Middle legs with some scales to well-developed scale brush around base of spur pairs.

Male genitalia.— Valvae asymmetrical, with brush of hairs near base of valvae. Sacculus in left valve with pronounced spine or well-developed process, in right valve with small thorn or spine which occasionally is large. Tegumen arched, uncus tapering and well-developed. Vinculum arched, poorly developed. Aedeagus slightly curved, with cornutus.

Female genitalia.— Antrum in general left laterally placed, with limited sclerotized ridges. Bursa copulatrix vesicular, often well-developed. Signum may be absent, or in a manifold of shapes. Ductus seminalis mostly well-developed; originating near antrum.

Ecology.— In general hostplants belong to Compositae.

Distribution.— Cosmopolitan.

Remarks.— Phylogenetic studies may well cause the discovery of monophyletic entities in this genus, which by now is very heterogenic. A study as this is not intended in the present publication, which is a compilation of all that has been published so far, with numerous additions and findings of the author. I hope this publication will open possibilities for such a study.

Group *Hellinsia ochracealis* Walker

Diagnosis.— The group *Hellinsia ochracealis* is characterized by species with dark grey to blackish grey colour of the wings and paired whitish to ochreous spots on the abdomen.

***Hellinsia chamelai* (Gielis, 1992)**
 (figs 3, 159, 295)

Oidaematophorus chamelai Gielis, 1992: 86.

Material.— Holotype ♂: **Mexico**, Jalisco, Est. Biol. Chamela, 8-16.vii.1985 (J. Chemsak, ao.), gent CG 6142 (UCB). Paratypes: 2 ♂♂, 2 ♀♀, same locality, 8-16.vii.1985, 14-23.x.1986, 13-23.x.1986 (J. Chemsak, ao.), gent CG ♀ 6143 (UCB); 1 ♀, **Mexico**, 10.4 mi. S. Elota, Rt. 15, 23.viii.1964 (E.I. Schlinger) (UCB); 2 ♂♂, 1 ♀, **Costa Rica**, Guanacaste, Playa Tamarindo, 14.vi.1986 (J. Chemsak, ao.) (UCB, CG).

Diagnosis.— The species is characterized by brown-black unicoloured wings, combined with large double yellow-white spots on abdomen and long hind legs with pronounced scale bristles at base of first tarsal segment.

Description.— Male, female. Wingspan 22-25 mm. Head appressedly scaled, shining black, small white spot between collar and eye. Palpi black, curved up, as long as eye-diameter. Antennae black, shortly ciliated. Thorax black. Tegulae red-ferruginous. Metathorax black. Abdomen with dorso-lateral spots in segments 3 and 4, a pair of dorsal yellow spots at segment 7 and 8; segment 9 ferruginous-yellow. In male a white brush along genitalia. In female segment 9 is black and spots on segment 7 and 8 are absent. Hindlegs black and pronounced: in male with extended first tarsal segment and two pairs of spurs of unequal length. In female with plate-like, widened tarsal segments.

Fore wings cleft from 7/8, black. Fringes black. Underside black.

Hind wings and fringes black. Underside black. Venous scales black in double row. Dorsal row longer than costal row.

Male genitalia.— Valvae asymmetrical. Left valve wide lanceolate, with acute apex. Saccular arm "S"-shaped, slightly shorter than valve. Right valve with tapering apex, and short saccular spine. Vinculum with blunt central widening. Tegumen and uncus slender. Anellus arms short, subequal. Juxta widened below anellus arms. Aedeagus arched, short.

Female genitalia.— Ostium and antrum small. Ductus bursae slender. Bursa copulatrix vesicular, surface covered with numerous rosette-like structures, with central tube-like excavation. Apophyses posteriores 2 × longer than papillae anales. Apophyses anteriores absent.

Ecology.— The moth flies from June, July to October, and in December. Hostplant unknown. Specimens were flying in daytime around flowers of an arboreal *Croton* sp., at 3 to 6 meters above the ground; at night comes to light (Powell & Chemsak, 1994).

Distribution.— **Costa Rica:** Guanacaste; **Mexico:** Jalisco.

Remarks.— UCB - University of California, Berkley (Essig Museum). This abbreviation is not mentioned in Part 1.

The label of the genital slide of the holotype accidentally mentions for the collection: LACM.

Hellinsia elhacha Gielis, 1999
(figs 4, 296)

Hellinsia elhacha Gielis, 1999: 307.

Material.— Holotype ♀: **Costa Rica**, Guanacaste, 12 km SE de la Cruz, Cerro el Hacha, 25.vi.1992 (III curso parataxon), gent CG 3861 (Inbio). Paratype ♀: **Costa Rica**, Guanacaste, Est Murcielago, A.C.G., 100 m, 9-19.ii.1994 (C. Cano), gent CG 3879 (CG).

Diagnosis.— The species is characterized by its uniform brown colour with a single dark dash at costa above base of shallow cleft.

Description.— Female. Wingspan 20-21 mm. Head appressedly scaled, brown-grey, collar with some erect scales. Frons rounded. Palpi brown-grey, protruding, $1\frac{1}{3}$ × eye-diameter. Antennae grey-brown, shortly ciliated. Thorax and tegulae grey-brown. Hind legs brown-grey, with two pairs of spurs. Inner spurs longer than outer spurs, brown-grey with dark tip.

Fore wings cleft from 5/6, grey-brown. A single spot at costa just before base of cleft, heavily, rectangularly marked at costa and faintly and obliquely extending to center of wing. Fringes grey-brown. Underside as above.

Hind wings brown-grey. Fringes brown-grey. Underside first and second lobe brown-grey, third lobe brown-grey mixed with numerous white scales. Venous scales black, in double row, costal row extending into second lobe, dorsal row shorter.

Male genitalia.— Unknown.

Female genitalia.— Ostium left central positioned, poorly sclerotized. Antrum weakly sclerotized towards ductus bursae, which splits into ductus seminalis and ductus bursae part at posterior fourth of ductus bursae. Ductus seminalis vesicular with large ridge of spines, unilateral from the tip to equator level. Anterior part of vesica totally covered with numerous spines. Ductus bursae as long as ductus seminalis, progressing into bursa copulatrix, in distal part with numerous contorted ridges. Bursa copulatrix vesicular. No signum. Lamina ante-vaginalis arched, poorly sclerotized. Apophyses anteriores absent. Apophyses posteriores 2 × length of papillae anales.

Ecology.— The moth flies in February and June. Hostplant unknown.

Distribution.— **Costa Rica:** Guanacaste.

Hellinsia ochracealis (Walker, 1864)
(figs 5, 160, 297)

Utuca ochracealis Walker, 1864: 951.

Material.— Holotype: **Brazil**, Ega, not dated (Bates), no abdomen (BMNH) [examined].

Diagnosis.— The species is characterized by its unicolorous dark grey-brown wing, and large white spots median on the dorsum of abdomen.

Description.— Male, female. Wingspan 20-25 mm. Head appressedly scaled. Face dark brown, marginated creamy-white. Vertex dark brown, marginated creamy-white. Palpi porrect, slender, as long as eye diameter; colour dark brown. Antennae 2/3 of fore wing length, dark brown; shortly ciliated. Thorax dark brown; proximal margin and proximal 2/3 of tegulae bright orange. Metathorax creamy-white. Abdomen dorsally creamy-white, brown on segments 3-4. Ventro-lateral dark brown line in segments 1 and 2, and double dark brown line in segments 4 to 8. Legs dark to grey brown. The tarsal segments of hind leg creamy-white. Some pronounced scales at bases of distal pair of spurs in hind.

Fore wings cleft from 3/4, dark grey-brown with some scattered creamy-white scales along costa. Above bases of cleft, these scales condensed to an poorly developed spot. Fringes dark grey-brown. Underside similar to upperside.

Hind wings dark grey-brown. Fringes dark grey-brown. Underside dark grey-brown. Venous scales black, in double row.

Wing venation shows one vein in the third lobe of the hind wing (prep BM 14187, however difficult to interpret because preparation had not been de-scaled).

Male genitalia.— Valvae asymmetrical. Near bases pronounced hair-bristles. Left valve with long saccular arm, exceeding 3/4 of valve length; distal part curved and terminating at end of cucullus. Right valve with small thorn-like saccular protrusion, just before middle of valve. Tegumen bilobed, elongated. Uncus slender, as long as tegumen. Juxta stout. Vinculum narrow. Aedeagus straight, as long as valve length. No cornutus.

Female genitalia.— Ostium small, rounded. Antrum extended as long ribbed tube. Ductus bursae narrow, slender. Ductus seminalis vesicular. Bursa copulatrix vesicular, covered with dense layer of signa, in shape of rosettes. Apophyses posteriores 2 × longer than papillae anales. Apophyses anteriores absent.

Ecology.— The moth flies in January, March and July. Hostplant unknown.

Distribution.— **Brazil:** Amazona, Para; **Colombia:** Tolima; **Nicaragua;** **Peru:** Pasco.

Hellinsia paraochracealis (Gielis, 1992)
(figs 6, 161, 298)

Oidaematophorus paraochracealis Gielis, 1992: 86.

Material.— Holotype ♂: **Brazil**, D(istricto) F(ederal), Planaltina, 1000 m, 15.viii.1985 (Becker), gent CG 6140 (Becker nr. 57718). Paratypes 3 ♂♂, 4 ♀♀: same locality, 29.vii.1983, 20.viii.1982, 20.viii.1984, vii.1983, gent CG ♀ 6041, (Becker nr. 40347, 41159, 41273, 56552; CG).

Diagnosis.— The species is characterized by unicoloured grey-black fore wings, combined with eight pairs of white spots on abdomen.

Description.— Male, female. Wingspan 24–26 mm. Head appressedly scaled, dark brown-grey with white line near collar, extending around eye. Frons white. Palpi slender, curved-up, 1½ × eye-diameter; first segment white, second and third segment dark brown-grey. Antennae dark brown-grey, shortly ciliated. Thorax dark brown-grey, with poorly developed white pattern and near collar, two small orange spots. Tegulae orange. Metathorax white. Abdomen dark brown-grey dorsally with eight pairs of yellow-white spots. Ventro-lateral spot pairs as on dorsum and with a narrow mid-ventral line. Hindlegs dark brown-grey, with two pairs of spurs of unequal length.

Fore wings cleft from 5/6, dark brown-grey. In female more brownish tinged. Terminal fields, from base of cleft on, more greyish tinged. Fringes dark brown-grey. Underside as above.

Hind wings and fringes dark brown-grey. Underside as above. Venous scales dark ferruginous brown, in a double row. The dorsal row slightly more expressed than the costal row.

Male genitalia.— Male genitalia as in *ochracealis*, but differing in acute apex of valvae. Juxta with wider central part. Aedeagus is more slender built, especially in coecum region.

Female genitalia.— Female genitalia as in *ochracealis*, but differing in wider base of antrum, and smaller and rounded rosette spiculations lining corpus bursae.

Ecology.— The moth flies in July and August. Hostplant unknown.

Distribution.— **Brazil:** Distrito Federal.

Hellinsia spiculibursa Gielis, 1996
(figs 7, 299)

Hellinsia spiculibursa Gielis, 1996: 100.

Material.— Holotype ♀: **Venezuela**, San Estevan près Puerto Caballo, vi-vii.1877 (Hahnel de Sagan), gent CG 5040 (BMNH).

Diagnosis.— The species is characterized by its faintly marked brown fore wings and distinct extensive spiculation of ductus bursa in the female genitalia.

Description.— Female. Wingspan 18 mm. Head grey-brown, appressedly scaled. Erect scales along collar. Frons between antennae dark brown. Palpi protruding, slender, brown, $2 \times$ eye-diameter. Antennae shortly ciliated, brown. Thorax and tegulae grey-brown, toward metathorax more greyish tinged. Hindlegs brown-grey, with two pairs of spurs of unequal length.

Fore wings cleft from 3/4, grey-brown, rather broad in terminal half. Markings dark brown, consisting of discal spot, oblique spot before base of cleft and poorly developed spot at anal angle of first lobe. There is pale ochreous-white scaling dorsally from discal spot, an oblique spot near base of cleft, between these spots and in center of second lobe. Fringes grey-brown. Underside dark brown.

Hind wings dark grey-brown. Fringes grey-brown. Underside dark brown. Venous scales black, in double row. Costal row short, dorsal row extenting into second lobe.

Male genitalia.— Unknown.

Female genitalia.— Ostium oblique. Antrum sharply narrowing from the oblique ostium, short. Ductus bursae short. Bursa copulatrix vesicular, covered with numerous small spiculae, which are smaller in the periferal areas and bigger in the central part of the bursa.

Ecology.— The moth flies in June-July. Hostplant unknown.

Distribution.— **Venezuela.**

Hellinsia powelli (Gielis, 1996)
(fig. 162)

Oidaematophorus powelli Gielis, 1996: 96.

Material.— Holotype ♂: **Costa Rica**, Guanacaste, Santa Rosa NP Headquarters area, 280 m, 14.vi.1988 (Brown & Powell), gent CG 3499 (UCB).

Diagnosis.— The species is characterized by the uniform brown forewings with minute costal pale spot opposite base of cleft and brown thoracical and abdominal colour with white first abdominal segment.

Description.— Male. Wingspan 21 mm. Head dark brown, appressedly scaled. Palpi slender, curved up, $1\frac{1}{2} \times$ eye-diameter, greyish dark brown. Antennae filiform, shortly ciliated, brown-grey. Thorax, tegulae, metathorax and abdominal segments two to

nine dark brown. Hind legs grey-brown, with two pairs of spurs, both of unequal length.

Fore wings cleft from 7/8, dark brown. Costal area above base of cleft white. Some cream scales at 3/4 of costa. Fringes dark brown. Underside dark brown with white costal marking as above.

Hind wings dark brown, fringes dark grey-brown. Underside dark brown. Venous scales black, in double row, costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve elongated with long slightly curved saccular process, longer than valve. Right valve elongate with very small pointed saccular process. Tegumen bilobate. Uncus slightly curved shorter than tegumen. Vinculum arched, simple. Anellus arms symmetrical. Aedeagus short, straight, stout. Cornutus in shape of slightly curved, long blunt spine.

Female genitalia.— Unknown.

Ecology.— The moth flies in June. Hostplant unknown.

Distribution.— **Costa Rica:** Guanacaste.

Grouping according characteristics in male genitalia.

Hellinsia homodactylus (Walker, 1864)
(figs 8, 163, 300)

Pterophorus homodactylus Walker, 1864: 941.

Material.— Holotype ♂: U.S.A. (BMNH) [examined].

Diagnosis.— Group: B01. The species is characterized by its silvery white colour and faint markings.

Description.— Male, female. Wingspan 23-25 mm. Head appressed scaled, silvery white. Palpi porrected, slender, white, as long as eye-diameter. Antennae grey silvery white, shortly ciliated. Thorax, tegulae, abdomen and legs silvery white. Hind legs with two pairs of spurs of equal length.

Fore wings cleft from 2/3, silvery white. Sparse ferruginous faint spots at costa, at 3/4 of dorsum of first lobe; three faint spots at outer margin of second lobe, the one at anal angle almost obscure. Fringes silvery white. Underside silvery-white, double spot before base of cleft.

Hind wings silvery-white. Fringes white. Underside white. Venous scales pale ferruginous-white; in double row. Costal row extending into second lobe, dorsal row short.

Male genitalia.— Genitalia asymmetrical. Right valve elongate. Sacculus in middle of valve with small sclerotized ridge. Left valve a little more rounded. Curved saccular process, originating from 1/3 of valve length; length 1/4 of valve. Tegumen bilobed. Uncus moderate, slender. Vinculum slender. Juxta symmetrical, moderate. Aedeagus slightly curved, coecum small and constricted. Cornutus as small double, sclerotized plate.

Female genitalia.— Ostium flattened, laterally curved. Antrum almost rectangular, with two central longitudinal, poorly sclerotized, sclerites. Ductus bursae very short.

Bursa copulatrix long, vesicular, without signum. Ductus bursae and ductus seminalis almost from antrum, slender and extended, $1\frac{1}{2} \times$ length of bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores $2 \times$ papillae anales.

Ecology.— The moth flies in July. Confirmed hostplants are: *Aster* spec., *Solidago missouriensis* Nutt., *S. altissima* L., *S. canadensis* L., *S. rugosa* Mill., *S. curtisii* Torr. & A. Gray. (Matthews & Lott, 2005)

Parasites.— *Compsilura concinnata* (Meigen), *Oxynops anthracinus* (Bigot), *Pseudosiphona brevirostris* (Coquillett), *Tachinophyto floridensis* Townsend (Diptera, Tachinidae).

Distribution.— **Mexico:** Guerrero; **Nearctic:** U.S.A., Canada.

Hellinsia mollis (Walsingham, 1915)
(figs 9, 164, 301)

Pterophorus mollis Walsingham, 1915: 441.

Material.— Holotype ♂: **Guatemala**, Cerro Zumil, 1220-1525 m, no date 1880 (G.C. Champion), gent BM 18147 (BMNH). Paratype ♀: **Guatemala**, Zapote, Volcan de Fuego, 610 m, v-vi.1879 (Champion), gent CG 5088 (BMNH) [examined].

Diagnosis.— Group: B01. The species is characterized by the cream colour without markings. In the male genitalia the saccular spine is curved to sacculus.

Description.— Male, female. Wingspan 19 mm. Head, collar, thorax, tegulae and metathorax creamy-white. Head appressedly scaled, frons pale ochreous. Palpi as long as eye-diameter, creamy-white, slender and hardly curved up. Antennae greyish-cream, shortly ciliated and a small hair-brush at the basal segment well beyond the length of this segment. Hind legs white, with two pairs of spurs of unequal length.

Fore wings cleft from 3/5, creamy-white, without markings. Fringes creamy-white. Underside greyish-creamy.

Hind wings and fringes greyish-white. Underside greyish-white. Venous scales, ferruginous, in double row; costal row longer than dorsal row.

Male genitalia.— Valves asymmetrical. Left valve with short saccular spine, curved outwards to sacculus. Right valve without saccular process. Uncus short and slender. Tegumen bilobed. Anellus arms slender, half length of juxta. Vinculum narrow, curved. Aedeagus with acute tip. Cornutus as narrow sclerotized ridges.

Female genitalia.— Ostium oval. Antrum trapezoid. Ductus bursae short, $1\frac{1}{2} \times$ longer than wide. Bursa copulatrix slender, vesicular, without signum. Ductus seminalis longer than bursa copulatrix, slender. Apophyses anteriores medially placed, short. Apophyses posteriores $2 \times$ papillae anales.

Ecology.— The moths flies in May and June. The hostplant is unknown.

Distribution.— **Costa Rica;** **Guatemala;** **Mexico:** Querétaro; **Panama.**

Hellinsia paccha spec. nov.
(figs 10, 165, 302)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago, Macas, Proaño - Alshi, Rio Abanico, 1500 m, 7.i.1998 (V. Pelz), gent CG ♂ 4514 (CG). Paratypes 13 ♂♂, 1 ♀: **Ecuador**, Tungurahue, 20 km E Baños, San Francisco, 1290 m, 26.ix.2002, 21.x.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5245 (♀) (CG).

Diagnosis.— Group: B01. The species is characterized by the silvery white colour of the fore wings with orange markings, and the stout saccular process in the left valve.

Description.— Male, female. Wingspan 14-16 mm. Head appressedly scaled, silvery white. Collar pale brown-white, with long, erect, bifid scales. Palpi slender, protruding, silvery white, as long as eye diameter. Antennae shortly ciliated, silvery white. Thorax, tegulae, metathorax and abdomen silvery white (heavily descaled, difficult to judge). Fore, mid legs and hind legs silvery white. Hind legs with two pairs of spurs, the proximal pair the longer and lateral spurs longer than medial spurs.

Fore wings cleft from 2/3, silvery white with faint ochreous gloss. An oblique orange-brown spot before base of cleft and small brown spot in middle of dorsum of second lobe. Fringes silvery white. Underside pale grey, first lobe with only a few grey scales, second lobe entirely white.

Hind wings and fringes silvery grey. Underside grey white, in basal area of first lobe grey. Venous scales orange, in double row, costal row longer.

Male genitalia.— Left valve with wide, strongly curved saccular process, which is just over 1/3 of valve length. Right valve without saccular process. Left valve wide and rounded; right valve slightly curved, with almost parallel margins. Tegumen bilobed. Uncus rather short. Juxta wide, with two short anellus arms. Vinculum narrow, arched. Aedeagus simple; without cornuti.

Female genitalia.— Ostium positioned at mid-line; curved out. Antrum 2 × width of ostium, poorly sclerotized. Ductus seminalis vesicular, without significant sclerotization. Bursa copulatrix without sclerotization in top 1/4, linear sclerites up to middle, and spiculation in bottom half. Apophyses anteriores in shape of wide, acute ending progressions of eight sternite. Apophyses posteriores slender, 2 × length of the slender papillae anales.

Ecology.— The moth flies in September, October and January, at altitudes of 1200 to 1500 meters. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago, Tungurahue.

Etymology.— Paccha was the name of an Inca princess.

Hellinsia angulofuscus (Gielis, 1991)
(figs 11, 166, 303)

Oidaematophorus angulofuscus Gielis, 1991: 89.

Material.— Holotype ♂: **Argentina**, Salta, Rosario de la Frontera, Los Banos, 9.iv.1979 (Mis. Cient. Danesa, Sta. 72), gent CG 4103 (ZMUC). Paratype ♀: **Paraguay**, Asuncion, 15-30.vi.1905 (Babarczy), gent CG 4102 (ZMUC).

Diagnosis.— Group: B02. The species is characterized by the pronounced spot at the anal angle of the first forewing lobe. In the male genitalia the shape of the saccular process in the left valve differs from those in the other species in this group, by its slender and smoothly curved shape.

Description.— Male, female. Wingspan 16-17 mm. Head appressedly scaled, with some erect scales from the collar. Collar and face pale brown; between bases of antennae creamy-white. Palpi just exceeding eye-diameter; ferruginous white. Second segment as long as third. Antennae ferruginous-grey, shortly ciliated. Thorax, tegulae and

metathorax ferruginous white. Legs grey-white. Hind legs with first spur pair of unequal length, second spur pair of equal length.

Fore wings cleft from 2/3, colour creamy-white. Faint, oblique spot before base of cleft, costal dash above base of cleft and distinct spot at anal angle of first lobe; some dark scales near apex of second lobe. Fringes grey-white. Underside pale grey-white, gradually paler in outer fields.

Hind wings grey-white. Fringes grey-white. Underside grey-white. Venous scales black, in double row. Costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve slender. Sacculus with slender and smoothly curved spine at 1/3 of valve length. Left valve elongate, with slight lateral bulging of top. Sacculus with small curved spine. Right valve with small knob, along saccular ridge. Tegumen bilobed. Uncus rather short, slender. Vinculum arched, slender. Juxta stout, cauli asymmetrical. Aedeagus slender, with small vesicular widening at top.

Female genitalia.— Antrum funnel-shaped, gradually progressing into rather short ductus bursae. Bursa copulatrix vesicular, with numerous minute spiculae, near junction with ductus bursae. Ductus seminalis stout. Apophyses posteriores two and a half times the papillae anales. Apophyses anteriores short.

Ecology.— The moth flies in April and June. Hostplant *Wulffia baccata* (L.) Kuntze, 1891.

Distribution.— **Argentina:** Salta; **Brazil:** Sao Paulo; **Paraguay:** Asuncion.

Hellinsia nodipes (Zeller, 1877)
(figs 12, 167, 304)

Mimeseoptilus nodipes Zeller, 1877: 473.

Material.— Holotype ♂: **Colombia**, Bogota, n.d. (V. Nolcken), gent BM 14579 (BMNH) [examined].

Diagnosis.— Group: B02. The species is characterized by the broad fore wing with the black longitudinal line in the first lobe.

Description.— Male, female. Wingspan 27-31 mm. Head ochreous, appressedly scaled. Collar with narrow ring of dark brown scales. Palpi ochreous, with rough scaling at second segment; as long as eye diameter. Antennae faintly ringed pale and dark brown, shortly ciliated. Thorax, tegulae, metathorax and abdomen ochreous-brown. Fore legs with large brush of scales along distal half of tibia. Mid legs with pronounced scale-brushes at base of spur pairs. Hind legs pale brown-ochreous, with two pairs of spurs of unequal length; at base of spurs some scales.

Fore wings cleft from 2/3, brown-ochreous. Markings brown; group of scales at center and distal in discus; oblique spot well before base of cleft; longitudinal line in first lobe reaching from oblique dash before cleft to 2/3 of lobe; costal spot above base of cleft and scattered brown scales on wing. Fringes ochreous, mixed white at termen of second lobe. Underside ochreous mixed with brown scales in pattern as above.

Hind wings and fringes brown-grey. Underside ochreous-brown. Venous scales black, in double row, costal row longer than dorsal row.

Male genitalia.— Valves asymmetrical. Left valve with short, moderately curved saccular spine. Right valve narrower than left valve, with small knob at saccular ridge. Uncus short, slender. Tegumen bilobed. Anellus arms asymmetrical, 1/3 of

juxta. Vinculum flattened. Aedeagus acute, without cornutus.

Female genitalia.— Ostium left lateral positioned. Ostium oval. Antrum funnel-shaped, with two narrow sclerites. Ductus bursae short, narrow. Bursa copulatrix longitudinal, vesicular, without signum. Ductus seminalis long, slender. Apophyses anteriores absent. Apophyses posteriores three to four times length of papillae anales.

Ecology.— The moth flies in January, March, and May to July. Hostplant unknown.

Distribution.— **Colombia:** Bogota; **Costa Rica:** Cartago, Puntarenas; **Ecuador:** Carchi, Pichincha; **Mexico:** Veracruz; **Venezuela.**

Hellinsia pelospilus (Zeller, 1877)
(figs 13, 168)

Leioptilus pelospilus Zeller, 1877: 481.

Pterophorus salticola Meyrick, 1913: 170. Syn. nov.

Material.— Holotype of *Leioptilus pelospilus* Zeller ♂: (**Peru**), Chanchamayo, no date (Thamm), gent Ar. (MNHU). Lectotype of *Pterophorus salticola* Meyrick ♂ (designated here): **Peru**, Chanchamayo, no date, gent BM 18708 (BMNH) [examined]. Paralectotype ♂ (designated here): same data (BMNH).

Diagnosis.— Group: B03. The species is characterized by the pale ochreous fore wings with the dark brown apices of both lobes and dark costal spot above the base of the cleft.

Description.— Male. Wingspan 23-25 mm. Head appressedly scaled, ochreous-white, with brown margin of vertex near collar. Palpi ferruginous, slender, protruding. Antennae shortly ciliated, ferruginous.

Fore wings cleft from 3/4, creamy-white. Markings dark brown, consisting of faint longitudinal dash from wingbase to end of discal field, oblique spot before base of cleft, and extending into costal spot above base of cleft. Both apical fields are dark brown, with small white spots at anal region and apex of both lobes. Fringes grey-brown. Underside brown, with interrupted creamy-white dash along costa and dorso-basal spot near base of cleft.

Hind wings grey-brown. Fringes grey. Underside ferruginous-white. Venous scales ferruginous, in double row, costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical, left valve slightly more rounded in shape. Left valve with saccular spine about 1/4 valve length, slightly curved at apex. Right valve with pronounced saccular thorn. Uncus moderately long, slender. Tegumen bilobed. Anellus arms asymmetrical, one slightly longer. Aedeagus curved, with a slender coecum, apex acute with sclerotized ridge.

Female genitalia.— Unknown.

Ecology.— Flight period of moth unknown. Hostplant unknown.

Distribution.— **Ecuador:** Zamora; **Peru:** Chanchamayo.

Hellinsia praealtus (Walsingham, 1915)
(figs 14, 169, 305)

Pterophorus praealtus Walsingham, 1915: 445.

Material.— Holotype ♂: **Guatemala**, Totonicapam, 2600-3100 m, viii.1880 (G.C. gent BM 18152 (BMNH). Paratype ♀: **Guatemala**, Alta Vera Paz, Balheu, 1175 m, 3-5.ii.1880 (G.C. Champion), gent BM 17930 (BMNH) [examined]. Other paratype examined, but data not recorded.

Diagnosis.— Group: B03. Left saccular spine gradually curved. Right valve with small hook.

Description by Walsingham, 1915: "Antennae yellowish white, barred above with dark brown throughout. Palpi short, scarcely projecting beyond the face; yellowish white, shaded with dark brown on their outer sides. Head white, with a distinct brown collar above. Thorax yellowish white, slightly brown-shaded, the ends of the tegulae tipped with brown scales. Forewings white, much sprinkled with dark brown scales, which form a narrow and slightly diffused line along the costa, interrupted before and beyond by a broad costal patch at three-fourths, produced obliquely inward to the base of the fissure and thence diffused outwards to the tornus and termen; this is preceded by a dark spot on the middle of the cell, with another on the dorsum and little beyond it, and a costal spot before the apex is followed by another on the lower margin of the apical lobe; cilia marked with alternating white and brown patches. Exp. al. 22-24 mm. Hindwings greyish brown; hind lobe simple. Abdomen white, with transverse brown bars and mottling. Legs white, sprinkled and banded with brown".

Male genitalia.— Valves asymmetrical. Left valve with short, slightly curved saccular process. Right valve narrower and shorter, with small hooked saccular process. Uncus short and slender. Anellus arms asymmetrical, short; one-third of juxta. Vinculum arched. Aedeagus acute, without cornutus.

Female genitalia.— Ostium slightly excavated. Antrum almost rectangular, with a pair of small, longitudinal sclerites. Ductus bursae slender $3 \times$ antrum. Bursa copulatrix vesicular, with a pair of horn-like signa, both with a spiculate plate at the broad side. Lamina ante-vaginalis in shape of an arch. Apophyses anteriores absent. Apophyses posteriores three and a half times papillae anales.

Ecology.— The moth flies in February and August. Hostplant unknown.

Distribution.— **Guatemala**.

Hellinsia puruha spec. nov.
(figs 15, 170)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago Prov, Macas, Proaño - Inapula, CREA- Domono, 1100 m, 23-24.vi.1999 (V. Pelz), gent CG ♂ 4511 (CG).

Diagnosis.— Group: B03. The saccular process in the left valve broad and strongly curved.

Description.— Male. Wingspan 16 mm. Appressedly scaled, dark brown, between base of antennae creamy-white. Collar dark brown, with long, erect, bifid scales. Palpi slender, protruding, dark brown. Antennae basal segment with small brown tuft, shortly ciliated, blocked with dark brown and ochreous-brown. Thorax and tegulae brown-ochreous. Fore, mid and hind legs pale brown-ochreous with darker brown patches. Hind legs with two pairs of spurs; the proximal pair longer than the distal pair and the medial spurs shorter than the lateral spurs.

Fore wings cleft from 3/5, pale brown-ochreous. Markings dark brown: an oblique dash around base of cleft; first lobe with small costal streak just beyond base of cleft and dot at 4/5th, dorsal dot at 5/6; second lobe with diffuse darkening in apical area; some scattered dark scales in basal half of wing. Fringes pale grey. Underside dark brown with wide pale costal line, which outlines dark costal streak as above.

Hind wings and fringes brown-grey. Underside grey-brown. Venous scales brown-black, in double row, costal row longer.

Male genitalia.— Left valve with strongly curved saccular process, less than 1/3 of valve length. Right valve with short, sclerotized ridge terminating as minute thorn-like process. Anellus arms short and stout. Tegumen bilobed. Uncus moderate, slender. Vinculum arched, narrow. Aedeagus curved, not tapering. Cornuti in shape of two small rods.

Female genitalia.— Unknown.

Ecology.— The moth flies in June. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago.

Etymology.— The species is named after the Puruha people, living in Ecuador in mediaeval times.

Hellinsia emmorus (Walsingham, 1915)
(figs 16, 171, 306)

Pterophorus emmorus Walsingham, 1915: 441.

Material. — Holotype ♂: **Mexico**, Veracruz, Orizaba, xii.1887 (F.D. Goodman & O. Salvin), gent BM 18160 (BMNH). Paratype ♀: **Mexico**, Veracruz, Jalapa, 1375 m, 1887 (W. Schaus) (BMNH) [examined].

Diagnosis.— Group: B05. The species is characterized by the pale straw-yellow colour with the longitudinal lines in the second lobe. Left valve saccular process short, and curved outward. Right valve with short rod-like saccular process.

Description.— Male, female. Wingspan 28-30 mm. Head appressedly scaled pale straw-yellow. Face pale brown. Palpi 1½ × eye-diameter, protruding, straw-yellow. Antennae shortly ciliated, pale straw-yellow. Collar pale brown, with some erect bifid scales. Thorax, tegulae, and abdomen pale straw-yellow. Legs pale straw-yellow, coxae of front legs pale brown, second half of tibiae and tarsal segments bone white. Spur pairs of equal length, rather short.

Fore wings cleft from 8/11, pale straw-yellow. Markings pale brown: two oblique, faint spots before the base of the cleft; longitudinal narrow lines in the second lobe. The costal area of the wing being darker in colour; a paler area as a wedge from the base of cleft to wing base. Fringes pale straw grey. Underside paler as above.

Hind wings and fringes very pale straw-yellow. Underside pale straw-yellow. Venous scales in double row, costal row longer. Costal row ferruginous, dorsal row blackish.

Male genitalia.— Valves asymmetrical. Left valve with short saccular process, curved in an "S"-shape, tip bent outward. Right valve slightly shorter, and narrower. Saccular process short rod, with acute tip. Uncus short and slender. Anellus arms long, half the juxta length. Vinculum narrow, arched. Aedeagus minimally curved, with acute tip; without cornutus.

Female genitalia.— Ostium centrally positioned, flat. Antrum funnel-shaped, with two narrow sclerites. Around ostium and antrum a narrow rim of spiculae. Ductus bursae as long as antrum, narrow. Bursa copulatrix with slender distal half and vesicular proximal half; no signum. Ductus seminalis long and slender, $2 \times$ the bursa copulatrix length. Apophyses anteriores absent. Apophyses posteriores $2 \times$ papillae anales.

Ecology.— Flight period of moth unknown. Hostplant unknown.

Distribution.— **Mexico:** Veracruz; **Guatemala:** Molino Helvetia.

Hellinsia nauarches (Meyrick, 1930)
(figs 17, 172, 307)

Pterophorus nauarches Meyrick, 1930: 569.

Material.— Holotype ♀ (abdomen glued to thorax): **Peru**, Carabaya, Agualani, dry season, 2750 m, vi.1905 (G. Ockenden), gent BM 18454 (BMNH) [examined].

Diagnosis.— Group: B05. The pale costal line in forewing is characteristic. Saccular process in left valve very broad, mildly curved at tip. Right valve with narrow, almost linear, saccular process.

Description.— Male, female. Wingspan 27 mm. Head with erect scales, above grey-white. Face pale ferruginous-brown. Palpi pale ferruginous-brown, as long as eye-diameter. Antennae ferruginous-white, shortly ciliated; first segment enlarged with a protruding scale bristle. Thorax, metathorax, tegulae and abdomen pale brown.

Fore wings cleft from 2/3. Colour pale ochreous-brown. Pale ochreous-white costal line from wing-base, to half wing length, distal end fading. Dorsum of first lobe grey-white. Along dorsum of wing grey-white scaling with increasing intensity toward outer margin in second lobe. Fringes grey-brown. Underside brown, paler in terminal field of both lobes.

Hind wings and fringes brown-grey. Underside brown. Venous scales black, in double row. Costal row longer than dorsal row and extending into second lobe.

Male genitalia.— Valvae asymmetrical. Left valve rounded; with short curved saccular spine in center. Right valve elongate, with rounded apex; sacculus simple. Uncus moderate, slender. Tegumen bilobed. Anellus arms asymmetrical. Juxta broad at base. Vinculum simple, band-like. Aedeagus slightly curved; with pointed apex. Two small ridge-like cornuti.

Female genitalia.— Ostium semicircular, bent forward; progressing into antrum part of ductus bursae, which is funnel-shaped at top and $2 \times$ longer than wide. Ductus bursae gradually widening and progressing into the vesicular bursa copulatrix. No signum. Ductus seminalis slender, longer than bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores two and a half times longer than papillae anales.

Ecology.— The moth flies in March, June, November, and December, at an altitude above 2750 meters. Hostplant unknown.

Distribution.— **Argentina:** Cordoba; **Bolivia:** Songo Valley; **Peru:** Carabaya, Puno.

Hellinsia orellanai spec. nov.
(figs 18, 173)

Material.— Holotype ♂: **Ecuador**, Pichincha, Rd. Quito-Chiriboga km 33, 2650 m, 20.xi.1989 (N. Vene-dictoff), gent CG 5948 (AME/MGCL).

Diagnosis.— Group: B05. The species is characterized by a pale yellow wing colour, and the saccular processes in left and right valve. Left process measures less than 1/4th of valve, has angulated structure; and right process is small rod, almost central in valve. For externally resembling species see: *H. montufari* Gielis.

Description.— Male. Wingspan 23 mm. Head appressedly scaled, above and face pale brown, between antennae white. Collar pale ferruginous. Palpi pale yellow-brown, third segment darker, protruding, as long as eye-diameter. Thorax, tegulae and metathorax pale brownish-white. Hind legs pale grey-brown; with two pairs of unequal spurs, proximal pair the longer; at base of spurs greyish and at distal pair some greyish scales.

Fore wings cleft from 7/11, pale yellow. Apex of first lobe blunt, termen poorly recognizable as such; second lobe wide, with angulated anal region. Markings brown: scattered scales along costa; spot before and dorsal of base of cleft; in tip of first lobe just before apex small dots at costa and more pronounced at termen; second lobe with some grouped scales in mid-termen (not visible in illustrated wing half) and anal angle, and scattered scales centrally. Fringes pale yellow-grey, darker around apex of first lobe. Underside pale brown.

Hind wings and fringes very pale yellow-brown. Underside pale brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Asymmetrical. Left valve lanceolate, longer than right valve. Saccular process at 1/3, angulated, length just under 1/4 of valve length. Right valve with central rod-like saccular process. Uncus slender, as long as tegumen. Tegumen bilobed. Juxta with asymmetrical anellus arms. Vinculum narrow. Aedeagus minimally curved, without evident cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in November, at an altitude of 2650 meters. Hostplant unknown.

Distribution.— **Ecuador**: Pichincha.

Etymology.— The species is named after Francesco de Orellana, conquistador and lieutenant of Gonzalo Pizarro.

Remarks.— The Allyn Museum of Entomology has been merged with the McGuire Center for Lepidoptera, Florida Museum of Natural History, Gainesville, Florida.

Hellinsia paleaceus (Zeller, 1873)
(figs 19, 174, 308)

Leioptilus paleaceus Zeller, 1873: 326.

Leioptilus sericidactylus Murtfeldt, 1880: 235.

Diagnosis.— Group: B05. Left valve with "S"-shaped saccular process, more slender than in *H. emmorus*, with a longer impression. Right valve with narrow rod-like

saccular process, with blunt tip. Wings narrower than in *H. emmorus*.

Description.— Male, female. Wingspan 20-23 mm. Head appressedly scaled, vertex ochreous-white; collar and face pale brown. Palpi $1\frac{1}{2}$ × eye-diameter; ochreous-white, second segment with large drooping scales, and third segment with lateral pale brown longitudinal line. Antennae faintly ringed ochreous-white and pale brown; basal segment with ochreous-white scale brush. Thorax, tegulae and abdomen pale ochreous-white, abdomen with two faint, pale brown, longitudinal, dorsal lines. Legs bony white; hind legs with two pairs of spurs of unequal length, medial spurs longer than lateral spurs.

Fore wings cleft from 5/8, ochreous-white. Markings pale brown: faint spot in discus, and distinct spot at base of cleft. Dorsal half of wing paler than costal. Fringes very pale brown. Underside pale brown, with spot at base of cleft.

Hind wings and fringes pale brown-grey. Underside grey-brown. Venous scales in a double row; costal row pronounced and longer, extending into second lobe.

Male genitalia.— Valves asymmetrical. Left valve with "S"-shaped saccular spine, slender, tip curved outwards. Right valve with narrow saccular rod, with blunt tip. Uncus short, curved, slender. Tegumen bilobed. Juxta with long asymmetrical anellus arms. Vinculum arched. Aedeagus slightly curved, with acute tip, and minutely spiculated cornutus.

Female genitalia.— Ostium flattened. Antrum funnel-shaped, with lateral two sclerites. Ductus bursae 2 × the length of antrum. Bursa copulatrix long, slender, distally with longitudinal sclerotized ridges, proximally vesicular. Ductus seminalis longer than bursa copulatrix, slender, proximally vesicular. Lamina post-vaginalis with double sclerotized, central plates. Apophyses anteriores as an extension of the eighth tergite. Apophyses posteriores 2 × papillae anales.

Ecology.— In neotropical region no recorded flight time known. Recorded host-plants in the nearctic region are: *Vernonia noveboracensis* (L.) Michx., *V. missurica* Raf., *V. gigantea* (Walt.) Trel. ex. Branner & Coville., *V. angustifolia* Michx., *V. blodgettii* Small, and *V. cinerea* (L.) Less. (Matthews & Lott, 2005).

Distribution.— **Puerto Rico** (Möschler, 1890); **Nearctic**: Canada, U.S.A.

Hellinsia pseudobarbata Gielis, 1999
(figs 20, 175)

Hellinsia pseudobarbata Gielis, 1999: 310.

Material.— Holotype ♂: **Costa Rica**, Puntarenas, A.C. Amistad, Buenos Aires, Sector Altamira, 10 km SW del Cerro Billey, 1400 m, x.1991 (M. Segura), gent CG 3891 (Inbio).

Diagnosis.— Group: B05. In left valve a strongly curved saccular process, rather basally positioned. Right valve with narrow small rod-like saccular process. The species is characterized by markings on forewings and prominent scale-brushes on midleg at base of spur pairs.

Description.— Male. Wingspan 17 mm. Head appressedly scaled, grey-brown; collar with some erect scales, dark brown. Palpi dark brown, mixed with ochreous-brown scales, protruding, slender, $1\frac{1}{3}$ × eye-diameter. Antennae not present in holotype. Thorax and tegulae grey-brown, rostral margin bright brown. Hind legs grey-white with

scattered brown scales which become dense at base of spur pairs and end of segments. Spur pairs of unequal length, and medial spurs longer than lateral ones, basally brown, terminally white-grey.

Fore wings cleft from 7/12, grey-brown, markings black-brown. Markings: spot in cell; diffuse costal scaling; dorsal scales at 1/5 and 2/5; oblique spot at base of cleft diffusely scaled towards large costal spot of first lobe beyond base of cleft; costal spot at 2/3 of first lobe and diffuse darkening of both apices. Fringes grey, black-brown at apices and terminal region of both lobes. Underside dark brown, paler along costa, especially in first lobe.

Hind wings and fringes brown-grey. Underside dark grey. Venous scales brown-black, in double row, costal row longer and with larger scales.

Male genitalia.— Valves asymmetrical, elongate. Left valve with strongly curved saccular spine, less than 1/5 of the valve length. Right valve with minute saccular rod. Tegumen and uncus slender and rather small. Vinculum rounded. Anellus arms with slender tips. Aedeagus slightly curved.

Female genitalia.— Unknown.

Ecology.— The moth flies in October, in mountainous terrain at 1400 meters. Host-plant unknown.

Distribution.— **Costa Rica:** Puntarenas.

Hellinsia spermatias (Meyrick, 1908)
(figs 21, 176, 309)

Pterophorus spermatias Meyrick, 1908: 499.

Material.— Lectotype ♂ (designated here): **Brazil**, São Paulo, no date, gent BM 18712 (BMNH). Paralectotypes 2 ♂♂ (designated here): same locality (BMNH) [examined].

Diagnosis.— Group: B05. Left valve with short angulated saccular process. Right valve with short, rather stout, acute tipped rod.

Description.— Male, female. Wingspan 15-17 mm. Head appressedly scaled brown, between base of antennae pale grey-brown. Collar dark ferruginous-brown. Palpi slender, grey-brown, as long as eye-diameter. Antennae grey-brown, minutely pectinate. Thorax, tegulae and abdomen ochreous-grey-brown. Legs pale ochreous-brown. Hind legs with spur pairs of unequal length, the medial spurs longer than the lateral spurs.

Fore wings cleft from 3/5, brown-grey. Markings dark brown: diffuse scaling on entire wing, denser on dorsal surface; spot at base of cleft; small costal spot just before base of cleft; in first lobe costal spot in middle and at 3/5, and at dorsum spot at 3/4; three small spots at termen of second lobe. Fringes grey-brown; with black-brown scales in terminus of both lobes; at terminal costa of first lobe pale grey-brown with basal darkening. Underside dark grey-brown.

Hind wings and fringes grey-brown. Underside grey-brown. Venous sales in double row, costal row longer and with pronounced scales reaching into second lobe.

Male genitalia.— Valves asymmetrical. Left valve with short, angulated, rather slender saccular process. Right valve with short, rather stout, acute tipped saccular process. Uncus slender. Tegumen bilobed. Juxta blunt, anellus arms asymmetrical. Vinculum arched, rather slender. Aedeagus curved, apex blunt with lateral small knob; without cornutus.

Female genitalia.— Ostium more or less centrally positioned, slightly bulged out. Antrum funnel-shaped, longer than wide. Ductus bursae as long as antrum, straight, with pair of longitudinal sclerites. Bursa copulatrix vesicular, with numerous spiculae and central signum consisting of group of pronounced spiculae. Ductus seminalis length $2 \times$ bursa copulatrix, rather slender, anterior part curled. Apophyses anteriores absent. Apophyses posteriores as long as papillae anales, shaped as wedges.

Ecology.— The moth flies from December to June. Hostplant unknown.

Distribution.— **Brazil:** Sao Paulo; **Paraguay:** Paraguari.

Hellinsia sucrei spec. nov.

(figs 22, 177)

Material.— Holotype ♂: **Ecuador**, Carchi, El Angel +12,5 km, 3500 m, 12.i.1985 (N. Venedictoff), gent CG 5931 (AME/MGCL).

Diagnosis.— Group: B05. The species is characterized by the longitudinal line on the fore wing, extending into dorsal half of first lobe, and the shape of saccular processes in male genitalia.

Description.— Wingspan 27 mm. Head appressedly scaled, above and face pale brown, between base of antennae widely white. Palpi protruding, pale brown, as long as eye-diameter. Antennae pale brown, shortly ciliated. Thorax and tegulae pale brown-ochreous.

Fore wings cleft from 7/10; pale brown-ochreous; first lobe acute, second lobe with distinct termen and wider. Markings brown: dash along costa decreasing in intensity from base up to base of cleft; line increasingly intense from discal cell into first lobe; single dot before base of cleft; indistinct spot in second lobe; first lobe with costa spots at 3/4 and subapical, and dorsal spot at 4/5; second lobe with indistinct apical and anal spots. Fringes pale brown-ochreous. Underside brown, dark brown at base.

Hind wings and fringes pale grey-ochreous. Underside pale grey-brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Asymmetrical. Left valve lanceolate, little shorter than right valve. Saccular process just under 1/3 of valve, strongly curved, slender tipped. Right valve parallel, with rod-like saccular process. Uncus short and slender. Tegumen bilobed. Juxta with asymmetrical anellus arms, almost as long as tegumen. Vinculum narrow, moderately arched. Aedeagus minimally curved, apex acute; without cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in January, at an altitude of 3500 meters. Hostplant unknown.

Distribution.— **Ecuador:** Carchi.

Etymology.— The species is named after Antonio José de Sucre, who was crucial in achieving the freedom of several South American countries.

Hellinsia beneficus (Yano & Heppner, 1983)

(figs 23, 178, 310)

Oidaematophorus beneficus Yano & Heppner, 1983: 335.

Material.— Holotype ♂: **Hawaii**, Kona, Hawaii Isl., ii.1978 (S. Matayoshi), gent USNM 78058, reared (USNM) [examined].

Diagnosis.— Group: B07. Left valve with short, curved saccular process; right valve with long and lobate saccular process. The species is characterized by dark brown markings in the forewing, with their white margin at cleft.

Description.— Male, female. Wingspan 22–28 mm. Head appressedly scaled, brown. Palpi $1\frac{1}{2}$ × eye-diameter; dark brown, mixed with some white scales; second segment with erect scales; third segment short. Antennae shortly ciliated; ringed brown and whitish; first segment with brown scale brush from vertex, laterally grey-white. Anterior part of thorax and tegulae ochreous, as a continuation of costal wing margin; dorsally dark brown. Metathorax creamy-white mixed with pale brown scales. Abdomen brown. The female shows some pale scales laterally at the end of segments. Hind legs dark brown, with two pairs of spurs of equal length; anterior part of first tarsal segment pale, distally brown, other tarsi creamy to grey-white.

Fore wings cleft from 7/10, brown-grey at costa and near base. Markings dark brown: triangular spot before base of cleft, progressing in wide line in second lobe and narrower interrupted one in first lobe. At costa of first lobe two small spots, and faint scaling in costal field between base and cleft. Markings are margined, around cleft, creamy-white. Fringes grey-brown, in cleft more yellowish tinged, and at dorsum of second lobe basal half brown. Underside brown, mixed ochreous.

Hind wings brown-grey. Fringes grey-brown. Underside grey-brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Valvae symmetrical, lanceolate. Left valve with short, curved slender, saccular process. Right valve with very elongated, stout saccular process. Tegumen bilobed. Uncus slender. Vinculum arched. Juxta asymmetrical. Aedeagus slender, gradually narrowing near tip.

Female genitalia.— Antrum funnel-shaped, slightly lateral positioned at margin of 7th sternite. Ductus bursae short. Bursa copulatrix vesicular. Ductus seminalis slender and long originating from half length of ductus bursae. Apophyses anteriores absent. Apophyses posteriores 3 × the papillae anales diameter.

Ecology.— The moths flies in February and July, at an altitude of 450 to 1350 meter. Hostplant *Ageratina* (*Eupatorium*) *riuparia* (Regel) K.SR. The eggs are laid singly on lower surface of young leaves or on stem terminals. The egg stage lasts from 5 to 7 days. The larval stage is 30 to 35 days and pupal stage 10 days. Pupation takes place on leaves or in litter at base of plant or on stem.

Parasites.— *Meteorus laphygmae* Vierweg. (Hymenoptera, Braconidae).

Distribution.— **Mexico**: Distrito Federal. (Hawaii, introduced).

Hellinsia canari spec. nov.
(figs 24, 179)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago, Macas, Orillas del Rio Upano, 1000 m, 17.iv.1998 (V. Pelz), gent CG ♂ 4510 (CG). Paratype 1 ♂: **Ecuador**, Morona-Santiago, Macas, Orillas del Rio Upano, 1000 m, 17.iv.1998 (V. Pelz) (CG).

Diagnosis.— Group: B07. Left valve with broad, short, sharply curved, acute saccular process from mid-valve on. Right valve with club-like saccular process.

Description.— Male. Wingspan 15 mm. Head appressedly scaled, dark brown, between base of antennae ochreous-grey. Palpi slender, protruding, brown-grey, second segment with some drooping scales. Antennae minutely pectinate and ciliated, brown-grey. Thorax grey-brown. Tegulae, metathorax and abdomen pale ochreous-brown. Fore and mid legs pale ochreous-brown and brown-striped. Hind legs pale ochreous-brown, with two spur pairs. The proximal pair longer than distal pair, and lateral spurs in pairs longer than medial spurs.

Fore wings cleft from 3/5, pale ochreous-brown. A small brown spot at base of cleft; first lobe with costal spots at 3/4 and 7/8, and dorsal spot at 4/5; second lobe with apical and midterminal spot; diffuse dark scales on wing, with vague linear arrangement. Fringes pale grey-brown. Underside brown, with spots as above.

Hind wings and fringes brown-grey. Tip of first lobe with small spot. Underside grey-brown. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Left valve with broad, sharply curved, acute saccular process, less than 1/3rd of valve length. Right valve with large club-like saccular process. Juxta long and slender, with two short anellus arms. Tegumen bilobed. Uncus short and slender. Vinculum arched, narrow. Aedeagus minimally curved, margins parallel, apex acute.

Female genitalia.— Unknown.

Ecology.— The moth flies in April. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago.

Etymology.— The species is named after the Canari people living in Ecuador in medieval times.

Hellinsia oxyntes (Meyrick, 1908)
(figs 25, 180, 311)

Pterophorus oxyntes Meyrick, 1908: 498.

Material.— Lectotype ♂ (designated here): **Brazil**, São Paulo, '07 (R.), gent BM 18713 (BMNH). Paralecotype ♀ (designated here): **Brazil**, São Paulo, '07 (R.), gent CG 5081 (BMNH) [examined].

Diagnosis.— Group: B07. Left valve with short, slender saccular process; right valve with long rod-like saccular process. The species is characterized by the pale ochreous colour, with the delicate, faint, pale brown markings.

Description.— Male, female. Wingspan 20-22 mm. Head appressedly scaled, ochreous. Collar brown. Frons brown. Palpi slightly over eye-diameter, ochreous, slender, protruding. Antennae ochreous, shortly ciliated. Thorax ochreous-pale brown. Tegulae ochreous. Fore legs and mid legs ochreous with longitudinal lines on tibiae. Hind legs spur pairs of unequal length.

Fore wings cleft from 2/3, straw ochreous. Markings pale brown, consisting of small discal dot; dot well before base of cleft, faint costal dot above base of cleft; apical dots and dots in anal region of both lobes; small dot in mid-terminus of second lobe and scaling at costa, dorsum and less expressed in disc of wing. Fringes grey-ochreous. Underside ochreous-brown.

Hind wings yellow-ochreous. Fringes grey-ochreous. Underside yellowish-ochreous. Venous scales dark ferruginous, in double row. Costal row a little longer than dorsal row.

Male genitalia.— Valves asymmetrical. Left valve with saccular process from 1/3, slender, moderately curved. Right valve with blunt rod-like saccular process. Uncus short. Tegumen bilobed. Juxta with short, slightly asymmetrical anellus arms. Vinculum arched. Aedeagus straight, with oblique, acute tip.

Female genitalia.— Ostium left of midline, flat. Antrum funnel-shaped, with some small, longitudinal sclerites. Ductus bursae as long as antrum. Bursa copulatrix vesicular, without signum. Ductus seminalis slender, longer than bursa copulatrix. Apophyses anteriores minute in 8th sternite. Apophyses posteriores as long as the large papillae anales.

Ecology.— Flight period unknown. Hostplant unknown.

Distribution.— **Brazil:** São Paulo.

Hellinsia hoguei Gielis, 1996
(figs 26, 181, 312)

Oidaematophorus hoguei Gielis, 1996: 96.

Material.— Holotype ♂: **Mexico**, Mexico, viii (R. Muller), gent CG 3347 (USNM). Paratypes: 2 ♀ ♀, **Mexico**, Sinaloa, 1.8 road km W of El Palmito, 2040 m, 26.viii.1976 (J.P. & K.E. Donahue), gent CG 6249, 6326 (LACM); 2 ♂ ♂, 4 ♀ ♀, **Mexico**, Mexico, viii.1919 (R. Muller), gent USNM 4 nov 1921 (♂), 4 nov 1921 (♀) (USNM); 1 ♀, **Mexico**, Mexico, La Marquesa, Las Cruces, 5-9.vii.1965 (Flint & Ortiz) (CG).

Diagnosis.— Group: B09. Left valve with short, strongly curved saccular process. Right valve with small saccular rod, followed by angulated hook. On wings a distinct dark brown linear pattern, unseen in any other species.

Description.— Male, female. Wingspan 26-33 mm. Head appressedly scaled, brown. Between base of antennae ochreous-yellow. Palpi slender, protruding, ochreous-yellow. Antennae with pronounced basal segment; ochreous-white, shortly ciliated. Thorax, tegulae, metathorax and abdomen ochreous. On thorax and abdomen central brown line, wide on abdomen. Legs ochreous-white. At base of spur pairs of hind legs dark brown brushes; spur pairs of equal length.

Fore wings cleft from 4/5, very pale ochreous-white. Markings dark brown: faint scaling along costa, spot at base of cleft, costal spot above base of cleft, dash from wing base along termen of discal cell, discal spot, longitudinal spot from discal cell ending between costal spot and spot at base of cleft and longitudinal spot in middle of first lobe. Fringes grey-white. Underside grey-brown with some darkening at base of cleft.

Hind wing grey-white. Fringes grey-white. Underside pale grey-brown. Venous scales ferruginous, in double row. Costal row longer than dorsal row.

Male genitalia.— Valves asymmetrical. Left valve with short, curved saccular process. Right valve a small saccular rod, followed by small, angulated hook. Uncus short. Tegumen bilobed. Juxta blunt with asymmetrical anellus arms. Vinculum arched. Aedeagus moderately curved, blunt.

Female genitalia.— Ostium right laterally positioned, excavated. Antrum short, narrow, with a pair of small longitudinal sclerites. Ductus bursae very short. Bursa copulatrix vesicular, without signum. Ductus seminalis longer than bursa copulatrix, narrower and less vesicular. Lamina ante-vaginalis curved, laterally with knobs and scletotized ridges into the 7th sternite. Apophyses anteriores absent. Apophyses posteriores five times, the small, papillae anales.

Ecology.— The moth flies in August. Hostplant unknown.

Distribution.— **Mexico:** Mexico City, Sinaloa.

Hellinsia discors (Meyrick, 1913)
(figs 27, 182)

Pterophorus discors Meyrick, 1913: 112.

Material.— Lectotype ♂ (designated here): **British Guyana**, Mallali, i-iii (Parish), gent BM 18694 (BMNH). Paralectotypes 9 ♂♂ & ♀♀ (designated here): **British Guyana**, Mallali and Bartica, i-iii (Parish) (BMNH) [examined].

Diagnosis.— Group: C01. Left valve with mildly curved saccular process of moderate length. Right valve without such process.

Description.— After Meyrick, 1913: “♂ ♀, 12-13 mm. Head brown, forehead broadly white. Palpi 1, slender, dark brown. Thorax whitish. Abdomen whitish, with dorsal stripe of dark fuscous suffusion. Middle tibiae white with dark grey apical band, and whitish median and apical scale-tufts above, posterior legs white, tibiae sprinkled with fuscous before apex. Forewings cleft to 3/5, segments moderate, pointed; ochreous-whitish, with a few scattered fuscous and black specks; a slender suffused dark fuscous streak along costa from base to cleft; a short dark fuscous mark on costa at 2/3; some blackish around basal edge of cleft; a streak of dark fuscous suffusion above lower margin of first segment from its middle to beneath apex; variably developed blackish dots on extremities of veins; cilia ochreous-whitish, on costal mark blackish, within cleft infuscated towards base. Hindwings rather dark grey.”

Male genitalia.— Left valve with a moderately long, mildly curved saccular process. Right valve without such process. Uncus moderate. Tegumen bilobed. Juxta stout, with anellus arms of half its length. Vinculum centrally triangular. Aedeagus mildly curved; tip obliquely split; cornuti in shape of a small group of sclerotized ridges.

Female genitalia.— Unknown.

Ecology.— The moth flies from January to March. Hostplant unknown.

Distribution.— **British Guyana:** Mallali.

Hellinsia hebrus (Meyrick, 1932)
(figs 105, 182A, 364)

Pterophorus hebrus Meyrick, 1932: 251.

Material.— Holotype ♀: **Costa Rica**, Orosi, 1530 m, gent CG 6323 (NMW) [examined].

Diagnosis.— Group: C01. Left valve with saccular spine minimally under 2/3 of valve length. Right valve without saccular process. The species is characterized by the shining white colour with grey-brown spots above base of cleft, at anal region of both fore wing lobes and costal line in first lobe of fore wing.

Description.— Male. Wingspan 23 mm. Head appressedly scaled, pale ochreous-white. Collar pale ochreous. Palpi 1½ × eye-diameter, white, protruding, slender. Basal segments of antennae white. Thorax, tegulae, metathorax and abdomen white.

Fore legs, mid legs and hind legs grey-white; the hind legs with two pairs of spurs of unequal length.

Fore wings cleft from 3/5, shining silvery white. Markings grey-brown; indistinct row of scales at dorsum of cell; spot just above base of cleft; first lobe with costal spots at 1/4 and 3/4 and small spot at apex, these spots embedded in costal streak from half the costa to apex; both lobes with spot in anal region and some scales in second lobe towards indistinct apical spot. Fringes silvery-white. Underside brownish, with dark spots as above.

Hind wings grey-white. Fringes white. Underside first and second lobe pale brownish, third lobe shining white. Venous scales pale brownish, hardly recognizable in background colour, in double row; costal row longer than dorsal row.

Male genitalia.— Left valve with saccular spine minimally under 2/3 of valve length, straight, basally almost hooked. Right valve without saccular process. Uncus, short, curved, centrally slightly widened, with acute apex. Tegumen bilobed. Juxta wide, with almost symmetrical anellus arms. Vinculum dentated centrally. Aedeagus minimally curved, with obliquely spinose.

Female genitalia.— Ostium left lateral in abdomen, flattened, with curled lateral margins. Antrum as long as wide, simple, with a pair of small linear sclerites. Ductus bursae slender, as long as antrum. Bursa copulatrix vesicular, without signum. Ductus seminalis slender, a little longer than bursa copulatrix. Lamina ante-vaginalis arched. Apophyses anteriores absent. Apophyses posteriores three to four times papillae analogues.

Ecology.— The flight period is unknown. Hostplant unknown.

Distribution.— **Costa Rica.**

Hellinsia pallens spec. nov.
(figs 28, 183, 313)

Material.— Holotype ♂: **Ecuador**, Pichincha, Septimo Paraísa Res, 1300 m, 1°25'S 78°46,6'W, 10.v.2002 (B. Landry), gent CG 4831 (MHNG). Paratypes 4 ♂♂, 1 ♀: same locality, 9.v.2002, 10.v.2002, gent CG 4830 (♂), 4832 (♀) (MHNG, CG).

Diagnosis.— Group: C02. Left valve wide, with moderately long, curved saccular process. Right valve with small saccular knob. The species is characterized by its pale yellow to yellow-white appearance.

Description.— Male, female. Wingspan 17 mm. Head appressedly scaled, yellow-white. Frons and collar pale ferruginous. Palpi protruding, slender, $1\frac{1}{2} \times$ eye diameter; dorsally dark brown, ventrally pale yellow. Antennae shortly ciliated, pale yellow. Thorax and tegulae, metathorax and abdomen pale yellow. Hind legs pale yellow, with dark brown spot at base of first spur pair. Spur pairs of equal length, proximal pair longer than distal pair. Lateral proximal spur with longitudinal brown line.

Fore wing cleft from 4/7, pale yellow (yellow colour quickly fades and rubs off, giving species a bone white appearance). Markings dark brown: line along anal vein; diffusely scattered scales at costa and in both lobes; thick spot around base of cleft; first lobe with costal dash just beyond base of cleft, followed by two small spots at 1/2 and 3/4; apical and anal spots in both lobes and mid-terminal spot in second lobe. Fringes

pale yellow. Underside grey-brown, darker in basal half of wing; and yellow costal line; markings above visible on underside.

Hind wing and fringes shining grey-white. Tips of first and second lobe with small black dot. Underside greyish. Tips of first and second lobe with dots as above. Venous scales ferruginous orange, in double row, costal row longer.

Male genitalia.— Left valve from middle with moderately long, curved saccular spine. Right valve with small saccular knob. Uncus short, stout. Tegumen bilobed. Juxta stout, with short, asymmetrical anellus arms. Vinculum arched. Aedeagus slightly curved at middle, apex acute, cornutus absent.

Female genitalia.— Ostium positioned left; flat. Antrum funnel-shaped, with a pair of small, longitudinal sclerites. Ductus bursae very short. Bursa copulatrix longitudinal, without signum. Ductus seminalis longer than bursa copulatrix, also slender. Apophyses anteriores absent. Apophyses posteriores five times papillae anales.

Ecology.— The moth flies in May, at an altitude of 1300 meters. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

Etymology.— The name reflects the pale yellow colour of the species.

Hellinsia scripta Gielis, 1999
(figs 29, 184, 314)

Hellinsia scripta Gielis, 1999: 308.

Material.— Holotype ♂: **Costa Rica**, Puntarenas, Res Biol Monteverde, Est La Casona, 1520 m, ii.1991 (N. Obando), gent CG 3872 (Inbio). Paratype ♀: same locality, vii.1991, gent CG 3873 (CG).

Diagnosis.— Group: C02. Left valve with moderately long, and hardly curved saccular process. Right valve with small saccular knob. The species is characterized by the bright yellow colour and distinct markings on fore wing.

Description.— Male, female. Wingspan 19-22 mm. Head appressedly scaled yellow, at collar brownish with erect scales. Face yellow. Palpi slender, protruding, $1\frac{1}{2} \times$ eye-diameter. Antennae yellow, shortly ciliated. Thorax, metathorax and first abdominal segment yellow mixed with bright yellow scales. Mid leg with scale brush around base of spur pair.

Fore wings cleft from 2/3, bright yellow, with dark brown markings. Markings consist of oblique spot from costa to cellular region, darkening in mid costa, in first lobe: oblique intense spot from base of cleft to costa, scattered scales centrally, small subterminal spot at costa and dorsum; and on second lobe small spots at mid-terminen, anal region and close to anal region at dorsum. Fringes yellow. Underside yellow, basal half of wing centrally dark brown, oblique spot at base of cleft faintly progressing to costal spot in first lobe, as seen above.

Hind wings and fringes white-grey. Underside grey-white. Venous scales dark brown, in double row, costal row longer and with larger scales.

Male genitalia.— Valves asymmetrical. Left valve with a saccular spine half valve length. Right valve with minute saccular knob. Tegumen and uncus rather small. Vinculum broad, arched. Anellus arms asymmetrical, length just less than that of juxta. Aedeagus slightly curved.

Female genitalia.— Ostium left lateral; excavated. Antrum narrowly funnel-shaped, with two small, longitudinal sclerites. Ductus bursae short. Bursa copulatrix and ductus seminalis vesicular, approximately of same length; no signum. Lamina ante-vaginalis as an arched ridge, progressing into a strongly curled rim before antrum. Apophyses anteriores absent. Apophyses posteriores 2 × the large papillae anales.

Ecology.— The moth flies in February and July, at an altitude of 1500 meters. Host-plant *Senecio* sp.

Distribution.— **Costa Rica:** Puntarenas.

Hellinsia agraphodactylus (Walker, 1864)
(figs 30, 185)

Pterophorus agraphodactylus Walker, 1864: 941.

Pterophorus aspilodactylus Walker, 1864: 941.

Diagnosis.— Group: C03. This species is characterized by poor markings on fore wings; and the shape of saccular processes in the valves.

Description.— Male. Wingspan 22-25 mm. Head appressedly scaled, pale ferruginous. Palpi just over eye-diameter, protruding, pale ferruginous-white. Antennae faintly ringed pale ferruginous and creamy, shortly ciliated. Thorax, tegulae, metathorax and abdomen pale ferruginous-creamy. Hind legs with two pair of spurs, both pairs of unequal length.

Fore wings cleft from 3/5, pale ferruginous-creamy. An indistinct pale brown spot at the base of the cleft. Fringes pale ferruginous-creamy. Underside pale brown.

Hind wings and fringes pale grey-brown. Underside pale brown-grey. Venous scales ferruginous orange, in a double row, the costal row longer than the dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve with curved saccular process from half the valve length and of over 1/3 of valve length. Right valve with stout, short, hooked saccular process at 2/3 of valvae. Uncus slender, shorter than tegumen. Tegumen arched. Juxta stout, anellus arms asymmetrical. Vinculum arched. Aedeagus moderately curved, without cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in March. Hostplant unknown.

Distribution.— **Jamaica; Dominica.**

Remarks.— Notes on examined type specimens lost in computer crash.

Hellinsia epileucus (Walsingham, 1915)
(figs 31, 186, 315)

Pterophorus epileucus Walsingham, 1915: 440.

Material.— Holotype ♂: **Mexico**, Tabasco, Teapa, iii (H.H. Smith), gent BM 18145 (BMNH). Paratype ♀: **Mexico**, Tabasco, Teapa, iii (H.H. Smith), gent BM 18144 (BMNH) [examined].

Diagnosis.— Group: C03. The species is characterized by the white to pale ochreous colour, with few pale brown scales before base of cleft.

Description.— Male, female. Wingspan 15–17 mm. Head appressedly scaled, very pale grey-brown-white. Some erect, bifid, scales at the collar. Palpi white, slender, protruding, shorter than eye-diameter. Antennae ochreous-white, shortly ciliated. Thorax, tegulae, metathorax and abdomen white. Hindlegs white with two pairs of spurs of equal length.

Fore wings cleft from 3/5, white to pale ochreous-white. Before base of cleft some pale brown scales. Fringes white. Underside white, with poorly developed grey scaling in basal 2/3 of wing.

Hind wing and fringes white. Underside grey-white. Venous scales pale ferruginous-white, in double row, costal row longer than dorsal row.

Male genitalia.— Valves asymmetrical. Left valve with straight saccular spine, curved mesad at distal fifth, less than 2/3 of valve length. Right valve with small saccular spine. Uncus short. Tegumen bilobed. Juxta stout, with narrow, short anellus arms. Vinculum arched, with central thorny extension. Aedeagus mildly curved, coecum narrow, acute apex, no cornutus.

Female genitalia.— Ostium medial, smoothly excavated. Antrum a little wider than long. Ductus bursae narrowed, with two small, longitudinal sclerites. Bursa copulatrix vesicular, distal half with numerous spiculae. Ductus seminalis 2 × longer than bursa copulatrix, slender, terminally with three full twists. Around ostium and antrum a semicircular faintly sclerotized rim. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in March, May to June and October to November. Host-plant unknown.

Distribution.— **Costa Rica:** Cartago, Puntarenas; **Guatemala;** **Mexico:** Baja California, Guerrero, Tabasco, Veracruz.

Hellinsia lenis (Zeller, 1877)
(figs 32, 187)

Leioptilus lenis Zeller, 1877: 479.

Material.— Holotype ♂: **Colombia**, Bogota, n.d. (v. Nolcken), gent BM 18164 (BMNH) [examined].

Diagnosis.— Group: C03. Pale species with a longitudinal pale brown line from the base of the fore wing to the oblique spot before the base of the cleft.

Description.— Male, female. Wingspan 17–19 mm. Head appressedly scaled, ochreous-white. Collar and ventral half of vertex pale brown. Palpi pale brown, protruding one and one half times eye-diameter. Antennae dorsally whitish and ventrally pale brown, shortly ciliated. Thorax, tegulae, metathorax and abdomen ochreous-white, mixed pale brown. Mid legs with a scale-brush around base of spur pair; hind legs ochreous-white with two pairs of spurs of unequal length, around base of spurs some pronounced scales.

Fore wings cleft from 2/3, ochreous-white. Markings pale brown; poorly developed line from base of wing to well-defined oblique spot before base of cleft; costal spot above base of cleft; vague scaling along costa of wing and in center of first lobe vague spot. Very small spots at the anal regions of both fore wing lobes, and two more

at terminal region of second lobe. Fringes ochreous-white. Underside dark brown, pale along costa, but dark interrupted by dark costal spot.

Hind wing brown-grey. Fringes grey-brown. Underside dark brown. Venous scales ferruginous, in double row. Costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve with very slender "S"-curved saccular process, just under 2/3 of valve length. Right valve with saccular process shaped as small thorn. Uncus short. Tegumen bilobed. Juxta stout, anellus arms asymmetrical. Vinculum arched. Aedeagus mildly curved, acute tip. Cornuti as some scattered spiculae.

Female genitalia.— Unknown.

Ecology.— The moth flies in December. Hostplant unknown.

Distribution.— **Colombia:** Bogota; **Ecuador:** Napo.

Hellinsia mauleicus (Gielis, 1991)
(figs 33, 188, 316)

Oidaematophorus mauleicus Gielis, 1991: 83.

Material.— Holotype ♂: **Chile**, Maule Prov., Rio Teno, ca. 40 km. E. Curico, 800 m, 25-27.xi.1981 (Davis) (USNM). Paratypes: 1 ♂: same data, gent CG 6056; 1 ♂, 1 ♀: **Chile**, Santiago Prov., Pilay, Rio Peuco, ca 45 km. S. Santiago, 800 m, 23-24.xi.1981 (Davis) (USNM); 1 ♂: **Chile**, Santiago Prov., nr. Pta. Yeso, ca. 70 km. S. Santiago, 1250 m, 27-28.x.1981 (Davis) (USNM); 2 ♂♂, 3 ♀♀: **Chile**, El Portezuelo, 7 km. N. Santiago, 500 m, 22-25.x.1981 (Davis), gent CG 6090 (USNM, CG).

Diagnosis.— Group: C03. Left valve with moderately curved stout saccular process, just under 2/3 of valve length. Right valve with small rod with hooked tip. The species is characterized by the silvery-white colour, mixed with numerous ochreous-tinged scales.

Description.— Male, female. Wingspan 15-18 mm. Head appressed scaled. Collar and faces ochreous, between base of antennae silvery-white. Palpi 1½ × eye-diameter, slender, silvery-white mixed with ochreous scales. Antennae with grey-brown and white scales, shortly ciliated. Thorax, tegulae and metathorax cream-white. Abdomen white with faint ochreous dorsal line. Legs silvery-white. Hind legs with two pairs of spurs, medial spurs longer than lateral spurs.

Fore wings cleft from 2/3, colour shiny white with ochreous markings. Markings: a oblique dot before base of cleft, progressing in faint dash in first lobe and in discal spot toward base of wing. Along basal costa and dorsum faint ochreous shine. Small black dot at apex of second lobe, mid-dorsal of first and second lobe, and central at costa of first lobe. Fringes white, blackish near anal angle and apex of second lobe and mid-costal of first lobe. Underside yellow-white, mixed with numerous brown scales from base toward cleft. Apical parts more yellowish. Dark spots at costa, dorsum and apex of both lobes well-defined.

Hind wings whitish-grey. Fringes grey-white. Underside grey-white. At apex of lobes small black dots. Venous scales ferruginous, in double row. Dorsal row short, costal row extending into second lobe.

Male genitalia.— Valvae asymmetrical. Left valve lanceolate with large saccular spine of just under 2/3rd of valve length. Right valve elongated, with small saccular thorn at 1/7th of valve width. Tegumen bilobed. Uncus slender, moderate. Vinculum

arched. Juxta asymmetrical. Aedeagus tube-like, with poorly developed coecum.

Female genitalia.— Antrum truncate, $1\frac{1}{2}$ × longer than wide. Ductus bursae very narrow and short. Bursa copulatrix vesicular. No signum. Ductus seminalis slender, longer than bursa copulatrix. Apophyses posteriores 3 × longer than papillae anales. Apophyses anteriores pronounced triangular sclerites, as long as antrum. Lamina ante-vaginalis arched.

Ecology.— The moths fly in October and November. Hostplant unknown.

Distribution.— **Chile:** Santiago, Maule.

Hellinsia nigricalcarius Gielis, 1996
(figs 34, 189)

Oidaematophorus nigricalcarius Gielis, 1996: 97.

Material.— Holotype ♂: **Colombia**, Sierra del Libano, 1830 m, v.1899 (H.H. Smith), gent CG 5092 (BMNH). Paratype without abdomen: same data (BMNH).

Diagnosis.— Group: C03. The species is characterized by the considerable size of the moth, the ferruginous costal and dorsal scaling at the fore wing and the spot dorsally, before the base of the cleft.

Description.— Male. Wingspan 39 mm. Head appressedly scaled, pale ferruginous. Collar ferruginous. Frons pale ferruginous. Palpi one and one third times eye-diameter, slender, pale ferruginous, curved up. Antennae with a longitudinal row of white scales, shortly ciliated. Thorax, tegulae, metathorax and abdominal segments pale ferruginous to ochreous brown. Mid legs dark brown, with small brown brushes at base of spur pairs. Hind legs long and slender, whitish, with two pairs of brown spurs of unequal length.

Fore wings cleft from 4/5, pale ferruginous-ochreous. Markings dark brown, consisting of spot before and dorsally positioned at base of cleft; apical spot and an poorly developed spot in anal region of first lobe; diffuse scaling at costa and dorsum of wing. Fringes in cleft ochreous-white and at termen and dorsum pale, shining brown. Underside with markings as above and with more dark scaling.

Hind wings pale ferruginous-ochreous. Fringes shining ferruginous-ochreous. Underside as above but with denser brown scaling. Venous scales ferruginous-brown, in double row; costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve with moderately curved saccular spine, of half the valve length. Right valve with small saccular protrusion. Uncus as long as tegumen. Juxta stout, with asymmetrical anellus arms. Vinculum arched. Aedeagus mildly curved, with acute tip.

Female genitalia.— Unknown.

Ecology.— The moth flies in May. Hostplant unknown.

Distribution.— **Colombia:** Sierra del Libano.

Hellinsia cajanuma spec. nov.
(figs 35, 190)

Material.— Holotype ♂: **Ecuador**, Loja, 10 km SE Loja, PN Podocarpus, Cajanuma Ranger Stt, 2850 m, 8.x.2002 (C. & F.K. Gielis), gent CG 4929 (CG).

Diagnosis.— Group: C05. The species is characterized by the well developed termen of both fore wing lobes, and asymmetrical valvae and angular saccular processes. In the left valve close to 2/3 of the valve length, and right a short rod of approximately 1/6 of the valve length.

Description.— Wingspan 26 mm. Head appressedly scaled, ferruginous-orange, between base of antennae shining white. Palpi protruding, pale ferruginous, $1\frac{1}{2} \times$ eye-diameter. Antennae ochreous, shortly ciliated. Thorax yellow, tegulae ochreous-yellow, and metathorax ochreous, centrally with brownish tinge. pale yellow, with two pairs of spurs of unequal length, proximal pair a little longer than distal pair.

Fore wings cleft from 2/3rd, straw-yellow. Markings brown: costal line, well developed at base of cleft, and inconspicuous just before and after discal spot; a discal spot; pair of spots before base of cleft, the dorsal well developed, the costal inconspicuous; veins in lobes well defined; at termen of both lobes narrow band. Fringes dark brown in striking contrast with wing ground colour; but pale yellow at anal angle of second lobe and in cleft. Underside as above, but markings more defined.

Hind wings pale grey. In terminal half of all lobes longitudinal pale ochreous dashes. Fringes in distal half dark grey, and proximal half pale ochreous. Underside as above, but heavier developed. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Valves asymmetrical. Left valve rounded, with saccular process of just under 2/3 valve length, base with some spines and angulated at 3/5. Right valve elongate, with rod like saccular process of 1/6 of valve. Uncus curved, well developed. Tegumen bilobed. Juxta with asymmetrical anellus arms. Vinculum arched, rather wide. Aedeagus curved, with small sclerotized structures near tip.

Female genitalia.— Unknown.

Ecology.— The moth flies in October, at an altitude of 2850 meters. Hostplant unknown.

Distribution.— **Ecuador:** Loja.

Etymology.— The species is named after the collecting site, the Cajanuma Ranger Station in the Parque National Podocarpus, near Loja in southern Ecuador.

Hellinsia siskaellus (Gielis, 1991)
(figs 36, 191, 317)

Oidaematophorus siskaellus Gielis, 1991: 79.

Material.— Holotype ♂: **Argentina**, Rio Negro, San Carlos de Bariloche, Colonia Suiza, 800 m, 29-30.xii.1981 (Nielsen & Karsholt), gent CG 4126 (ZMUC). Paratypes: 2 ♂♂, 2 ♀♀: same locality, 1.i.1979, 4.i.1979, 6.i.1979, 5-7.i.1982 (Mision Cientifica Danesa, Nielsen & Karsholt), gent CG 4127 (ZMUC, CG); 1 ♂, **Chile**, Malleco, nr Los Gringos Camp, Nahuelbuta Nat. Park, 1300 m, 6-11.i.1981 (Davis) (USNM); 3 ♂♂, **Chile**, Nuble, Alto Tregualemu, 20 km SE Chovellen, 500 m, 1-3.xii.1981 (Davis) (USNM); 2 ♂♂, 1 ♀, **Chile**, Santiago, Pta. Yeso, 70 km SE Santiago, 1250 m, 27-28.x.1981 (Davis), gent CG 6055 (USNM).

Diagnosis.— Group: C05. Left valve with curved saccular spine. Right valve with single saccular rod. The species has broad wings and is well-marked with a unique pattern.

Description.— Male, female. Wingspan 21-23 mm. Head appressedly scaled. Face dark brown, frons brown-grey. Collar with erect dark brown scales. Palpi short, slender,

slightly larger than eye-diameter. Antennae 2/3 of wing length. First segment grey-white, other segments indistinctly ringed grey-white and grey-brown; shortly ciliated. Thorax brown-grey. Abdomen grey-brown. Legs grey-brown, tarsi white. Spur pairs of equal length. Around base of distal spurs some grey-brown scales.

Fore wings pale brown, markings dark brown. An indistinct costal streak and discal spot; blotch above base of cleft progressing at base in small dark transverse streak not reaching dorsum; costal streaks in both lobes and dorsal streak in first lobe. Basal half of costal streak of second lobe extending as ill-developed transverse band in basal half of second lobe. Diffuse white scaling, condensing into small streak parallel to costal streak, and anterad of costal streak. Fringes grey-brown, with dark basal line at dorsum of first, and costal and dorsal in second lobe. Underside grey-brown. Dark markings, margined white, above and at base of cleft, and small dots at costa of first lobe. A spot, not margined, at anal angle of first and second lobe and at apex of second lobe.

Hind wings grey-brown. Fringes grey-brown. Underside grey-brown. Venous scales black, in costal row dense and extending in isolated scales; dorsal row of isolated scales.

Male genitalia.— Valvae asymmetrical. Left valve with slender saccular spine, half as long as valve. In right valve rather stout saccular arm. Left valve of a rounded shape, right valve more elongated. Uncus short. Tegumen bilobed. Juxta stout. Vinculum arched, slender. Aedeagus slender, curved; coecum a narrow curved process.

Female genitalia.— Ostium left lateral, simple. Antrum gradually narrowing, 2 × longer than wide. Ductus bursae short, ill-developed, gradually progressing into bursa copulatrix. No signum. End-gut well-developed, mimicking large bursa. Papillae anales large; apophyses posteriores 1½ × papillae anales. 8th sternite plate-like, with small apophyses anteriores.

Ecology.— The moth flies October and December to January. Hostplant unknown.

Distribution.— **Argentina:** Rio Negro; **Chile:** Malleco, Nuble, Santiago.

Hellinsia solanoi Gielis, 1999

(figs 37, 192, 318)

Hellinsia solanoi Gielis, 1999: 310.

Material.— Holotype ♂: **Costa Rica**, Limon, P.N. Tortuguero, Est Cuarto Esquinas, 0 m, x.1990 (J. Solano), gent CG 3877 (Inbio).

Diagnosis.— Group: C05. The species is characterized by pale colour and distinct, but delicate pale brown dash from fore wing base into first lobe.

Description.— Male. Wingspan 18 mm. Head appressedly scaled, pale brown, at collar darker tinged. Palpi curved up, pale brown, 1½ × eye-diameter. Antennae shortly ciliated, basally with white scales. Thorax descaled in holotype.

Fore wings cleft from 4/7, pale ochreous-yellow. Markings tinged pale brown, consisting of longitudinal lines from base of wing into first lobe, along costa of second lobe and along veins in base of wing. Fringes grey-white. Underside gradually changing from dark brown at base to pale brown, mixed with white scales, at apices.

Hind wings and fringes pale yellow-white. Underside pale brown, gradually mixed with increasing numbers of white scales towards apices. Venous scales dark brown, in a double row, the costal row the longer and with larger scales.

Male genitalia.— Valves asymmetrical. Left valve large and rounded, with cucullar fold of one third of the valve length. Saccular spine curved, 1/4 valve length. Right valve narrow, lanceolate, with pointed tip. Saccular process in shape of small triangular hook. Tegumen and uncus small, each 1/4 left valve length. Vinculum arched. Anellus arms rather wide and short. Aedeagus slightly curved, short and stout, apex recurved.

Female genitalia.— Ostium left lateral. Antrum almost rectangular. Ductus bursae long and slender. Bursa copulatrix simple, vesicular, without signum. Lamina ante-vaginalis arched, rather wide. Apophyses anteriores as long as papillae anales. Apophyses posteriores three and a half times papillae anales.

Ecology.— The moth flies in October. Hostplant unknown.

Distribution.— **Costa Rica:** Limon.

Hellinsia cuculla spec. nov.
(figs 38, 193, 319)

Material.— Holotype ♂: Ecuador, Loja, Rd Loja - Piñas km 58, 2030 m, 21.iv.1982 (N. Veneditoff), gent CG 5951 (AME/MGCL). Paratype ♀: same date and locality, gent CG 5950 (CG).

Diagnosis.— Group: C07. The species has in left valve a curved saccular process of half valve length, and in right valve a cap-like (club-like) saccular process. In *H. tetraonipennis* these processes are blunt, in present species slender.

Description.— Wingspan 16 mm. Head pale brown, between base of antennae whitish. Palpi mildly curved, ochreous-white, second segment mixed with brown scales, as long as eye-diameter. Antennae ciliated, basal segment brownish, ringed dark brown and ochreous-white. Thorax and tegulae ochreous-white, with a transverse brown band in middle. Metathorax ochreous-white. Legs ochreous-grey; mid leg with longitudinal brown lines on femur and tibiae; at base of spurs on mid and hind legs, small brown scale-bristles; spurs of unequal length, inner spurs longer.

Fore wings cleft from 8/13, pale ochreous. Markings brown: small discal spot; diffuse scaling along costa and dorsum; terminally oblique margined spot just before base of cleft; costal spot above base of cleft; first lobe with costal spots at 1/3, a longitudinal spot in middle, and at 3/4, and dorsal spots at 1/4, 1/3 and in anal region; second lobe with three poorly defined spots at termen; and diffuse darkening in center of first and costally in second lobe. Fringes pale ochreous-grey; where there are dark spots at dorsum of first lobe fringes dark brown, and where darkening at costa of second lobe fringes diffusely darkened. Underside brown, with dark costal spots as above.

Hind wings and fringes brown-grey. Underside brown-grey. Venous scales in three rows, dark ferruginous, costal row longer.

Male genitalia.— Valves asymmetrical. Left valve with waved and curved saccular process of half valve length. Right valve with rod-like cucullar process and saccular process in shape of cap or blunt club. Uncus short and curved. Tegumen bilobed. Juxta with rather slender anellus arms. Vinculum rather narrow, wave shaped. Aedeagus almost straight, no cornutus. Coecum elongate.

Female genitalia.— Ostium oval, positioned in middle. Antrum obliquely directed to left lateral, with two longitudinal sclerites. Ductus bursae 3 × length of antrum. Bursa copulatrix vesicular. No signum. Ductus seminalis long, slender, longer than ductus

bursae and bursa. Lamina ante-vaginalis with sclerotized flattened "X" shaped structure. No apophyses anteriores. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in April, at an altitude of 2030 meters. Hostplant unknown.

Distribution.— **Ecuador:** Loja.

Etymology.— The name cuculla (= cap), reflects the shape of the saccular process in the right valve.

Hellinsia tetraonipennis (Walsingham, 1915)
(figs 39, 194, 320)

Pterophorus tetraonipennis Walsingham, 1915: 442.

Material.— Holotype ♂: **Guatemala**, Cerro Zunil, 1220-1525 m, 1880 (Chapman), gent BM 18148 (BMNH). Paratype ♀: **Guatemala**, Cerro Zunil, 1220-1525 m, 1880 (Chapman), gent CG 5087 (BMNH) [examined].

Diagnosis.— Group: C07. Left valve with pronounced broad-based, acute saccular spine, right valve with broad, club-like ending saccular process. The species has vivid brown markings on the fore wing.

Description.— Male, female. Wingspan 19 mm. Head appressedly scaled, ochreous. Collar and frons ochreous. Palpi just over eye-diameter, ochreous, protruding, slender. Antennae ochreous, shortly ciliated. Thorax, tegulae and metathorax ochreous. Hind legs creamy with ochreous markings at the joints and the base of spur pairs. Spur pairs of unequal length.

Fore wings cleft from 3/5, pale ochreous. Markings pale brown, consisting of indistinct costal darkening up to base of cleft, spot before base of cleft, transverse band at 1/3 of both lobes, dark scaling at apex of both lobes and scattered scales on wing. Fringes ochreous-grey. Underside brownish, with pale ochreous spots at costa; first as far as base of cleft, second at costa of first lobe.

Hind wings and fringes brown-grey. Underside brownish. Venous scales orange-ferruginous, in double row, costal row longer than dorsal row. Dorsal row close to costal row and poorly recognizable.

Male genitalia.— Left valve with long (almost 2/3 of valve length) broad, but acute ending, saccular process. Right valve with broad, slightly waved, club-tipped saccular process. Uncus short, curved. Tegumen bilobed. Juxta with pair of anellus arms of almost equal length. Vinculum narrow, with central spine. Aedeagus basally curved, no cornutus.

Female genitalia.— Ostium centrally positioned, excavated. Antrum as long as wide, rounded proximal. Ductus bursae long and slender, progressing into vesicular bursa copulatrix. No signum. Apophyses posteriores 1½ × the conical papillae analles.

Ecology.— The moth flies in August, at an altitude around 1400 meters. Hostplant unknown.

Distribution.— **Guatemala; Mexico:** Sonora.

Hellinsia batallonica Arenberger & Wojtusiak, 2001
 (figs 40, 195)

Hellinsia batallonica Arenberger & Wojtusiak, 2001: 70.

Material.— Holotype ♂: **Venezuela**, Paramo el Batallon, Quebrada de los Pios, 2950 m, 4.iii.1996 (J. Wojtusiak), gent Ar 4208 (Wojtusiak) [examined].

Diagnosis.— Group: C08. Left valve with curved saccular spine, just under 2/3 of valve length. Right valve with two small knob-like saccular processes.

Description.— Wingspan 24 mm. Head grey-brown. Palpi almost protruding; grey-brown, as long as eye-diameter. Antennae ringed: pale brown and pale grey-brown; shortly ciliated. Thorax, tegulae, metathorax and first abdominal segments grey-brown. Hind legs brown-grey, with median spurs longer than lateral spurs.

Fore wings cleft from 2/3, grey-brown; dorsal fields paling to pale brown, and along costa brown. Markings brown: an oblique dash, well before base of cleft; some darkening at anal region of both lobes. Fringes pale grey-brown. Underside ochreous-brown, with faint oblique dash before base of cleft.

Hind wings and fringes grey-brown. Underside ochreous-brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Left valve with curved saccular spine, just under 2/3 of valve length. Right valve with two small knob-like saccular processes. Uncus slender. Tegumen bilobed. Juxta slender, with stout anellus arms of equal length. Aedeagus moderately curved. Cornutus consisting of some sclerotized ridges.

Female genitalia.— Unknown.

Ecology.— The moth flies in March. Hostplant unknown.

Distribution.— **Venezuela**.

Hellinsia betsiae (Gielis, 1991)
 (figs 41, 196, 321)

Oidaematophorus betsiae Gielis, 1991: 81.

Material.— Holotype ♂: **Chile**, Curico, Buchen, 20 km E Potrero Grande, 1300 m, 11.i.1955 (Peña), gent CG 6045 (CNC). Paratype ♀: **Chile**, Santiago, Guayacan, 1100 m, x.1952 (Peña), gent CG 6046 (CNC).

Diagnosis.— Group: C08. The species is closely related to *H. siskaella* Gielis, differing in colour and shape of markings. Male genitalia show different uncus and saccular spine on left valve. Female genitalia differ in place and shape of antrum and vesicular bursa copulatrix. The species is characterized by silvery white colour and round spot at base of cleft.

Description.— Male, female. Wingspan 21 mm. Head ferruginous-white, with some protruding scales. Palpi grey-white, drooping, as long as eye-diameter. Second palp-segment as long as third segment. Antennae ferruginous-white, shortly ciliated. Thorax and metathorax pale ferruginous, tegulae silvery-white. Legs grey-white.

Fore wings cleft from 2/3. Colour white. Dark brown round spot at base of cleft. At costa ferruginous dash above base of cleft and in first lobe centrally at costa. Some

ferruginous scales along costa and some grouped at 1/3 of dorsum. Fringes grey-white. Underside grey-white, paler near apical region. Spot at base of cleft.

Hind wings silvery grey-white. Fringes grey-white. Faint grey spot at base of cleft between first and second lobe. Underside grey-white. Spot at base of first cleft is indicated here. Venous scales in double row, black, costal row longer.

Male genitalia.— Valvae asymmetrical. Right valve elongate. Sacculus with small thorn. Left valve rounded. Sacculus with large, stout spine, arched, half the valve's length. Tegumen bilobate. Uncus slender, moderate. Vinculum curved. Juxta asymmetrical, short. Aedeagus elongate, moderately curved, width uniform.

Female genitalia.— Antrum funnel-shaped, progressing into short ductus bursae. Bursa copulatrix vesicular. Ductus seminalis rather short, as wide as ductus bursae. Apophyses posteriores $1\frac{1}{2} \times$ length of papillae anales. Apophyses anteriores absent.

Ecology.— The moth flies in October, December and January. Hostplant unknown.

Distribution.— **Chile:** Curico, Santiago.

Hellinsia caras spec. nov.

(figs 42, 197, 322)

Material.— Holotype ♂: **Ecuador**, Napo, 5 km W Papallacta, Laguna Papallacta, 3430 m, 0°22'27"S 78°9'50"W, 28.x.2002 (C. & F.K. Gielis & V. Pelz) (CG). Paratypes: 4 ♂♂, same locality and date, gent CG 5242 (CG). 1 ♀, **Peru**, Puno, 5 km E Limbani, 3000 m, 28.iii.1987 (O. Karsholt), gent CG 4285 (ZMUC).

Diagnosis.— Group: C08. Left valve with curved saccular process, just over 1/3 of valve length. Right valve with blunt, large, double saccular process. The species is characterized by the wingspan and large spot at anal angle of fore wing.

Description.— Male, female. Wingspan 26-27 mm. Head appressedly scaled, silvery white. Collar brown-grey, with some erect scales. Face grey-brown. Palpi protruding, white, $1\frac{1}{3} \times$ eye-diameter. Antennae white, shortly ciliated. Thorax and tegulae white with ochreous gloss in caudal half. Mid legs white with pale brown rings: one in the femur between coxa and first pair of spurs; one between spur pairs; at base of distal spur pair; and on first three tarsal segments. Hindlegs absent in examined specimens.

Fore wings cleft from 3/4, ochreous-white to silvery-white, with brown markings. Some scattered dark scales on dorsum from half wing length to below base of cleft; large spot below and oblique spot before base of cleft; faint spot at costa above base of cleft, which progresses into dash throughout first lobe. Fringes silvery white, brownish at spots along costa and dorsum. Underside brown, mixed with numerous white scales, especially along costa and into lobes; black spots at apex and anal angle of both lobes.

Hind wings and fringes silvery white. Underside of first and second lobe brown with black spot at costa of first lobe at 4/5. Third lobe ochreous-white, with black spots at apex and anal angle and scattered scales in lobe. Venous scales ferruginous, in double row, costal row longer.

Male genitalia.— Left valve with curved saccular process with length of just over 1/3 of valve length. Right valve with two saccular processes, which are blunt and wide. Anellus arms slender, tapered. Tegumen and uncus a little longer than valves. Vinculum narrow, arched. Aedeagus simple, straight, and widened at tip.

Female genitalia.— Ostium wide. Antrum narrow, funnel-like. Anterior part with three small sclerites. Ductus bursae slender, two and a half times the antrum. Bursa

copulatrix simple, vesicular. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in March and October, at an altitude of 3000-3450 meters. Hostplant unknown.

Distribution.— **Ecuador:** Napo; **Peru:** Puno.

Etymology.— In mediaeval times the Caras people were a tribe in Ecuador.

Hellinsia crescens (Meyrick, 1926)
(figs 43, 198, 323)

Pterophorus crescens Meyrick, 1926: 300.

Material.— Lectotype without abdomen (designated here): **Colombia**, San Antonio, 2000 m, ii.1920 (BMNH). Paralectotype without abdomen (designated here): **Colombia**, Tolima Canon, 1700 m (BMNH) [examined].

Diagnosis.— Group: C08. Left valve with moderately curved saccular spine. Right valve with two small saccular processes.

Description.— Male, female. Wingspan 32-36 mm. Head appressedly scaled, ferruginous-ochreous, vertex near collar brown. Collar with some erect scales. Palpi protruding, slender, ferruginous-ochreous, $1\frac{1}{3}$ × eye-diameter. Antennae shortly ciliated, ferruginous, with longitudinal row of white scales. Thorax and tegulae brown. Metathorax ferruginous-white. Hind legs creamy-white, with two pairs of spurs of equal length. Proximal pair of spurs longer than distal pair.

Fore wings cleft from 4/5, colour grey-brown. Markings dark brown, consisting of discal spot, transverse spot well before base of cleft and not reaching costa nor dorsum, small costal spot above transverse line, poorly developed spot in basal half of first lobe, two small spots at costa of first lobe just before apex, spot at dorsum of second lobe just before anal angle, three terminal spots at second lobe and anal spot at first lobe. Apical field of first lobe has ochreous colour. Fringes in colour of adjacent wing parts, with paler basal margin at dorsum of first lobe and dark basal margin at dorsum of second lobe. Underside dark brown with costal markings as above.

Hind wings dark brown-grey. Fringes grey-brown. Underside dark brown, in third lobe mixed with whitish scales. Venous scales black, in double row. Costal row more pronounced and longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve rounded, broad, with an arched saccular spine, of just over 1/3 of valve length. Right valve more elongate, slender, with two small saccular thorns. Uncus long and slender. Tegumen simple. Anellus arms asymmetrical, right arm longer and stouter. Vinculum arched. Aedeagus gently curved, with small sclerotized ridge near top.

Female genitalia.— Ostium left lateral positioned, slightly protruding. Antrum gradually narrowing, with two small, longitudinal sclerites anterad. Ductus bursae very short. Bursa copulatrix long, slender, vesicular. No signum. Ductus seminalis 2 × bursa copulatrix, long, slender, vesicular. Lamina ante-vaginalis as narrow sclerotized rim, with two centrally positioned thorn-like extensions, possibly centrally displaced, short apophyses anteriores. Apophyses posteriores 1½ × papillae anales. Papillae anales large, triangular.

Ecology.— The moth flies in January, March, and December, at an altitude of 1700-3500 meters. Hostplant unknown.

Distribution.— **Brazil:** São Paulo; **Colombia;** **Costa Rica:** Cartago; **Ecuador:** Carchi; **Venezuela:** Aragua,

Hellinsia falsus (Barnes & Lindsey, 1921)
(figs 44, 199, 324)

Oidaematophorus falsus Barnes & Lindsey, 1921: 436.

Material.— Holotype ♂: U.S.A., Arizona, Gila Co, Tucson, xii, gent USNM 68-539 (USNM). Paratype 2 ♀♀: same data, gent CNC MIC 652 (USNM, CNC) [examined].

Diagnosis.— Group: C08. Left valve rounded, sacculus between 1/3 and 2/3 of valve length, right valve with a small saccular knob and rod.

Description.— Wingspan 22-25 mm. Head pale ochreous-white. Palpi curved up, pale ochreous-white. Antennae shortly ciliated, pale ochreous-white. Thorax, tegulae, and abdomen pale ochreous-white.

Fore wings pale ochreous-white. Along costa faint pale brown streak. Fringes whitish. Underside pale brown-white, along costa paler.

Hind wings and fringes pale greyish brown-white. Underside: first and second lobe pale grey-white, third lobe white. Venous scales in double row, ferruginous-orange, costal row pronounced and longer.

Male genitalia.— Left valve rounded, with saccular spine of just over 1/3 of valve length. Right valve more elongate, with small, rounded saccular knob, followed by slender, short rod. Uncus slender, as long as tegumen. Tegumen bilobed. Juxta with asymmetrical anellus arms. Vinculum broad, arched. Aedeagus moderately curved, blunt. Cornutus a small rectangular sclerite.

Female genitalia.— Ostium left positioned, flat. Antrum short, funnel-shaped, with a pair of longitudinal sclerites. Ductus bursae as long as antrum. Bursa copulatrix rather small, vesicular. Ductus seminalis over 2 × length of bursa copulatrix, slender, with vesicular end. Lamina ante-vaginalis narrow, arched, with apophyses anteriores, just over the length of papillae anales, and centrally two small sclerotized projections. Lamina post-vaginalis poorly sclerotized, arched. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in March, August and December. Hostplant unknown.

Distribution.— **Mexico:** Baja California; **Nearctic region:** U.S.A.

Hellinsia fishii (Fernald, 1893)
(figs 45, 200, 325)

Alucita fishii Fernald, 1893: 95.

Material.— Holotype (without head, abdomen, legs, fore wings and right hind wing): (U.S.A.), Nevada; Coll Fernald (USNM) [examined].

Diagnosis.— Group: C08. Left valve with strongly curved saccular spine. Right valve with two small saccular knobs.

Description.— Wingspan 17-23 mm. Head appressedly scaled, ochreous-white. Collar ochreous. Palpi ochreous-white, as long as eye-diameter, protruding. Antennae shortly ciliated, ochreous-white. Thorax, tegulae and abdomen ochreous-white. Legs ochreous-greyish. Hind legs with two pairs of spurs of unequal length, median spurs longer than lateral, and proximal pair longer than distal.

Fore wings cleft from 4/7, ochreous-grey. Costal half more ochreous tinged, dorsal half more whitish. Fringes ochreous-white. Underside as above.

Hind wings, fringes and underside shiny pale ochreous-white. Venous scales dark ferruginous in double row. Costal row longer than dorsal row.

Male genitalia.— Valves asymmetrical, left valve wider than right valve. Left valve with strongly curved saccular spine. Right valve with two saccular knobs. Uncus slender. Tegumen bilobate. Anellus arms short, asymmetrical. Juxta long and slender. Vinculum arched. Aedeagus with acute apex. Coecum short, half the width of aedeagus. Cornuti shaped by group of filamentous sclerotizations.

Female genitalia.— Ostium flat, left centrally positioned. Antrum funnel-shaped, as long as wide, with anterad small longitudinal sclerites. Bursa copulatrix vesicular, without signum. Ductus seminalis shorter than bursa copulatrix. Lamina ante-vaginalis shaped as a narrow band, with laterally the slender apophyses anteriores. Apophyses posteriores $2\frac{1}{2} \times$ papillae anales.

Ecology.— The moth flies in July. Hostplant unknown.

Distribution.— **Mexico:** Baja California; **Nearctic:** U.S.A.

Remarks.— The single specimen known to me from Mexico, shows some differences to the female genitalia of those from the U.S.A. Ostium and antrum are narrower, and the bursa copulatrix shows spiculation which is not present in the northern specimens. When more material becomes available, these discrepancies may be solved.

Hellinsia inquinatus (Zeller, 1873)
(figs 46, 201, 326)

Oedematophorus inquinatus Zeller, 1873: 325.

Material.— Holotype without abdomen: **U.S.A.**, Texas, Dallas, no date (BMNH) [examined].

Diagnosis.— Group: C08. Left valve with curved saccular process just under 2/3 of valve length. Right valve with two small saccular knobs.

Description.— Male, female. Wingspan 11-16 mm. Head appressedly scaled, brown. Collar with erect dark grey-brown scales. Palpi $1\frac{1}{2} \times$ eye-diameter; basal segment white, third segment slender, protruding. Antennae ringed grey-brown and white, basal segment white; shortly ciliated. Thorax, tegulae and abdomen brown-grey mixed with grey-white scales. Legs with scale-tufts near spur-pairs.

Fore wings cleft from 3/5, brown-grey mixed with white scales. Markings dark-brown, before base of cleft, at costa above base of cleft and central at costa of first lobe. Small white spot at 1/3 of dorsum and between base of cleft and dark spot. Costal spots are margined white. Fringes grey, with white dash at anal angle of both lobes and centrally in outer margin of second lobe. Underside brown-grey with darker brown and white spots at costa as above.

Hindwings grey-brown. Fringes grey. Underside brown-grey. Venous scales black, in double row; costal row longer than dorsal row, and well extending into second lobe.

Male genitalia.— Genitalia asymmetrical. Left valve rounded, large saccular process; originating from 1/4 of valve length at dorsal margin, arched and reaching up to 3/4 of the valve's length and remains within valve's contour. Right valve narrow, elongate, at dorsal margin of sacculus two small thorns. Uncus moderate, slender. Tegumen bilobed, triangular. Juxta asymmetrical, anellus arms of unequal length. Vinculum curved, narrow. Aedeagus slightly curved, with cornutus in shape of small sclerotized plate.

Female genitalia.— Antrum 2 × longer than wide. Ductus bursae a narrow tube toward vesicular bursa copulatrix. Anterior part of bursa copulatrix with numerous spiculae. 8th sternite with central triangular extension. Apophyses anteriores absent. Apophyses posteriores 3 × longer than papillae anales.

Ecology.— The moth flies in April, June and December. Hostplants: *Ambrosia artemesiifolia* L., *A. trifida* L., and *Parthenium hysterophorus* L. (Matthews & Lott, 2005).

Distribution.— **Mexico; Haiti; Puerto Rico** (Wolcott, 1951); **St Thomas Island; Nearctic: Canada, U.S.A.**

Hellinsia monserratiae Arenberger & Bond, 1995
(figs 47, 202)

Hellinsia monserratiae Arenberger & Bond, 1995: 466.

Material.— Holotype ♂: **Colombia**, Páramo de Monserrate nr Bogota, 3200-3300 m, 2.ii.1990 (M. Murcia), gent BM 21123 (BMNH) [examined].

Diagnosis.— Group: C08. Left valve with "S"-shape saccular process, of half valve length. Right valve with two small saccular knobs.

Description.— Translation of Arenberger & Bond, 1995: "Wingspan 33 mm. Fore wings grey-brown, far before base of cleft, dark brown wedge-shaped spot reaching costa. Costa with large, longitudinal, dark brown spot which ends before base of cleft, and at costa of first lobe two additional, smaller spots. Head white, forehead brown, conical, protruding. Palpi appressedly brown scaled, 3rd segment 1/2. Antennae brown, densely ciliated".

Male genitalia.— Left valve with "S"-shape saccular process, of half valve length. Right valve with two small saccular knobs. Uncus as long as tegumen, curved. Tegumen bilobed. Juxta slender, anellus arms rather short, asymmetrical. Vinculum arched. Aedeagus moderately curved. Cornutus in shape of delicately sclerotized striations.

Female genitalia.— Unknown.

Ecology.— The moth flies in February, at an altitude of 3250 meters. Hostplant unknown.

Distribution.— **Colombia**.

Hellinsia phloeochora (Walsingham, 1915)
(figs 48, 203, 327)

Pterophorus phloeochora Walsingham, 1915: 447.

Material.— Holotype ♂: **Mexico**, Guerrero, Amula, 1830 m, viii (H.H. Smith), gent BM 18156 (BMNH).

Diagnosis.— Group: C08. Left valve with a long, strongly curved saccular spine. Judging from the curvature this species belongs to the C group, nevertheless the stretched length is extending over 2/3rd of wing length. Right valve with double saccular process, a knob and a rod.

Description.— Wingspan 20-24 mm. Head appressedly scaled, brown. Palpi protruding, one and one third eye-diameter, brown, tip of third segment white. Antennae brown, shortly ciliated. Thorax, tegulae and abdomen brown. hind legs grey-brown, with two pairs of spurs of unequal length, proximal pair longer, and median spur longer than lateral spur.

Fore wings cleft from 3/7, brown. Markings black-brown: discal spot; oblique spot just before base of cleft, basally with longitudinal base line; at costa of first lobe longitudinal line at 1/3; in first lobe small spots at apex and at anal angle; second lobe darkened in terminal region. Spot at base of cleft and at costa of first lobe terminally margined whitish. Fringes grey-brown, at apex and anal region of both lobes blackish. Underside brown.

Hind wings and fringes brown-grey, fringes around apex of first lobe black. Underside brown. Venous scales ferruginous, in double row, costal row longer.

Male genitalia.— Left valve with strongly curved, slender saccular spine, originating almost from middle of valve. Right valve with blunt saccular knob, followed by narrow rod. Uncus short and slender. Tegumen 1½ × uncus, bilobed. Juxta slender, with long and slender anellus arms of similar length. Vinculum narrow, slightly arched. Ae-deagus simple.

Female genitalia.— Ostium positioned in middle of abdomen, small and rounded. Antrum club-like. Lamina ante-vaginalis bulged outwards, with central excavation. Apophyses anteriores short and blunt. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in February, July and August, at an altitude of 500-2000 meters. Hostplant unknown.

Distribution.— **Mexico**: Guerrero, Veracruz; **Guatemala**; **Panama**.

Hellinsia pizarroi spec. nov.

(figs 49, 204)

Material.— Holotype ♂: **Ecuador**, Moreno-Santiago, Gualaceo-Limon km 36, 2900 m, 15.ii.1983 (N. Vene-dictoff), gent CG 5924 (AME/MGCL).

Diagnosis.— Group: C08. Externally the species cannot be distinguished from *H. benalcazari* spec. nov. The species belongs to the group with an angulated left valvular saccular process. In the right valve two small saccular knobs. *H. benalcazari* belongs to group H, with a large basal twist of the left saccular process.

Description.— Wingspan 30 mm. Head dark brown. Palpi dark brown, curved up, 1½ × eye-diameter. Antennae shortly ciliated, ringed dark brown and grey-brown. Thorax and tegulae dark brown. Metathorax ferruginous. Legs grey-brown. Mid legs with two brown scale bristles. Hind legs with single, small brown scale bristle at terminal pair of spurs; spur pairs with medial spur shorter than lateral. Tarsal segments of fore and mid legs grey-ochreous.

Fore wings cleft from 2/3, dark brown. White dot costally in discus, preceded and followed by some blackish scales; ochreous, oblique spot at minimal distance from base of cleft, and ochreous costal dot before base of cleft. Narrow blackish line in center of first lobe; and two indistinct longitudinal rows of black scales in second lobe. Fringes dark brown. Underside dark brown, with narrow pale ochreous spot at costa before base of cleft.

Hind wings and fringes brown-grey. Underside dark brown. Venous scales in double row, costal row longer.

Male genitalia.— Valves asymmetrical. Left valve with angulated saccular process, of approximately half valve length. Right valve with two pronounced saccular knobs. Uncus arched, as long as tegumen. Tegumen bilobed. Juxta blunt with two slender anellus arms. Vinculum moderately wide, arched. Aedeagus mildly arched; rather sharp tipped. Cornutus in shape of some, small, sclerotized ridges.

Female genitalia.— Unknown.

Ecology.— The moth flies in February, at an altitude of 2900 meters. Hostplant unknown.

Distribution.— **Ecuador:** Moreno-Santiago.

Etymology.— The species is named after the Spanish conquistador Francisco Pizarro, the first European to set foot in many parts of South America.

Hellinsia ruminahuii spec. nov.
(figs 50, 205)

Material.— Holotype ♂: **Ecuador**, Pichincha, Rd. Quito - Chiriboga km 40, 2480 m, 22.iii.1982 (N. Veneditoff), gent CG 5940 (AME/MGCL).

Diagnosis.— Group: C08. Left valve with long "S"-curved saccular process. Right valve with knob and rod. Shape and size of these processes differentiate it from *H. phloeocheira* Walsingham, by curved process and lower implant in left valve and smaller and more slender processes in right valve.

Description.— Wingspan 21 mm. Head appressedly scaled, straw-yellow. Collar ferruginous-ochreous. Palpi protruding, straw-yellow, as long as eye diameter. Antennae pale ferruginous, shortly ciliated. Thorax and tegulae straw-yellow.

Fore wings cleft from 5/8, straw-yellow. Markings pale brown: costal line upto 3/4 of wing; small spot before and below base of cleft; costal spots in first lobe at 3/5 and 4/5; well developed spot at anal angle; second lobe with spot at apex and mid termen. Fringes pale grey-white, with pale brown patches at anal angle of first lobe, at apex of second lobe and at 5/6 of dorsum. Underside brown, paler at terminal parts of both lobes; with markings as above.

Hind wings and fringes pale brown-grey. Underside pale brown. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Valves asymmetrical. Left valve slightly rounded. Sacculus process originating from 2/7, in slender "S"-shape. Right valve elongate. Sacculus with a small and an elongated rod. Uncus slender, short. Tegumen bilobed. Juxta with asymmetrical anellus arms. Vinculum narrow, arched. Aedeagus curved. Consisting of a cluster of threadlike sclerites.

Female genitalia.— Unknown.

Ecology.— The moth flies in March, at an altitude of 2480 meters. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

Etymology. The species is named after the Inca general Ruminahui.

Hellinsia surinamensis (Sepp, 1855)

(figs 51, 206, 328)

Phalaena didactyla surinamensis Sepp, 1855: 311.

Oedaematophorus pelodactylus Berg, 1885: 284. Syn. nov.

Pterophorus sacrificus Meyrick 1926: 299. Syn. nov.

Material.— *Phalaena didactyla surinamensis* Sepp. Type locality: **Surinam** (lost).

Oedaematophorus pelodactylus Berg. Lectotype (without abdomen): [Argentina], Buenos Aires, no date; Typus; nr. 2290; “*Oedematophorus pelodactylus* 1885, Berg”. (MLPA). Paralectotypes (all without abdomen): 1 specimen, [Argentina], Banda Oriental, no date; Typus; nr. 2290; “*Oedematophorus pelodactylus* Berg, ej que acompanha el tipo”. 1 specimen: [Argentina], Buenos Aires, no date; Typus; nr. 2290; “*Oedematophorus pelodactylus* Berg, ej que acompanha el tipo” (MLPA) [examined].

Pterophorus sacrificus Meyrick. Lectotype ♀ (designated here): **Colombia**, Monte del Eden, 2930 m, no date, gent BM 18707 (BMNH). Paralectotypes 3 specimens: **Colombia**, E Cordilleras, 2200 m, no date (BMNH) [examined].

Diagnosis.— Group: C08. Left valve with saccular process from middle of valve, saccular process strongly curved, with half the valve length. Right valve basally with blunt saccular spine, followed by rod.

Description.— Male, female. Wingspan 21-24 mm. Head appressedly scaled; ochreous brown. Collar with some erected scales. Palpi short and slender, as long as eye-diameter; pale brown mixed with scattered dark brown scales. Antennae faintly ringed pale brown and pale grey-brown, shortly ciliated. Thorax and tegulae ochreous-brown. Abdomen not examined in the present specimens. Hind legs ochreous-white, ringed brown before spur pairs.

Fore wings cleft from 3/5; ochreous-brown. Markings dark brown, consisting of dorsal spot at 1/4; spot before base of cleft and costal spot in first lobe, just beyond base of cleft. Additional dark scaling along costa and at apex of second lobe; at 2/3 of first lobe small costal and dorsal spot and small spot at anal angle of second lobe. Fringes ochreous-brown, but grey at dorsal spot of first lobe and around apex of second lobe. Underside dark brown with yellow-white scales bordering dark spots at costa as above and in apices.

Hind wings grey-brown. Fringes grey. Underside brown. Venous scales orange-brown, in double row; costal row longer, extending into second lobe.

Male genitalia.— Left valve with saccular process from middle of valve, saccular process strongly curved, with half the valve length. Right valve basally with blunt saccular spine, followed by rod. Uncus slender, 2/3 tegumen length. Tegumen bilobed. Juxta stout, with two long, slender anellus arms, lengths similiar to juxta. Vinculum narrow, arched. Aedeagus slender, minimally curved. No cornutus.

Female genitalia.— Antrum centrally placed, length twice width, arched to left lateral side. Ductus bursae slender. Bursa copulatrix very small, vesicular. Apophyses anteriores short, mesally curved. Apophyses posteriores as long as the large, triangular, papillae anales.

Ecology.— The moth flies in March and June. Hostplant *Solanum bonariensis* L., *S. pseudocapsicum* L. and *Solanum verbascifolium*. (Matthews & Lott, 2005).

Distribution.— **Argentina:** Buenos Aires, Banda Oriental, Tigre; **Bolivia:** Medellin; **Colombia;** **Ecuador:** Morona-Santiago; **Paraguay:** Gualra; **Surinam;** **Uruguay.**

Remarks.— Although the type specimen of the present species is considered lost, the description and illustrations given in 1855 are such that a match with *O. pelodactylus* Berg, 1885, and *P. sacrificus* Meyrick, 1926 can be made. In addition, the illustrated host-plant, originally described as a 'thistle' is considered by botanists to be a *Solanum* sp. The life cycle and feeding patterns given both by Sepp (1855) of the Surinam specimens, and by Bourquin (1940) from material from Uruguay, give a match for the species. For this reason I consider *Hellinsia surinamensis* (Sepp, 1855) to be the senior synonym of *Oedaematophorus pelodactylus* Berg, 1885 and *Pterophorus sacrificus* Meyrick, 1926.

Hellinsia conjunctus (Zeller, 1877)
(figs 52, 207)

Mimesoptilus conjunctus Zeller, 1877: 477.

Material.— Lectotype (designated here) ♂: (**Colombia**), Bogota, n.d. (v. Nolcken), gent BM 18704 (BMNH). Paralectotype (designated here) ♂: 3132. **Colombia**, Bogota, n.d. (v. Nolcken), gent CG 3122 (RMNH) [examined].

Diagnosis.— Group: C09. The species is characterized by the grey-brown colour with the brown markings in shape of an oblique dash from before the base of the cleft reaching towards the costa beyond base of cleft, and with three small costal spots in first lobe and anal dash at first lobe with opposite apical dash of second lobe at cleft.

Description.— Male. Wingspan 17 mm. Head appressedly scaled grey-brown. Palpi grey-brown, slightly curved, as long as eye-diameter. Third segment short. Antennae ringed grey-white and dark brown, shortly ciliated. Thorax, tegulae, metathorax and abdomen grey-brown. Middle legs with distinct scale-brush around base of spur pair. Hind legs grey-brown, with brown rings at base of spur pairs and terminally at first tarsal segment. Proximal spur pairs of unequal length, distal pairs of equal length; in both pairs spurs brown-grey with dark brown tip.

Fore wings cleft from 3/5, grey-brown. Markings brown, consisting of oblique dash from before base of cleft reaching towards costa of first lobe beyond base of cleft. At costa of first lobe three small spots, basal spot the smallest. Along costa and in basal half of wing scattered scales. Fringes white-grey. Spot at anal angle of first and apically in second lobe, best expressed in fringes. At anal angle of second lobe pale brown fringe dash and brown dash at apex of first lobe. Underside brown with increasing white scaling towards apex in first and to lesser extent in second lobe. Area along costa of first lobe white with brown spots.

Hind wings brown-grey. Fringes grey-brown. Underside grey-brown. The venous scales black, in double row, costal row longer than dorsal row.

Male genitalia.— Left valve with arched, slender, acute saccular process. Right valve with small saccular knob, followed by narrow rod, with hooked tip. Uncus slender. Tegumen bilobed. Juxta rather slender, with asymmetrical anellus arms. Vinculum narrow, arched.

Female genitalia.— Unknown.

Ecology.— Flight period of moth unknown. Hostplant unknown.

Distribution.— **Colombia:** Bogota.

Hellinsia magnus spec. nov.

(figs 53, 208, 329)

Material.— Holotype ♀: **Ecuador**, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20.xi.1984 (N. Venedictoff), gent CG 5928 (AME/MGCL). Paratype ♂: **Ecuador**, Napo, Rd. Cosanga - Tena km 10, 2230 m, 16.i.1983 (N. Venedictoff), gent CG 5927 (CG).

Diagnosis.— Group: C09. The species is characterized by its wingspan, 46-58 mm. It resembles *H. nigricalcarius* Gielis, but is bigger in size, and differs in saccular processes in left and right valves.

Description.— Male, female. Wingspan 46 (♂) and 58 (♀) mm. Head ochreous-white, with protruding scales between base of antennae. Palpi slender, protruding, $1\frac{1}{2}$ × eye-diameter. Collar ochreous. Thorax and tegulae ochreous-fuscous, tips of tegulae dark brown. Metathorax pale fuscous.

Fore wings cleft from 7/10, colour ferruginous-ochreous, markings brown. Markings consist of diffuse scaling in dorsal half of wing, terminally best expressed; and from base of cleft radiating to costa; dorsal half of first lobe white, with dark dot at anal angle. Fringes whitish in cleft, with dark dash at anal angle; at dorsum pale fuscous. Underside pale brown, with white spot in first lobe as above.

Hind wings shining grey-brown. Fringes pale brown-grey, second and third lobe with dark line in dorsal fringes at 1/4 of fringe length. Underside pale brown. Venous scales ferruginous, in double row, costal row a little longer.

Male genitalia.— Valves asymmetrical, left wider and longer. In left valve arched saccular process of just over 1/3 of valve length. In right valve small saccular knob, followed by small hooked knob. Uncus shorter than tegumen, slender. Tegumen simple. Juxta asymmetrical. Vinculum wide, arched. Aedeagus moderately curved, without cornuti.

Female genitalia.— Ostium sinous shaped. Antrum as long as wide, with two small, longitudinal sclerited anterad. Ductus bursae short, and rather wide. Bursa copulatrix longitudinal, vesicular, without signum. Ductus seminalis almost four times longer than bursa copulatrix, long and slender. Lamina ante-vaginalis simple, rather wide. Apophyses anteriores blunt and short, tapered to acute apices. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in January and November. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha, Napo.

Etymology.— The name magnus (= great, big) reflects the size of the specimen.

Remarks.— The female has been chosen to be the holotype, due to the poor condition of the male paratype.

Hellinsia paramoi Arenberger & Wojtusiak, 2001

(figs 54, 209)

Hellinsia paramoi Arenberger & Wojtusiak, 2001: 73.

Material.— Holotype ♂: **Venezuela**, Paramo el Batallon, Quebrada de los Pios, 2950 m, 4.iii.1996 (J. Wojtusiak), gent Ar 4213 (Wojtusiak). Paratype ♂: **Brazil**, São Paulo, Est Biol Doraceia, nr Salesopolis, 850 m, 27.ix.1971 (E.G. & E.A. Munroe), gent CG 6192 (CNC) [examined].

Diagnosis.— Group: C09. Left valve with straight long saccular spine. Right valve with blunt saccular spine, followed by blunt hook.

Description.— Wingspan 24-27 mm.

Fore wings pale unicolorous ochreous-white. Markings dark brown: spots at costa above base of cleft, first lobe spot in middle of costa, and in mid-termen of second lobe. Fringes pale ochreous-white, at anal region of both lobes distinct black-brown dash.

Male genitalia.— Left valve with straight long saccular spine. Right valve with blunt saccular spine, followed by blunt hook. Uncus moderate, curved. Tegumen bilobed. Juxta with asymmetrical anellus arms. Vinculum rather narrow, arched. Aedeagus moderately curved, with small cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in March and September. Hostplant unknown.

Distribution.— **Brazil**: São Paulo; **Venezuela**.

Hellinsia devriesi (B. Landry & Gielis, 1992)
(figs 55, 210, 330)

Oidaematophorus devriesi B. Landry & Gielis, 1992: 24.

Material.— Holotype ♀: **Ecuador**, Galapagos Islands, Isabela, Sierra Negra, Corazon Verde, xi-xii.1974 (T.J. de Vries) (BMNH). Paratypes: 4 ♀ ♀, **Ecuador**, Galapagos Islands, Isabela, Sierra Negra, Corazon Verde, xi-xii.1974 (T.J. de Vries), gent BL 302, BM 18466 (BMNH); 1 ♀, Sierra Negra, Alemania, xi.1974 (T.J. de Vries) (BMNH, CNC).

Diagnosis.— Group: C11. Left valve with “S”-shaped saccular process, just over 1/3 of valve length. Right valve with saccular rim, but in tip of valve cucullar hook and ridges of setae, near tip dentation.

Description.— Wingspan 17-18 mm. Head brown on fronto-clypeus, white between antennae, anterior half of vertex beige, posterior half of vertex and on occiput brown: collar brown-beige. Palpi erect, slightly longer than vertical diameter of eye, without scale tufts, first segment brown with white. Antennae beige and pale brown scales. Thorax yellowish-brown anteriorly, paler posteriorly. Abdomen dorsally in middle mostly beige as large longitudinal stripe, with yellowish-brown and dark brown scaling on each side, subapically with large dark brown patch; ventrally mottled with dark brown and beige scales on anterior 2/3, apical 1/3 almost uniformly pale (yellowish-brown, beige and white). All legs, coxa, femora and tibia brown with scattered (except on tibia, as patches) white scales; all tibial spurs dark brown on outer side and apically, white on inner side; fore leg epiphysis tuft dark brown: fore leg tarsomeres mostly pale greyish-brown with dark brown and white areas, especially on 1st tarsomere; mid leg tarsomeres mostly greyish-brown except base of 1st tarsomere, white; hind leg tarsi pale brown with paler (almost white) areas.

Fore wing yellowish-brown with dark brown markings: 1st third mottled with pale brown, yellowish-brown and dark brown scales; apical 2/3 mostly white with scattered

dark brown scales, a large dark brown patch slightly before cleft, on costa at base of 1st lobe and at apex of both lobes; more uniformly white between middle of cell and dark brown patch before cleft, at cleft and on inner margin of both lobes medially: fringe mostly pale greyish-brown, with shorter dark brown scales at apex of both lobes usually with white hairs and/or scales on both sides.

Hind wing and fringes uniformly greyish-brown.

Male genitalia.— Left valve with "S"-shaped saccular process, just over 1/3rd of valve length. Right valve with saccular rim, but in tip of valve cucullar hook and ridges of setae, near tip dentation. Uncus curved, moderately long. Tegumen bilobed. Juxta very slender, anellus arms very long, asymmetrical. Vinculum largely extended blunt thorn shape.

Female genitalia.— Ostium bursae located on left side. Antrum weakly sclerotized, large. Ductus bursae very weakly sclerotized and slender. Ductus seminalis not located. Corpus bursae short, narrow, very weakly sclerotized, without visible cornuti. Apophyses anteriores absent. Apophyses posteriores moderately long, straight, directed inwards.

Ecology.— The moth flies in November and December. Hostplants: *Ipomoea setifera* Poir., *I. tiliacea* (Wild) Scoisy and *Merremia umbellata* (L.) H. Hall. (Bigot & Etienne, 2009).

Distribution.— **Ecuador:** Galapagos Islands: Isla Isabela; **Guadeloupe.**

Hellinsia glochinias (Meyrick, 1908)
(figs 56, 211, 331)

Pterophorus glochinias Meyrick, 1908: 501.

Material.— Lectotype ♂ (designated here): **Brazil**, Petropolis, 07 (R.), gent BM 18710 (BMNH) [examined]. Paralectotype 3 ♀♀ (designated here): **Brazil**, Petropolis, 07 (R.), gent CG 5082 (BMNH) [examined].

Diagnosis.— Group: C11. Left valve with saccular spine just over 1/3 of valve length, from middle of valve. Right valve with distally positioned saccular spine, knob and broad rod. On fore wing strong trapezoid spot before base of cleft.

Description.— Male, female. Wingspan 28 mm. Head appressedly scaled, ochreous-ferruginous. Palpi as long as eye-diameter, protruding, slender, ochreous-ferruginous. Antennae ochreous-ferruginous. Thorax, tegulae, metathorax and first abdominal segments ochreous-ferruginous. Mid legs with scale brushes at the base of spur pairs.

Fore wings cleft from 2/3, ochreous-ferruginous. Markings dark brown: large spot just before base of cleft; small spots at 3/4 of costa of first lobe, at apex and at anal region of both lobes. Fringes pale ochreous-brown. Underside as above, but darker scaled.

Hind wings and fringes ochreous-ferruginous. Underside grey-brown. Venous scales ferruginous-brown, in double row; costal row longer than dorsal row.

Male genitalia.— Left valve with saccular spine just over 1/3 of valve length, from middle of valve. Right valve with similarly positioned saccular spine, followed distally by a knob and broad rod. Uncus short and slender. Tegumen bilobed, slender. Juxta with very long and slender anellus arms. Vinculum narrow, arched. Aedeagus distally curved. No cornuti.

Female genitalia.— Ostium centrally positioned, oval. Antrum curved through left side of abdomen. Terminal part of antrum with rimpled surface, making full twist. Ductus bursae as long as antrum, extremely slender. Bursa copulatrix vesicular. No signum. Apophyses anteriores minute. Apophyses posteriores 2 × papillae anales. Papillae anales triangular.

Ecology.— The moth flies in June. Hostplant unknown.

Distribution.— **Brazil:** Rio de Janeiro; **Costa Rica:** Puntaneras.

Hellinsia argutus (Meyrick, 1926)
(figs 57, 212, 332)

Pterophorus argutus Meyrick, 1926: 299.

Pterophorus chionophanes Meyrick, 1930: 569. Syn. nov.

Oidaematophorus chionoptila T.B. Fletcher, 1940: 83. Syn. nov.

Material.— *Pterophorus argutus* Meyrick. Holotype ♂: **Colombia**, Alto de la Arces, 2200 m, iii, gent BM 18714 (BMNH) [examined]. *Pterophorus chionophanes* Meyrick. Holotype ♂: **Peru**, Carabaya, Aguilani, 2750 m, vi (Ockenden), gent BM 18672 (BMNH) [examined]. *Oidaematophorus chionoptila* T.B. Fletcher. Holotype ♂: **Colombia**, Sierra del Libano, 1830 m, v.1899 (H.H. Smith), gent BM 18159 (BMNH) [examined].

Diagnosis.— Group: D01. The species is characterized by the shining silvery colour, with black scales and small spots. Black scales present at tip of hind wing third lobe dorsally.

Description.— Male, female. Wingspan 24–27 mm. Head appressedly scaled, ochreous-white. Palpi protruding, slender, grey-white, 1½ × eye-diameter. Antennae long ciliated, cilia as long as the thickness of the antennae, ochreous grey-white. Thorax, tegulae and metathorax shining pale ochreous-white. Hind legs shining white, with two pairs of spurs of unequal length.

Fore wings cleft from 3/5, colour shining ochreous-white, more whitish near wing base and more ochreous near the apices. Dark brown small spot before base of cleft and small longitudinal spot in first lobe just beyond base of cleft. Isolated dark scales on wing. Fringes white, with small pale brown dash near anal angle of second lobe. Underside white, densely speckled with black-grey scales.

Hind wings grey-white. Tip of third lobe with small black spot. Fringes white. Underside shining white-grey. Venous scales hardly darker than background colour, in double row, costal row shorter than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve elongate, with acute tip. Saccular spine just short of valve apex. Right valve with acute tip, but without saccular process. Uncus slender. Tegumen simple. Anellus arms asymmetrical. Vinculum arched. Aedeagus slightly arched, Apex oblique, acute, middle with small sclerotized ridge, coecum slender.

Female genitalia.— Ostium centrally positioned, wide and minimally excavated. Antrum gradually funneling, a little longer than wide at ostium. Ductus bursae just over length of antrum. Bursa copulatrix vesicular, without signum. Ductus seminalis long and slender. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales. Papillae anales blunt.

Ecology.— The moth flies in April, May, June and October, at altitudes from 2000 to 3450 meters. Hostplant unknown.

Distribution.— **Colombia:** Alto de la Arces, Sierra del Libano; **Ecuador:** Napo, Loja; **Peru:** Carabaya.

Hellinsia balanotes (Meyrick, 1908)
(figs 58, 213, 333)

Pterophorus balanotes Meyrick, 1908: 503.

Pterophorus aquila Meyrick, 1908: 503.

Pterophorus serenus Meyrick, 1913: 113.

Material.— *Pterophorus balanotes* Meyrick. Holotype ♂: U.S.A., S. Florida, Titusville, viii.(18)94, gent BM 10183 (BMNH) [examined].

Diagnosis.— Group: D01. Left valve with very long, extremely slender saccular process. Right valve without saccular process.

Description.— Male, female. Wingspan 30-42 mm. Head appressedly scaled, pale brown. Between base of antennae paler. Palpi as long as eye-diameter, slender. Antennae pale ochreous-brown, shortly ciliated. Thorax brown. Tegulae pale brown. Abdomen pale brown, with longitudinal darker lines dorsally, laterally and ventrally. Legs pale brown. Hind legs with two pairs of spurs of equal length.

Fore wings cleft from 3/4, pale (ochreous-)brown to pale white-brown. Indistinct streak from base of wing parallel to dorsum in basal 1/4 and progressing into a more centrally placed dash toward base of cleft. Indistinct costal streak above cleft. At dorsum of first lobe and outer margin and dorsum of second lobe dark spots at tips of veins. Two small spots before base of cleft. Fringes pale grey-brown. Underside pale white-brown.

Hind wings pale brown. Fringes pale grey-brown, basally grey-white. Underside pale brown. Venous scales ferruginous to dark black-brown in double row. Costal row progresses into second lobe. Dorsal row margined by small row of pronounced, darker coloured, scales of the background.

Variation.— The intensity and number of spots along termen and dorsum of forewing lobes is variable.

Male genitalia.— Valvae asymmetrical. The left valve broad, rounded with slender and long saccular process, extending beyond length of valve. Right valve longitudinal, apex pointed. Uncus slender, long. Tegumen bilobate, rather slender. Juxta stout, asymmetrical. Vinculum arched. Aedeagus slightly curved; coecum well developed; ductus ejaculatorius very long.

Female genitalia.— Antrum conical, with small longitudinal sclerotized plates; left laterally placed. Ductus bursae rather short, dividing into long and very pronounced ductus seminalis and vesicular bursa copulatrix. No signum. Pronounced 8th sternite, proximally progressing into laterally pointing apophyses anteriores. Apophyses posteriores five times longer than papillae anales.

Ecology.— The moth flies the year around. Hostplants *Baccharis halimifolia* L., *B. salicina* Torr. & Gray, *B. neglecta* Britton, *B. angustifolia* Minchx., *Pluchea sericea* (Nutt.) Coville. (Matthews & Lott, 2005).

Parasites.— *Macrocentrus* spec. (Hymenoptera, Braconidae).

Distribution.— **Guatemala**: Xajaxac; **Mexico**: Veracruz, Morelos. **Nearctic**: U.S.A.

Australasian: Australia.

Remarks.— The species is well known from the U.S.A. The description and the note on the variation are based on material from the U.S.A.

Hellinsia fissuralba Gielis, 1996
(figs 59, 214)

Hellinsia fissuralba Gielis, 1996: 98.

Material.— Holotype ♂: **Peru**, Carabaya, Oconeque, 2135 m, vii.1904 (Ockenden), gent CG 5046 (BMNH).

Diagnosis.— Group: D01. Left valve with long, basally hooked saccular process. Right valve without saccular process. Species is characterized by white markings around cleft. The male genital structure resembles *H. chionoptila* T.B. Fletcher. It is characterized by more rounded tips of valvae and the tip of aedeagus is round in stead of oblique as in *chionoptila*.

Description.— Male. Wingspan 21 mm. Head appressedly scaled, ferruginous-brown. Palpi not present in type specimen. Antennae long ciliated (as long as thickness of antenna), faintly ringed ochreous-white and pale brown. Thorax and tegulae grey-white. Hind legs with two pairs of spurs of unequal length.

Fore wings cleft from 2/3. Colour pale grey-brown. Markings darker brown, consisting of oblique spot before base of cleft, costal darkening along entire wing, most pronounced in first lobe and darkening on terminal 2/3 of second lobe. White at discal field up to oblique spot before base of cleft and margin around base of cleft progressing along dorsum of first lobe. Fringes brown. Underside dark brown speckled.

Hind wings grey-brown. Fringes grey-brown in first and second lobe, and white in third lobe. Underside pale brown, speckled with dark brown scales. Venous scales pale ferruginous, in double row, costal row shorter than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve elongate with rounded top. Saccular spine reaching as far as tip of valve. Right valve elongate with slightly more acute tip as left valve. No saccular processes. Aedeagus with small sclerotized ridges near tip.

Female genitalia.— Unknown.

Ecology.— The moth flies in July and August. Hostplant unknown.

Distribution.— **Mexico**: Morelos; **Peru**: Carabaya.

Hellinsia fusciciliatus (Zeller, 1877)
(figs 60, 215, 334)

Mimeseoptilus fusciciliatus Zeller, 1877: 475.

Material.— Holotype ♀: **Colombia**, Bogota, ii-iii, gent BM 18705 (BMNH) [examined].

Diagnosis.— Group: D01. Left valve with long and stout, slightly curved saccular process. Right valve without saccular process. Fore wing longitudinal central spot

obliquely ending before base of cleft, and narrow longitudinal spot in first fore wing lobe.

Description.— Male, female. Wingspan 21 mm. Head, collar and frons appressedly scaled, pale ferruginous. Around eye creamish. Palpi protruding, $1\frac{1}{2} \times$ eye-diameter. First segment creamy-white, second and third segment pale ferruginous. Third segment very short. Antennae greyish-white, shortly ciliated. Thorax pale ferruginous. Tegulae ferruginous. Metathorax white, mixed with ferruginous scales. Abdomen pale ferruginous, laterally dark brown. Fore legs, mid legs and hind legs ferruginous-ochreous. Hind legs with two pairs of spurs of unequal length.

Fore wings cleft from 2/3, colour ochreous. Markings ferruginous; streak from dorso-basal area to just before base of cleft, obliquely ending; a pale posterior extension as far as base of cleft; narrow central line in first lobe; faint longitudinal lines in center and towards apex of second lobe; and a faint line along costa as far as base of cleft. Fringes grey. Darkened in cleft. Underside pale brown. Towards apex of both lobes gradually turning creamish.

Hind wing and fringes brown-grey. Underside grey-brown, along costa of first lobe from base of cleft to tip black streak. Venous scales black, in double row; dorsal row shorter than costal row.

Male genitalia.— Left valve with long and stout, slightly curved saccular process. Right valve without saccular process. Uncus short, curved. Tegumen bilobed. Juxta broad, with asymmetrical anellus arms. Vinculum broad, arched. Aedeagus mildly curved near tip.

Female genitalia.— Ostium centrally positioned, oblique. Antrum as long as wide, with two small longitudinal sclerites, and a side chamber as wide as width of antrum. Ductus bursae very short, and progressing into both long and slender bursa copulatrix and ductus seminalis. Bursa copulatrix $2 \times$ the length of antrum. Lamina ante-vaginalis narrow sclerotized, arched. Apophyses anteriores absent. Apophyses posteriores just over $2 \times$ the length of papillae anales.

Ecology.— The moth flies in February to May and October. Hostplant unknown.

Distribution.— **Colombia:** Bogota, Cuequeta; **Costa Rica:** Puntarenas; **Venezuela:** Aragua.

Hellinsia monteverda Gielis, 1999
(figs 61, 216)

Hellinsia monteverda Gielis, 1999: 309.

Material: Holotype ♂: **Costa Rica**, Punta, R.B. Monteverde, 1520 m, x.1993 (N. Obando), gent CG 3876 (Inbio).

Diagnosis.— Group: D01. Both valves arched; left valve with long, slender, slightly curved saccular spine; right valve without saccular process. The species resembles a poorly marked specimen of *Hellinsia trachyphloeus* Meyrick, but differs in the exact positioning of the forewing spots and the saccular processes in the male genitalia.

Description.— Male. Wingspan 23 mm. Head appressedly scaled, brown-ochreous. Frons brownish mixed. Collar with some erect scales, brownish. Palpi slender, curved up along eye, $1\frac{1}{2} \times$ eye-diameter. Third palp segment as long as second, slender, protruding. Antennae mottled in basal half and ringed in distal half, ochreous and pale

brown. Thorax and tegulae ochreous, with sparse brown scales. Metathorax creamy, mixed with brown scales. All legs ochreous with scattered brown scales. In hind leg small bristles of dark brown scales at bases of spurs and between proximal end of segment and proximal spur pair. Distal spurs of unequal length, proximal pair not complete.

Fore wings cleft from 3/5h, ochreous, with brown markings. Costal scales from base to base of cleft, longitudinal costal spot at 1/3d and small dot at 2/3d of costa of first lobe, small apical dots in both lobes, two small dots close to apex at dorsum of first lobe and poorly developed dot at anal region of second lobe, small dot in center of cell and oblique spot at base of cleft. Fringes grey, in region of outer margin darker. Underside brown, costal and dorsal markings as above.

Hind wings and fringes brown-grey. Underside grey-brown. Venous scales ferruginous-brown, in double row, costal row longer and extending into second lobe.

Male genitalia.— Valves symmetrical in shape, curved, especially in distal half. Left valve with a long saccular process, basally straight, curved in distal 1/3rd. Right valve without saccular process. Uncus moderate, slender. Tegumen 1/3rd of valve length, rather slender. Juxta elongate, with two slender, short anellus arms. Vinculum arched, wide. Aedeagus tubular, without cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in October. Hostplant unknown.

Distribution.— **Costa Rica:** Monteverde.

Hellinsia quitus spec. nov.
(figs 62, 217, 335)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago, Macas, 1000 m, 11-23.xii.1997 (V. Pelz), gent CG 4508 (CG). Paratype ♀: **Ecuador**, Morona-Santiago, Macas, 1000 m, 2-8.i.1998 (V. Pelz), gent CG 4520 (CG).

Diagnosis.— Group: D01. Left valve with basally blunt, distally slender saccular process, of just over 2/3 valve length. Right valve without saccular process.

Description.— Male, female. Wingspan 17-19 mm. Head appressedly scaled, dark brown. Collar with long, erect, bifid scales. Palpi slender, protruding, dark brown, as long as eye-diameter. Antennae shortly ciliated, dark brown. Thorax, tegulae and abdomen dark brown. Metathorax grey-white. Fore, mid and hind legs pale brown-grey, base of each spur pair with dark brown scale bristle. Hind legs with two pairs of spurs, grey-white with dark tips, proximal pair longer than distal pair and medial spurs longer than lateral spurs.

Fore wings cleft from 3/5th, dark brown. Markings darker, black-brown: dash before base of cleft and costal streak just beyond base of cleft. Fringes dark grey-brown. Underside dark brown, with two pale streaks at costa above base of cleft and just beyond.

Hind wings dark grey-brown. Fringes grey-brown. Underside dark brown. Venous scales ferruginous, in two rows, costal row longer.

Male genitalia.— Left valve saccular process length over 2/3 valve length. Right valve without saccular process. Juxta with two long and slender anellus arms. Uncus

curved and rather short. Tegumen slender. Vinculum simple, arched. Aedeagus rod shaped, without cornuti.

Female genitalia.— Ostium left lateral positioned. Antrum almost circular with two small sclerites. Separation between ductus bursae and ductus seminalis directly from antrum. Bursa copulatrix simple, vesicular. No signum. Ductus seminalis longer than bursa copulatrix, vesicular. Lamina post-vaginalis in flattened "V"-shape. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in December and January, at an altitude of 1000 metres. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago: Macas.

Etymology.— Quitus is the name of a tribe in mediaeval Ecuador.

Hellinsia obandoi Gielis, 1999
(figs 63, 218)

Hellinsia obandoi Gielis, 1999: 309.

Material.— Holotype ♂: **Costa Rica**, Puntarenas, Estación La Casona, 1250 m, viii.1993 (N.G. Obando), gent CG 3874 (Inbio).

Diagnosis.— Group: D02. Left valve with long, slender saccular spine. Right valve with small saccular knob. The species closely resembles *Hellinsia phlegmatica* Walsingham, but differs in the more developed markings and in the male genitalia by the absence of the saccular spine in the middle of the right valve.

Description.— Male. Wingspan 22 mm. Head pale grey-brown. Dark brown collar with some erect scales. Face pale grey-brown. Palpi pale grey-brown, protruding, rather slender, 2 × eye-diameter. Antennae faintly ringed dark brown and dark grey-brown, shortly ciliated. Thorax and tegulae grey-brown. Metathorax brownish creamy white. Hind legs dark grey-brown, distally gradually pale, tarsal segments creamy, with two pairs of spurs. Both inner spurs longer than outer spurs and proximal longer than distal pair.

Fore wings cleft from 3/5, grey-brown. Markings dark brown: dark scaling along costa progressing into rectangular spot beyond base of cleft; at 2/3 of costa; at apex and anal region of first lobe; oblique dash close before base of cleft; small spot in cell; faint dashes in dorsal half of wing with two distinct dashes ending at outer margin of second lobe. Fringes dark brown-grey, with darker segment at 4/5 of costa of first lobe and a white dash between dark costal spots, at apex and anal region of first lobe. Underside as above, but darker marked.

Hind wing and fringes brown-grey. Underside dark grey-brown. Venous scales blackish, in double row, costal row longer and extending into second lobe.

Male genitalia.— Valvae asymmetrical, with blunt tip. Left valve wider than right valve, with long and curved saccular spine as long as valve end. In right valve small saccular spine at 3/10. Uncus short. Tegumen well-developed. Vinculum slender, arched. Anellus arms asymmetrical, well-developed. Aedeagus curved in "S"-shape, without cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in August. Hostplant unkown.

Distribution.— **Costa Rica:** Puntaneras.

Hellinsia costalba Gielis, 1996
(fig. 219)

Hellinsia costalba Gielis, 1996: 98.

Material.— Holotype ♂: **Peru**, Cuzco, 18.viii.1973 (B.V. Ridout), gent CG 5084 (BMNH). Paratypes 3 ♂♂: **Peru**, Cuzco, 19.viii.1973 (B.V. Ridout), gent CG 5093 (BMNH).

Diagnosis.— Group: D03. Left valve with long, slender, almost straight saccular process. Right valve with small saccular hook. The species is characterized by the white costa, of the basal 1/3 of the fore wing and the anterior white half of the thorax. The genital structure is close to *H. hololeucus* Zeller, from Chile. The species differs by the clear markings and colour.

Description.— Male. Wingspan 21 mm. Head appressedly scaled, white between base of antennae, collar and frons dark brown. Palpi as long as eye-diameter, pale brown at base to dark brown at apex, medially creamy, curved up along face. Antennae pale brown, almost pectinate. Thorax and tegulae pale brown-ochreous, with anterior half white, extending into white costal line on fore wings. Metathorax pale ochreous-brown. Legs longitudinally lined dark brown and white.

Fore wings cleft from 3/5, pale ochreous-brown. At basal half a white costal line and dark spot at base of cleft. Scattered dark scales on wing. Fringes brown-ochreous, in cleft and around apex of both lobes brown-grey. Underside grey-brown.

Hind wings and fringes brown-grey. Underside grey-brown. Venous scales black, in double row; costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. In left valve long saccular spine, reaching termen of valve. In right valve small saccular thorn at 2/5. Tegumen and uncus slender. Vinculum arched. Aedeagus slightly curved, without cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in August. Hostplant unknown.

Distribution.— **Peru:** Cuzco.

Hellinsia sublatus (Walsingham, 1915)
(figs 64, 220, 336)

Pterophorus sublatus Walsingham, 1915: 441.

Material.— Holotype ♀: **Mexico**, Guerero, Amula, 1835 m, viii (H.H. Smith), gent BM 18146 (BMNH). Paratype ♂: **Mexico**, Guerrero, Omilteme, 2440 m, vii (H.H. Smith), gent CG 5073 (BMNH) [examined].

Diagnosis.— Group: D03. Left valve wider than right valve, with long, slender saccular spine. Right valve with distinct saccular hook. The species is characterized by pale white-yellow colour with costal markings in first fore wing lobe and distinct colour pattern on underside of fore wing.

Description.— Male, female. Wingspan 17 mm. Head appressedly scaled, ochreous. Collar with some erect scales. Palpi ochreous, slender, protruding, as long as

eye-diameter. Antennae ochreous, shortly ciliated. First antenna segment dorsally with slender longitudinal brown line. Thorax, tegulae, metathorax and abdomen ochreous.

Fore wings cleft from 7/10, pale yellow. Markings pale brown; some scales at discus and before base of cleft, costal spot at base of cleft and reaching towards apex, apical spot in first lobe, and between costal and apical spots faint scaling, as well as along entire costa; at dorsum of first and second lobe in anal region small brown spot. Fringes white-grey. Underside grey-white with brown scaling which is intense at wing base and lessening towards apex of both lobes, more intense along veins.

Hind wings pale grey. Fringes pale grey. Underside pale brown. Venous scales dark brown, in double row; dorsal row hardly developed.

Male genitalia.— Left valve wider than right valve, with long, slender saccular spine. Right valve with distinct saccular hooked thorn. Uncus short, curved. Tegumen simple. Juxta stout, with pair of asymmetrical anellus arms. Vinculum rather broad, arched. Aedeagus slightly curved, no obvious cornutus.

Female genitalia.— Ostium centrally positioned, excavated. Antrum 2 × longer than wide, near ostium circularly curved around ostium. Ductus bursae very short, with some small transverse sclerites. Bursa copulatrix vesicular, without signum. Ductus seminalis more than 2 × length bursa copulatrix, long, slender ending in vesicular widening. Apophyses anteriores blunt, almost as long as papillae anales. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in July and August, at an altitude of 1800 to 2450 meters. Hostplant unknown.

Distribution.— **Mexico:** Guerrero, Morelos, Sinaloa; **Costa Rica:** Guanacaste.

Hellinsia tinctus (Walsingham, 1915)
(figs 65, 221, 337)

Pterophorus tinctus Walsingham, 1915: 443.

Material.— Holotype ♀: **Mexico**, Guerrero, Amula, 1830 meter, viii-ix (H.H. Smith), gent BM 18149 (BMNH) [examined].

Diagnosis. Group: D03. Left valve with long and slender saccular spine of more than 2/3rd of valve length. Right valve with narrow saccular rod, with small hook at tip.

Description.— Wingspan 18 mm. Head appressedly scaled, ochreous white; collar and vertex near collar pale ferruginous. Palpi slender, slightly curved up, ochreous-white; third segment short; basally on second segment some drooping scales. Antennae yellow-white, shortly ciliated. Thorax glued; tegulae ochreous-white. Abdomen pale ferruginous-white. Hind legs ochreous-white, with ferruginous rings at base of spur pairs. Spur pairs of unequal length.

Forewings cleft from 2/3, pale straw-yellow. Markings brown, consisting of scaling at basal 1/3 of dorsum; some scales in discus; oblique spot before base of cleft; costal spot above base of cleft and two smaller ones at costa of first lobe; some dark scales at apices of both lobes; small spot at 1/3 of dorsum of first lobe; anal spot in second lobe and small mid-terminal spot in second lobe. Fringes grey-yellow; dorsal outer 1/3 of first lobe and around apex of second lobe brown-grey. Underside brown, with whitish costal line interrupted by costal spot as above.

Hind wings grey-brown. Fringes brown-grey. Underside grey-brown, more intense grey in third lobe. Venous scales black, in double row; start of costal row proximad of shorter dorsal row.

Male genitalia.— Left valve with long and slender saccular spine of more than 2/3 of valve length. Right valve with narrow saccular rod, with small hook at tip. Uncus short, curved near tip. Tegumen bilobed. Juxta broad, with asymmetrical anellus arms. Vinculum narrow, arched.

Female genitalia.— Ostium positioned on left side, wide and rather flat. Antrum funnel-shaped, with two small, longitudinal sclerites. Ductus bursae as long as antrum. Bursa copulatrix in shape of elongated barrel, without signum. Ductus seminalis over 2 × length of bursa copulatrix, slender, widened and vesicular. Apophyses anteriores slender, as long as papillae anales. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in August and September. Hostplant unknown.

Distribution.— **Mexico:** Guerrero; **Nearctic:** U.S.A.

Hellinsia hololeucus (Zeller, 1874)
(figs 66, 222, 338)

Leioptilus hololeucus Zeller, 1874: 445.

Material.— Holotype ♂: Chile, Valparaiso, xi, gent BM 18168 (BMNH) [examined].

Diagnosis.— Group: D04. Left valve with long, stout, straight saccular process. Right valve with distinct saccular hook. The species is characterized by silvery-white colour and presence of sparse ochreous-white markings.

Description.— Male, female. Wingspan 15-19 mm. Head appressedly scaled, silvery white. Collar ochreous-white. Frons and scales around base of antennae ochreous-white. Palpi curved upwards, 1½ × eye-diameter; second segment as long as third segment, with erect scales. Antennae indistinctly ringed grey-white and grey-brown, shortly ciliated. Thorax, tegulae and metathorax silvery white with ochreous shine. Abdomen whitish-yellow, with narrow dorsal ferruginous line. Legs creamy-white. Hind legs with two pairs of spurs; proximal pair has longer inner spur, distal pair of spurs of equal length.

Fore wings cleft from 2/3; colour silvery white, mixed with sparse scales with ochreous gloss. Before base of cleft oblique ochreous dot. At costa of first lobe beyond base of cleft indistinct ochreous-brown dot. Ochreous-black dots at dorsum of first lobe at 1/2 and 3/4 and at dorsum of second lobe at 3/4 and near apices. Second lobe centrally with small longitudinal ochreous-brown spot. Fringes silvery-white, distally greyish. A grey-ochreous dash near anal angle of second lobe. Underside silvery-white, mixed with isolated grey-white scales.

Hind wings and fringes silvery-white. At tip of all lobes small ochreous dots. Underside silvery-white, mixed with isolated grey-white scales. Venous scales in double row, ferruginous. Costal row pronounced, dorsal row ill-developed.

Male genitalia.— Left valve with long, stout, straight saccular process. Right valve with distinct saccular thorn-like process. Uncus moderate in size and length. Tegumen bilobate. Vinculum arched. Juxta symmetrical. Aedeagus slightly curved, pointed toward top.

Female genitalia.— Antrum flattened, progressing into small narrowed ductus bursae, $1\frac{1}{2}$ × longer than wide. Ductus bursae short. Bursa copulatrix vesicular, with some spiculae. Ductus seminalis originating from half the ductus length; Ductus seminalis 2 × length of bursa and slender. Apophyses posteriores 2 × length of papillae anales. Apophyses anteriores 2/3 of apophyses posteriores, but stout and curved laterally. Lamina ante-vaginalis arched.

Ecology.— The moth flies in Februari and from October to December. Hostplant unknown, but adults were flying around wild sage (*Salvia* sp.) (Zeller, 1874).

Distribution.— Chile: Valparaiso, Santiago, Coquimbo, Nuble.

Hellinsia phlegmaticus (Walsingham, 1915)
(figs 67, 223, 339)

Pterophorus phlegmaticus Walsingham, 1915: 445.

Pterophorus correptus Walsingham, 1915: 445.

Material.— Holotype of *Pterophorus phlegmaticus* Walsingham ♀: Mexico, Veracruz, Jalapa, Trujillo, 18 (..) (Godman & Salvin), gent BM 18153 (BMNH) [examined].

Holotype of *Pterophorus correptus* Walsingham ♂: Mexico, Veracruz, Orizaba xii.1887 (Godman), gent BM 18155 (BMNH) [examined].

Diagnosis.— Group: D04. Left valve with large, curved saccular spine, over 2/3 of valve length. Right valve with saccular hook with length over half the width of valve.

Description (Walsingham, 1915).— “Antennae brownish cinereous. Palpi short, smooth, suberect, slender; brownish cinereous. Head dark brown, paler beneath the antennae. Thorax dirty whitish, thickly shaded with dark brownish fuscous behind the anterior margin. Forewings pale brownish cinereous, profusely dusted with dark brownish fuscous and whitish scales, the white prevailing along the costa, especially at the base, and at the base of the fissure, up to which point the dark brown dusting is thickly distributed from the base, extending also conspicuously along the fold; it is also somewhat concentrated along the costa above the fissure, but without forming any distinct spots, although one, a little beyond the base of the fissure, is somewhat strongly indicated; cilia dark tawny brownish, somewhat paler on the dorsum; a small dark spot is indicated on the lower margin of each lobe before its apex. Wingspan 18 mm. Hindwings pale brownish cinereous, rather shining. Abdomen brownish cinereous, whitish towards the base. Legs whitish”.

Male genitalia.— Left valve with large, curved saccular spine, over 2/3 valve length. Right valve with saccular hook with length over half the width of valve. Uncus short and slender. Tegumen slightly longer than uncus, bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum rather wide, arched. Aedeagus minimally curved, with acute tip. Cornutus consisting of sclerotized dot, just before tip.

Female genitalia.— Ostium centrally positioned, with waved rim. Antrum as long as wide, with longitudinal sclerotized ridges. Ductus bursae very short, immediately splitting into short, vesicular bursa copulatrix, and long and slender ductus seminalis. The latter nearly 3 × length of former, with vesicular ending. Lamina ante-vaginalis arched, simple. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in July, August, October and December. Hostplant unknown.

Distribution.— **Guatemala:** Cerro Zunil; **Mexico:** Chihuahua, Veracruz.

Hellinsia postnigrata spec. nov.
(figs 68, 224)

Material.— Holotype ♂: **Ecuador**, Pichincha, Septimo Paraiso Res, 0 01'S 78 47'W, 1300 m, 10.v.2002 (B. Landry & L. Roque), gent CG 4833 (MHNG).

Diagnosis.— Group: D04. Left valve with gradually curved long saccular process. Right valve saccular process long, rod-like with hooked tip. The species resembles *H. praenigratus* Meyrick, but differs in the costal spot in the first fore wing lobe and the scale bristle at the fore and mid leg.

Description.— Male. Wingspan 15 mm. Head appressedly scaled, ferruginous-ochreous, face between eyes pale brown. Collar pale brown. Palpi slender, protruding, as long as eye diameter, dark brown with ochreous scales at terminal parts of segments. Antennae shortly ciliated; first segment with ventral, brown, scale bristle; basally distinct and terminally vaguely ringed dark brown and ochreous. Thorax and tegumen pale ferruginous-ochreous, caudal margin with regular row of brown scales. Metathorax brown, terminally and laterally mixed ochreous. Fore and mid legs ochreous, with dark brown scale bristles around base of spur pairs. Hind legs missing.

Fore wings cleft from 3/5th, pale ochreous, with diffusely scattered ferruginous scales. Markings black-brown: row of scales at anal vein; small discal spot; oblique, linear spot at base of cleft; in first lobe: costal spots, just beyond base of cleft, at 1/2 and 3/4th; longitudinal spot central in lobe; and less distinct central spot in second lobe; diffuse darkening towards termen in both lobes. Fringes grey-brown; at termen of first lobe and around apex of second lobe blackish. Underside dark brown, paler towards apex of both lobes.

Hind wings and fringes brown-grey. Underside dark brown in basal half, gradually turning greyish towards apex of lobes. Venous scales black, in double row, costal row longer.

Male genitalia.— Left valve with basally strongly arched saccular spine, which has length of more than 2/3 valve length. Right valve with saccular rod with large hooked tip. Uncus moderate, slender. Tegumen bilobed. Juxta wide and short, with narrow and wide anellus arms. Vinculum arched, rather narrow. Aedeagus with acute tip. No cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in May, at an altitude of 1300 meters. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

Hellinsia palmatus (Meyrick, 1908)
(figs 69, 225, 340)

Pterophorus palmatus Meyrick, 1908: 495.

Material.— Lectotype (designated here) ♂: **Brazil**, São Paulo, (19)07 (R.), gent BM 18864 (BMNH). Paralectotype (designated here) ♀: **Brazil**, São Paulo, (19)07 (R.), gent CG 5089 (BMNH) [examined].

Diagnosis.— Group: D05. Left valve with long, gradually curved saccular process. Right valve with simple long saccular rod. The species is characterized by pale colour of fore wing with delicate pale brown longitudinal mark from near wingbase to base of cleft.

Description.— Male, female. Wingspan 18-19 mm. Head appressedly scaled, creamy-white. Collar pale ferruginous, with some erect scales. Frons greyish-ferruginous. Palpi as long as eye-diameter, greyish-ferruginous, protruding. Antennae indistinctly ringed pale ferruginous and creamy-ferruginous. Thorax, tegulae and metathorax pale ferruginous-creamy. Fore legs pale brown. Hind legs pale ferruginous-creamy, strongly shaped, with two pairs of long spurs of unequal length.

Fore wings cleft from 2/3, creamy-white. Markings pale ferruginous, in shape of dash from wing base to base of cleft; small discal spot and small spot just before base of cleft; faint dash in first lobe and small dot at anal region of second lobe. Fringes ferruginous-creamy, with more ferruginous tinge at cleft. Underside pale brown.

Hind wings creamy-ferruginous. Fringes creamy-ferruginous. Underside pale brown. Venous scales in double row; costal row creamy-ferruginous and shorter than dorsal row; dorsal row orange-ferruginous.

Male genitalia.— Left valve with long, gradually curved saccular process. Right valve with simple long saccular rod. Uncus stout, straight. Tegumen simple, wide. Juxta stout, with two almost symmetrical anellus arms. Vinculum narrow, arched. Aedeagus mildly curved, with rather acute tip. No cornutus.

Female genitalia.— Ostium left lateral, simple. Antrum rather short, gradually funneling, with two small, longitudinal sclerites. Ductus bursae as long as antrum. Bursa copulatrix large, vesicular, without signum. Ductus seminalis longer than bursa copulatrix, slender, acute ending. Lamina ante-vaginalis simple, arched. Apophyses anteriores absent. Apophyses posteriores just over papillae anales. Papillae anales large, triangular.

Ecology.— Flight period of moth unknown. Hostplant unknown.

Distribution.— **Brazil:** São Paulo.

Hellinsia montezerpae Arenberger & Wojtusiak, 2001
(figs 70, 226)

Hellinsia montezerpae Arenberger & Wojtusiak, 2001: 74.

Material.— Holotype ♂: **Venezuela**, Cordillera de Merida, Merida, Monte Zerpa, 3250 m, 13.ii.1996 (J. Wojtusiak), gent Ar 4055 (Wojtusiak).

Diagnosis.— Group: D08. Left valve with large and well-developed saccular process of over 2/3 of valve length.

Description.— Wingspan 33 mm. Head grey-brown. Palpi pale brown-grey, $1\frac{1}{2} \times$ eye-diameter. Antennae pale brown, shortly ciliated. Thorax and tegulae brown-grey; metathorax pale brown-grey. Mid legs grey-white, brown at end of segments; tibia with two brown scale bristles.

Fore wings cleft from 2/3, brown-grey. Markings dark brown: an oblique spot well before base of cleft, and separated from the cleft by pale area; longitudinal line in center of first lobe; dark costal line from wingbase to base of cleft; three costal spots in first lobe; small spot at anal area of first lobe; scattered scales on wing. Fringes brown-grey,

paler at anal area of second lobe. Underside dark brown, with faint spot pattern as above.

Hind wings and fringes pale grey-brown. Fringes basally darker, shaping a base line, on all lobes. Underside dark grey-brown. Venous scales, in double row, costal row longer.

Male genitalia.— Left valve with large and well-developed saccular process of over 2/3 of valve length. Right valve with two small saccular knobs. Uncus moderate, arched. Tegumen bilobed. Juxta stout, with slender, asymmetrical anellus arms. Vinculum wide, arched. Aedeagus mildly arched, blunt tip, without cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in February, at an altitude of 3250 meters. Hostplant unknown.

Distribution.— **Venezuela:** Merida.

Hellinsia grandis (Fish, 1881)
(figs 71, 227, 341)

Lioptilus grandis Fish, 1881: 141.

Pterophorus baccharides Grinnell, 1908: 317.

Diagnosis.— Group: D09. Left valve with long, whip-like saccular process. Right valve with two small saccular knobs. The species is characterized by size and colour, and compared to *H. balanotes* Meyrick its more pointed wing-shape.

Description.- Male, female. Wingspan 30-34 mm. Head appressedly scaled, pale brown-white, collar with erect scales. Palpi slender, as long as eye-diameter, protruding. Antennae brownish white, shortly ciliated. Thorax, tegulae, metathorax and abdomen pale brown-white. Legs pale brown-white with some pronounced brown scales near spur pairs.

Fore wings cleft from 2/3; pale brown-white. Wing tips of both lobes elongated and rather slender. Markings consisting of poorly developed spots at veins along outer wing margin and almost obsolete spot before base of cleft. Fringes as wing colour, basally slightly paler. Underside as above.

Hind wings and fringes greyish pale brown-white. Underside greyish-white. Venous scales ferruginous-orange, costal row longer and extending into second lobe; dorsal row short, more brownish tinged.

Male genitalia.— Left valve with long, whip-like saccular process. Right valve with two small saccular knobs. Uncus moderate, slender. Tegumen bilobate, slender, triangular. Juxta moderate, with asymmetrical anellus arms. Vinculum curved, narrow. Aedeagus slightly curved, with thread-like cornutus. Coecum ill-developed.

Female genitalia.— Ostium left lateral positioned. Antrum as long as wide, with two well-developed longitudinal sclerites. Ductus bursae rather short. Bursa copulatrix vesicular, without signum. Ductus seminalis long, almost 3 × bursa copulatrix, and slender, ending vesicular. Anterior margin of 8 sternite with short, blunt, laterally directed apophyses anteriores. Apophyses posteriores almost four times papillae anales.

Ecology.— The moth flies in August. Larvae feed on *Baccharides pilularis* D.C., in which they bore the stems.

Distribution.— **Mexico:** Veracruz; **Guatemala:** Baja Vera Paz, Totonicapam (Walsingham, 1915); **Nearctic:** U.S.A.

Hellinsia huayna spec. nov.
(figs 72, 228)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago Prov, Macas, Preano-Alshi, 5 km SE Alshi, 1700 m, 23.ix-4.x.2000 (V. Pelz), gent CG ♂ 4539 (CG). Paratype: **Ecuador**, Tungurahue, 20 km E Baños, San Francisco, 1290 m, 26.ix.2002, (C. & F.K. Gielis & V. Pelz), (CG).

Diagnosis.— Group: D09. Left valve with prominent stout saccular process. Right valve with rodlike saccular process, with a hooked extension basally.

Description.— Male. Wingspan 20 mm. Head appressedly scaled, vertex and between base of antennae grey-white with scattered brown scales, face brown. Collar grey-white, with long, erect, bifid scales. Palpi slender, protruding, white mixed grey, as long as eye diameter. Antennae pale brown-grey, segments basally pale coloured, distally darker, giving antennae ringed appearance. Thorax and tegulae ochreous brown-grey. Fore and mid legs grey-white, speckled dark brown. Hind legs grey-white, ringed four times brown: at base of femur, at base of spur pairs and between spur pairs; tarsal segments proximally pale and distally brown. With two pairs of spurs, grey-white and dark brown tipped, proximal pair longer, medial spurs longer than lateral spurs.

Fore wings cleft from 4/9, ochreous brown-grey. Markings dark brown: large discal spot and spot before base of cleft; first lobe with costal spots at 2/5 and 2/3, dorsal spot at 1/4 of wing length and spot at anal region; second lobe with indistinct dashes at apex and in anal region; diffusely scattered scales along costa and dorsum. Fringes dark grey, darker near anal regions and close to dark spots. Underside dark brown-grey, with pale dash at costa of first lobe, interrupted by small dark patch.

Hind wings and fringes brown-grey. Underside dark brown. Venous scales ferruginous, in two rows, costal row longer.

Male genitalia.— Left valve with large saccular spine, originating from middle of valve; in this spine a second small spine and at base small knob. Right valve with rod-like sacculus, with transverse spine at its base. Uncus moderate, slender. Tegumen bilobed. Juxta simple with two equally wide anellus arms. Vinculum arched with a spiny extension, almost as long as width of valve. Aedeagus slightly curved. No cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in September and October, at an altitude of 1700 meters. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago, Tungurahue.

Etymology.— The species is named after Huayna-Capac, the son of Inca leader Tupac-Yupanqui.

Hellinsia nephogenes (Meyrick, 1926)
(figs 73, 229, 342)

Pterophorus nephogenes Meyrick, 1926: 276.

Material.— Lectotype: 1 ♂, **Ecuador**, Galapagos, Charles Island, 0 m, 30.vii.(19)24 (St. George Expedn. C.L. Collenette), gent BM 18449 (BMNH) [examined]. Paralectotypes (without abdomen) 4 specimens: **Ecuador**, Galapagos Islands, Albemarte, 60 m, at light, 7.viii. (19)24 (St. George Expedn. C.L. Collenette) (BMNH) [examined].

Diagnosis.— Group: E01. Left valve with saccular process deeply curved basally in valve, long. Right valve without noticeable saccular process.

Description.— Male, female. Wingspan 18-19 mm. Head appressedly scaled, brown tipped, ochreous scales. Palpi pale brown, curved up, as long as eye-diameter. Antennae ringed grey-white and dark brown, shortly ciliated. Thorax, tegulae, metathorax and abdomen pale brown. Hind legs brown speckled grey, with two pair of spurs of unequal length. Around base of distal spur pair some pronounced scales.

Fore wings cleft from 3/4; brown. Markings brown: poorly developed discal spot, oblique spot before base of cleft and poorly developed spot at costa above base of cleft. Between oblique spot before base of cleft and base of cleft a small white spot. Fringes grey. Underside brown.

Hind wings and fringes brown-grey. Underside grey-brown. Venous scales black, in double row. Costal row longer than dorsal row.

Variation.— The markings are not equally developed in all specimens. However, the colour of the species varies from brown-yellow in the pale specimens to a brown-grey and mouse-grey in the darker ones.

Male genitalia.— Left valve with saccular process deeply curved basally in valve, long. Right valve without noticeable saccular process. Uncus moderate, slender. Tegumen bilobed. Juxta with anellus arms of unequal length. Vinculum arched. Aedeagus slightly curved; with cornutus of small grouped lines.

Female genitalia.— Ostium left lateral, slightly excavated. Antrum gradually funneling, with two small, longitudinal sclerites. Ductus bursae short. Bursa copulatrix vesicular, without signum. Ductus seminalis more than 2 × length of bursa copulatrix, vesicular. Apophyses anteriores laterally positioned, short and blunt. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in July-August and November-December, probably in two generations. Hostplant *Scalesia affinis* Hook.f. (Asteraceae) (Landry & Gielis, 1992).

Distribution.— **Ecuador**: Galapagos Archipelago: Albemarte, Charles Island, Isabela, Santa Cruz, Santiago.

Hellinsia benalcazari spec. nov.
(figs 74, 230)

Material. Holotype ♂: **Ecuador**, Napo, Puente Azuela, 1560 m, 11.iv.1985 (N. Venedictoff), gent CG 4365 (AME/MGCL).

Diagnosis.— Group: E02. Externally the species can not be distinguished from *H. pizarroi* spec. nov. *Hellinsia benalcazari* belongs to the group with large basal twist of left saccular process, while *H. pizarroi* belongs to the group with angulated left valvular saccular process, and right valve with two small saccular knobs.

Description.— As in *H. pizarroi*, with exception of brighter ochreous tarsal seg-

ments in fore and mid legs. Also costal dot on underside of fore wing seems less developed.

Male genitalia.— Valves asymmetrical. Left valve with a basally extended, semicircular saccular process that reaches the tip of the valve. Right valve with a saccular process in shape of an elongated knob, followed by a sclerotized ridge. Uncus curved. Tegumen bilobed. Juxta rather slender, with a pair of asymmetrical anellus arms. Vinculum narrow, centrally widened. Aedeagus curved, with brush-like cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in April, at an altitude of 1560 meters. Hostplant unknown.

Distribution.— **Ecuador:** Napo.

Etymology.— The species is named after Sebastian de Benalcazar, lieutenant of Francisco Pizarro, the conquistador of South America.

Hellinsia calais (Meyrick, 1930)
(figs 75, 231, 343)

Pterophorus calais Meyrick, 1930: 570.

Material.— Holotype ♂: **Brazil**, Pernambuco, Serra do Bernade, no date (Paravicini), gent BM 18679 (BMNH) [examined].

Diagnosis.— Group E02. The species is characterized by the dark mottled wing pattern with an ferruginous-orange erect scale tuft on wing just before base of cleft. It differs from *Oidaematophorus trachyploeus* by the shape of the male genitalia.

Description (Meyrick, 1930).— Male. Wingspan 21 mm. Head, thorax ochreous-whitish irrorated fuscous. Palpi short, slender, fuscous, tips of joints white. Abdomen fuscous. Middle tibiae with medial and apical scale thickenings. Forewings first lobe narrow, pointed, second moderate, termen very oblique, faintly sinuate; pale fuscous irregularly irrorated blackish; a scaletuft before cleft tinged ochreous; a whitish-ochreous subcostal streak from 1/4 to above cleft; first lobe wholly suffused whitish-ochreous except towards apex; base of cleft, and anterior half of upper part of second lobe whitish-ochreous; ochreous-whitish streaks on veins 2 and 3: cilia ochreous-whitish, basal half grey with slight whitish bars, on costa wholly grey. Hindwings grey; cilia grey becoming grey-whitish".

Male genitalia.— Left valve with large saccular process, with large curve towards base of valve. Right valve with small saccular knob. Uncus small and slender. Tegumen bilobed. Juxta stout, with one long and one short anellus arm. Vinculum narrow. Aedeagus almost straight, blunt tip. Coecum tapered, acute. No cornutus.

Female genitalia.— Ostium left lateral positioned, wide, with small spiculations along margin. Antrum funnel-shaped, longer than wide, with central row of spiculae. Ductus bursae as long as width of antrum. Bursa copulatrix small, vesicular. Ductus seminalis almost 3 × longer than bursa copulatrix, vesicular, with narrow extension tube. Apophyses anteriores absent. Apophyses posteriores almost 3 × papillae anales.

Ecology.— The moth flies in October (Costa Rica). Hostplant unknown.

Distribution.— **Brazil:** Pernambuco; **Costa Rica.**

Hellinsia longifrons (Walsingham, 1915)
 (figs 76, 232, 344)

Pterophorus longifrons Walsingham, 1915: 448.

Stenoptilia philocremma Meyrick, 1930: 570.

Material.— Holotype ♂: **Mexico**, Guerrero, Omilteme, vii (H.H. Smith) (BMNH) [examined].

Diagnosis.— Group: E02. The species is characterized by the extremely long palpi, four times eye diameter.

Description.— Head appressedly scaled; grey-brown speckled dark brown. Frons with conical protrusion, as long as eye diameter, dark brown. Palpi protruding, four times eye diameter, brown grey. Thorax, metathorax and tegulae ferruginous brown. On dorsum of abdomen some ferruginous-brown dark lines. Hind legs with two pair of spurs of equal length; at base of spur pairs some pronounced scales.

Fore wings cleft from 2/3, ferruginous- brown. Markings dark brown consisting of small oblique spot at base of cleft, indistinct costal spot just beyond base of cleft and small spot in apex of first lobe. Diffuse speckling of brown scales along costa of wing and more pronounced at dorsum of wing. Fringes brown-grey. Underside ferruginous brown.

Hind wings grey-brown. Fringes brown-grey. Underside grey-brown. Venous scales in double row; costal row longer than dorsal row; dark brown.

Male genitalia.— Left valve with very long saccular process, curved basally first and along cucullus. Right valve with two very discrete saccular ridges. Uncus short, straight. Tegumen stretched, bilobed. Juxta stretched, slender, with almost symmetrical anellus arms. Vinculum very narrow, arched. Aedeagus curved near tip. No cornutus.

Note: Within the populations it has been noticed that the saccular process in the left valve can be very short, and also straight forms are noticed. Additional variation in the base of the saccular process merits further study outside the scope of the present treatment.

Female genitalia.— Ostium left-centrally positioned, large and rounded. Antrum narrow, with a pair of longitudinal sclerites. Ductus bursae short. Bursa copulatrix small, vesicular, without signum. Ductus seminalis small, vesicular, a little longer than bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores three and a half times papillae anales.

Ecology.— The moth flies in July and September. Hostplant *Acourtia microcephala* (DC.) A. Gray (Comstock, 1937).

Distribution.— **Mexico**: Guerrero, Hidalgo; **Nearctic**: U.S.A.

Hellinsia papallacta spec. nov.
 (figs 77, 233)

Material.— Holotype ♂: **Ecuador**, Napo, Papallacta +10 km, 2750 m, 11.xii.1984 (N. Venedictoff), gent CG 4368 (AME/MGCL).

Diagnosis.— Group: E02. The species belongs to the *H. nodipes / calais* group, but differs from *H. nodipes* by the absence of a scale brush on fore wing before base of cleft.

Description.— Wingspan 23 mm. Head dark brown. Palpi slightly curved, dark brown, as long as eye-diameter, second segment thickened by pronounced scales, and third segment short and whitish. Antennae shortly ciliated, ringed dark brown and brown-white. Thorax and tegulae dark brown, ferruginous tinged anterad. Metathorax ferruginous. Abdomen dark brown.

Fore wings cleft from 2/3, ochreous. Markings dark brown and ferruginous. Ferruginous markings: at basal 1/3 of dorsum; terminal large discal spot; and large spot well before base of cleft. Dark brown markings: at basal 1/5 of costa, narrow, extending along costa till 1/3; oblique spot terminally margining ferruginous spot before base of cleft, extending into first lobe; longitudinal spot centrally in first lobe; terminally in entire second lobe. Fringes grey-brown. Underside dark brown, pale near termen of both lobes.

Hind wings and fringes brown-grey. Underside dark brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Valves asymmetrical, left valve wider. In left valve a long saccular process, which first circles through the basal half of valve and extends straight, well beyond tip of valve. Right valve with small saccular knob. Uncus curved and slender, as long as tegumen. Tegumen simple. Juxta rather blunt, with asymmetrical anellus arms. Vinculum narrow, arched. Aedeagus curved, with cornutus formed by numerous sclerotized ridges.

Female genitalia.— Unknown.

Ecology.— The moth flies in December, at an altitude of 2750 meters. Hostplant unknown.

Distribution.— **Ecuador:** Napo.

Etymology.— The species is named after the locality where it was collected, the town of Papallacta.

Hellinsia basalis (Möschler, 1890)

(figs 78, 234)

Oedaematophorus basalis Moeschler, 1890: 345.

Material.— Holotype (without abdomen): **Puerto Rico**, (18)87 (King) (MNHU) [examined].

Diagnosis.— Group: E03. Left valve with very long and slender saccular spine. Right valve with narrow rod, with small, angulated saccular hook. The species is characterized by the pale ochreous colour and the dark brown spots on fore wing at base of cleft and faint dash near base of fore wing.

Description.— Type-specimen. Wingspan 25 mm. Head pale ochreous (in bad state by moulding). Palpi slender, protruding as long as eye-diameter. Antennae pale ochreous, shortly ciliated. Thorax and tegulae pale ochreous. Legs missing.

Fore wings cleft from 3/5, pale ochreous. Markings dark brown: spot at base of cleft; dense dorso-basal scales to 1/3 of wing length and three vague spots at outer margin of second lobe. Fringes grey-yellow. Underside pale brown-ochreous.

Hind wings pale brown-ochreous. Fringes pale grey-brown. Underside pale brown-ochreous. Venous scales orange-ferruginous, in double row. Costal row longer than dorsal row.

Male genitalia.— Left valve with very long and slender saccular spine; spine longer than valve length. Right valve with narrow rod, with small, angulated saccular hook. Uncus as long as tegumen, mildly curved. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum narrow, curved. Aedeagus curved, without cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in April and May. Hostplant unknown.

Distribution.— **Puerto Rico.**

Hellinsia barbatus (Gielis, 1996)
(figs 79, 235, 345)

Oidaematophorus barbatus Gielis, 1996: 97.

Material.— Holotype ♂: **Colombia**, Sierra del Libano, 1830 m, v.1899 (H.H. Smith), gent BM 18143 (BMNH) [examined]. Paratypes 2 ♂♂: same locality and data, gent CG 5083, 5091 (BMNH) [examined].

Diagnosis.— Group: E04. Left valve with saccular process longer than length of valve, and with large basal twist to base of valve. Right valve with small hook as saccular process. The species is characterized by the brush of scales at tibiae of fore legs.

Description.— Male, female. Wingspan 22 mm. Head appressedly scaled, ochreous. Collar and frons pale brown. Palpi as long as eye-diameter, pale brown with lateral dark brown scales, protruding. Antennae faintly ringed pale and dark brown, shortly ciliated. At basal antenna segments poorly developed brush of hairs. Thorax and tegulae ochreous. Metathorax darker brown. Anterior abdominal segments ochreous-brown. Fore legs pale brown, middle of tibia with pronounced brush of dark brown scales, and smaller brush at end of tibia. Mid leg as fore leg. Hind leg with small brushes of scales at base of spur pairs. Spur pairs of unequal length.

Fore wing cleft from 2/3, ochreous. Markings dark brown, consisting of oblique spot before base of cleft; apical spots on both lobes; small spot at anal region of first lobe and spot in middle of termen of second lobe. Fore wing has dark ochreous scaling in costal half and small ochreous spot at 1/3 of costa of first lobe. Fringes ochreous-brown, ferruginous-brown at dark spots on wing dark brown and in cleft. Underside grey-brown, darkened near apex.

Hind wings and fringes grey-brown. Underside grey-brown. Venous scales black, in double row; costal row longer than dorsal row.

Male genitalia.— Left valve with saccular process longer than length of valve, and with large basal twist to base of valve. Right valve with small hook as saccular process. Uncus small, slender. Tegumen bilobed. Juxta rather long and stout, with a pair of asymmetrical anellus arms. Vinculum arched. Aedeagus straight, without cornutus.

Female genitalia.— Ostium left lateral positioned, excavated. Antrum gradually funneling, 2 × longer than wide. Ductus bursae very short. Bursa copulatrix vesicular, rather short, without signum. Ductus seminalis very long, almost four times bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores 1½ × papillae anales.

Ecology.— The moth flies in May. Hostplant unknown.

Distribution.— **Colombia**: Sierra del Libano; **Costa Rica**: Volcan Irazu.

Hellinsia cervicalis (Meyrick, 1932)
(figs 80, 236)

Pterophorus cervicalis Meyrick, 1932: 251.

Material.— Holotype ♂: **Bolivia**, Rio Songo, 750 m, no date, gent CG 6324 (NMW) [examined].

Diagnosis.— Group: E05. Left valve with a long saccular process reaching beyond tip of valve, basally curved to valve base and up along cucullus. Right valve with long and slender rod-like saccular process with curved tip. The species is characterized by the dark brown frons and collar, and the brown wing colour.

Description.— Male. Wingspan 17 mm. Head appressedly scaled, pale brown. Collar and frons dark brown. Palpi not present in examined specimen. Antennae faintly ringed dark brown and brown, shortly ciliated. Thorax pale brown. Tegulae, metathorax and abdomen ochreous brown. Mid legs and hind legs ochreous-brown with darker brown scale-brushes at base of spur pairs; first spur pair of hind leg of unequal length.

Fore wings cleft from 2/3, ochreous-brown. Markings brown; small discal spot and small spot above base of cleft; gradual darkening in terminal half of lobes; small spots at costa and dorsum of first lobe near apex. Fringes grey-brown, at base continuous terminal brown fringe line, which is interrupted ochreous at the terminal spot of first lobe. Underside dark brown.

Hind wings dark brown. Fringes greyish-brown. Underside dark brown. Venous scales black-brown, in double row; costal row longer than dorsal row.

Male genitalia.— Left valve with a long saccular process reaching beyond tip of valve, basally curved to valve base and up along cucullus. Right valve with long and slender rod-like saccular process with curved tip. Uncus mildly curved, slender. Tegumen bilobed. Juxta rather slender, with two asymmetrical anellus arms. Vinculum arched, rather broad. Aedeagus straight, apex acute, without cornutus. Coecum narrow.

Female genitalia.— Unknown.

Ecology.— The flight period is unknown. Hostplant unknown.

Distribution.— **Bolivia**: Rio Songo.

Hellinsia ochricostatus (Zeller, 1877)
(figs 81, 237)

Leioptilus ochricostatus Zeller, 1877: 484.

Material.— Holotype (without abdomen): **Colombia**, Bogota, 19.iii (v. Nolcken) (BMNH) [examined].

Diagnosis.— Group: E05. Left valve with well-developed saccular process, with curve through basal part of valve and as long as valve. Right valve with narrow saccular rod. The species is characterized by ochreous costa of entire fore wing.

Description.— Wingspan 27 mm. Head brown, between base of antennae white. Palpi shining white, mixed with brownish scales especially in third segment, protruding, $1\frac{1}{2} \times$ eye-diameter. Antennae brownish-white, shortly ciliated. Thorax and tegulae

shining white, with a narrow brown line which connects the brown costal line in the fore wings. Abdomen shining white, dorsum centrally with a faint pale brown line. Legs shining white; fore legs with lateral dark brown line; hind leg with distinct white fringes at proximal half of tibia.

Fore wings cleft from 5/8, shining white. Markings brown: costal streak from base to apex of first lobe; small longitudinal spot in basal half, and scattered scales subapical in second lobe. Fringes brown along costa, silvery white in cleft and along dorsum. Underside basally brown, before base of cleft gradually turning white; brown along costa of first lobe, and brown spots at apex and mid termen of second lobe.

Hind wings shining white. Fringes at costa of first lobe dark grey, elsewhere white. Underside in first and second lobe basally brown, terminally white; third lobe shining white. Venous scales in single row, dark grey-brown.

Male genitalia.— Valvae asymmetrical, left valve slightly wider. Both valves with small lobe projecting from apex. Left valve with well-developed saccular process, with curve through basal part of valve and as long as valve. Right valve with narrow saccular rod. Uncus straight, as long as tegumen. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum almost straight, rather narrow. Aedeagus straight, with oblique tip. No cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in October, at an altitude of 3250 meters. Hostplant unknown.

Distribution.— **Colombia:** Bogota; **Ecuador:** Azuay.

Hellinsia nivalis (Meyrick, 1908)
(figs 82, 238, 346)

Pterophorus nivalis Meyrick, 1908: 499.

Material.— Lectotype ♂ (designated here): **Jamaica**, New Castle, (19)07 (R.), gent BM 18184 (BMNH) [examined]. Paralectotype ♀ (designated here): **Jamaica**, New Castle, (19)07 (R.), gent CG 5051 (BMNH) [examined].

Diagnosis.— Group: F02. Left valve with mildly curved saccular process of just over half the valve length, with delicately shaped knob. Right valve with small saccular knob. The species is characterized in the fore wing by white "half moon" around base of cleft, and white spots at center of dorsum of first lobe and at termen of second lobe.

Description.— Male, female. Wingspan 23 mm. Head appressedly scaled, pale ferruginous-brown, with some erect scales at collar. Frons smooth. Palpi pale ferruginous-brown, protruding, as long as eye-diameter. Antennae with a minimal indication of being ringed, white-grey and pale brown, shortly ciliated. Thorax dark brown. Tegulae ochreous-brown. Metathorax ochreous. Abdomen dark brown. Hind legs ochreous-brown. Spur pairs of equal length, ochreous-white with pale brown top.

Fore wings cleft from 2/3, colour ferruginous-brown. Markings in shape crescent-shaped spot at base of cleft, white spot at costa just beyond base of cleft and at center of dorsum of first lobe and white at termen of second lobe. Diffuse white scaling in basal half of wing. Fringes ferruginous-grey. Underside ochreous-brown, with a darker spot at base of cleft and at costa beyond base of cleft.

Hind wings grey. Fringes ferruginous-grey. Underside pale brown-grey. Venous scales in double row, black. Costal row longer than dorsal row.

Male genitalia.— Left valve with mildly curved saccular process of just over half the valve length, with delicately shaped knob at tip. Right valve with small saccular knob. Uncus short, straight, stout. Tegumen bilobed. Juxta short and stout, with two slender, asymmetrical anellus arms. Vinculum arched, slender. Aedeagus straight, with acute tip. No cornutus.

Female genitalia.— Ostium at mid-line, circular. Antrum 3 × longer than wide. Ductus bursae as long as antrum. Bursa copulatrix long, vesicular. Signa consisting of two crescents, both surrounded by a small field with spiculae. Ductus seminalis long, slender, shorter than bursa copulatrix. Lamina ante-vaginalis arched, with narrow sclerotized rim. Apophyses anteriores absent. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in May. Hostplant unknown.

Distribution.— **Costa Rica:** Cartago; **Jamaica.**

Hellinsia shyri spec. nov.

(figs 83, 239)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago, Macas, Proaño - Inapula, CREA- Domono, 1100 m, 20-23.iv.1998 (V. Pelz), gent CG 4509 (CG). Paratype 1 ♂: **Ecuador**, Morona-Santiago, Macas, 1000 m, 11-23.xii.1997 (V. Pelz) (CG).

Diagnosis.— Group: F03. Left valve with strongly, basally curved saccular process, with knobbed tip. Right valve with saccular thorn, less than half the width of valve. The species is characterized by the dark fore wings.

Description.— Male. Wingspan 19-21 mm. Head and collar dark brown, collar with some long erect and bifid scales, head appressedly scaled. Palpi with some erect scales, protruding, dark brown. Antennae first segment very wide, dark brown; other segments ringed pale and dark brown. Thorax and tegulae dark brown; metathorax pale brown. Fore and mid legs pale brown. Hind legs pale brown, darker at base of spurs; with two pairs of spurs, proximal pair of spurs longer than distal pair and lateral spurs shorter than medial spurs.

Fore wings cleft from 2/3, grey-brown. On wings dense dark brown, diffuse scaling; spots vague, dorso-central at cell, discal spot, oblique spot at base of cleft and central, longitudinal streak in first lobe. Two enlarged, brown-ferruginous scale groups at dorso-central area of cell and at base of cleft. Fringes dark brown-grey. Underside dark brown, with an ochreous costal streak.

Hind wings and fringes brown-grey. Underside dark brown. Venous scales black, in two rows, costal row longer.

Male genitalia.— Left valve with an arched saccular process, which semicircularly arches through basal part of valve, and has length of less than half valve, tip with small knob. Right valve with oblique spine, less than half valve width. Uncus short, and slender. Tegumen wide, simple. Anellus simple, with arms of different length. Vinculum arched, narrow. Aedeagus minimally curved, with blunt tip. Cornutus in shape of narrow sclerotized ridges.

Female genitalia.— Unknown.

Ecology.— The moth flies in April and December, at an altitude of 1000 m. Host-plant unknown.

Distribution.— **Ecuador:** Morona-Santiago.

Etymology.— The species is named after Shyri, a leader of the Caras people.

Hellinsia delospilus (Meyrick, 1921)
(figs 84, 240, 347)

Pterophorus delospilus Meyrick, 1921: 421.

Material.— Lectotype ♂ (designated here): **Peru**, Jurimaguas, Iquitos, iii-v (Parish), gent BM 18715 (BMNH). Paralectotypes 2 ♂♂ (designated here): same locality and date (BMNH) [examined].

Diagnosis.— Group: G07. Left valve with short, blunt club-like saccular process, with two small side processes. Right valve with short, blunt club-like saccular process and a single baso-lateral side process.

Description.— Male, female. Wingspan 16-19 mm. Head brownish-ochreous, forehead white between antennae. Palpi pale ochreous, protruding, just over eye-diameter. Antennae longitudinally white and pale brown, shortly ciliated. Thorax and tegulae pale brown-ochreous. Abdomen ochreous-white, with three dorsal pale brown lines. Hind legs ochreous-white, with brown lateral line; spur pairs of unequal length.

Fore wings cleft from 3/5, pale brown-ochreous. Spots brown: at base of cleft, anal region of first lobe, in second lobe at apex, mid-terminen and anal region, and scattered scales in center of first lobe and along dorsum of wing. Fringes pale white-ochreous. Underside pale brown, with darker spots as above.

Hind wings and fringes pale ochreous-grey. Underside pale brown. Venous scales ferruginous, in double row, costal row longer.

Male genitalia.— Left valve with short, blunt club-like saccular process, with two small side processes. Right valve with short, blunt club-like saccular process and a single baso-lateral side process. Uncus moderate, curved. Tegumen broad-shouldered, bilobed. Juxta wide and rather short, with two small, slender and asymmetrical anellus arms. Vinculum arched. Aedeagus mildly curved. Cornutus in shape of delicate sclerotized ridges.

Female genitalia.— Ostium left lateral from center of segment, oblique. Antrum straight, 2 × longer than wide, with small sclerites. Ductus bursa as long as antrum, with longitudinal sclerotized ridges, progressing into ductus seminalis. Bursa copulatrix round, vesicular, with small spiculae. Ductus seminalis 3 × that of bursa copulatrix, slender. Lamina ante-vaginalis well-developed along termen of 7th sternite. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies from March to May. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago; **Peru.**

Hellinsia ignifugax (Walsingham, 1915)
(figs 85A, 85B, 241, 348)

Pterophorus ignifugax Walsingham, 1915: 444.

Material.— Holotype ♀: **Guatemala**, Totonicapam, 2600-3200 m, viii.1880 (Chapman), gent BM 18151 (BMNH). Paratype ♂: **Guatemala**, Totonicapam, 2600-3200 m, viii.1880 (Chapman), gent CG 5086 (BMNH) [examined].

Diagnosis.— Group: H03. Left valve with saccular process with an acutely narrowing tip. Right valve with saccular curved hook. The species is characterized by pale brown discal and oblique spots, on fore wing, before base of cleft.

Description.— Male, female. Wingspan 23 mm. Head appressedly scaled, creamy. Collar ferruginous, with numerous erect scales. Frons pale ferruginous. Palpi as long as eye-diameter, protruding; second segment with some drooping scales; third segment slender, short. Antennae pale ferruginous-creamy, shortly ciliated. Thorax and tegulae creamy with ferruginous gloss. Metathorax pale ferruginous. Fore legs, mid legs and hind legs pale brown-grey; mid legs with scale brush around base of spur pair; hind legs with two pairs of spurs, both of unequal length.

Fore wings cleft from 3/4, pale ochreous-creamy. Markings pale brown, consisting of small discal spot, oblique spot just before base of cleft and extending to costa where it progresses as small longitudinal costal spot and small spot at anal region of first lobe. Fringes pale ochreous grey. Underside brown-grey.

Hind wings pale ochreous-grey. Fringes pale ochreous-grey. Underside brown-grey. Venous scales black, in double row. Costal row longer than dorsal row.

Male genitalia.— Left valve with saccular process with an acutely narrowing tip. Right valve with saccular curved hook. Uncus moderate, curved, slender. Tegumen bilobed. Juxta stout, with short and blunt asymmetrical anellus arms. Vinculum narrow, arched. Aedeagus mildly curved, with acute tip. Cornuti in shape of patch of sclerotized ridges.

Female genitalia.— Ostium centrally positioned, minimally excavated. Antrum funnel-shaped, as long as wide, with two small, longitudinal sclerites. Ductus bursae as long as antrum, narrow. Bursa copulatrix vesicular, without signum. Ductus seminalis almost 2 × longer than bursa copulatrix, slender and vesicular. Lamina ante-vaginalis narrow, arched. Apophyses anteriores absent. Apophyses posteriores 2 × length of papillae anales.

Ecology.— The moths fly in May, August and December. Hostplant unknown.

Distribution.— **Costa Rica**: Puntarenas; **Guatemala**: Totonicapam; **Mexico**: Chihuahua; **Nicaragua**: Matagalpa.

Hellinsia glaphyrottes (Meyrick, 1908)
(figs 86, 242, 349)

Pterophorus glaphyrottes Meyrick, 1908: 497.

Material.— Lectotype ♂: **Brazil**, So Paulo, (19)07 (R.), gent BM 18445 (BMNH) [examined]. Paralectotypes 1 ♀, 1 without abdomen: same locality and data, (BMNH) [examined].

Diagnosis.— Group: I01. Left valve with saccular spine which has curved extension. The species is characterized by the uniform straw-brown colour.

Description.— Male, female. Wingspan 17-22 mm. Head appressedly scaled, collar with erect scales. Collar and face pale brown, between bases of antennae straw-brown.

Palpi slender, as long as eye-diameter, protruding, straw-brown. Third segment very short. Antennae straw-brown, shortly ciliated. Thorax, tegulae, metathorax and abdomen straw-yellow. Hind legs yellow-white with proximal pair of spurs of unequal length and distal pair of spurs of equal length.

Fore wings cleft from 3/5, straw-brown, with some isolated scales in first lobe, second lobe and discally. Fringes grey-brown. Underside pale brown.

Hind wings grey-brown. Fringes grey-brown. Underside grey-brown. Venous scales in two rows, Costal row ferruginous; dorsal row dark brown. Costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve lanceolate with saccular spine in shape of small plate, progressing into laterally curved process. Right valve elongate, with hair brush mid valvular at sacculus. Uncus slender. Tegumen bilobed. Juxta pronounced with two anellus arms of equal length. Vinculum arched. Aedeagus tube-like, slightly curved. No cornutus.

Female genitalia.— Ostium centrally positioned. Antrum cup-like, as long as wide. Ductus bursae short, as long as antrum, and divided into elongated, vesicular bursa copulatrix. Ductus seminalis slender, almost 2 × bursa copulatrix, distal part vesicular. No signum. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moths were collected in January to May, and October to December. Hostplant *Wulfia barcata* (L.) Kuntze.

Distribution.— **Argentina:** Catamarca, Cordoba, Jujuy, Salta, Tucuman; **Brazil:** Distrito Federal, Goias, Matto Grosso, Minas Gerais, Santa Catarina, São Paulo; **Ecuador:** Morona-Santiago; **Paraguay:** Paraguani; **Peru:** Huanaco.

Hellinsia stadias (Meyrick, 1908)
(figs 87, 243, 350)

Pterophorus stadias Meyrick, 1908: 498.

Material.— Lectotype (designated here) 1 ♂: **Brazil**, Petropolis, (19)07 (R.), gent BM 18711 (BMNH). Paralectotype (designated here) 1 ♀: **Brazil**, Petropolis, (19)07 (R.), gent CG 5074 (BMNH) [examined].

Diagnosis.— Group: I04. Left valve with saccular process, which has a basal structure followed by a curved spine. Right valve with large saccular hook, larger than half valve width. The species is characterized by the combination of ochreous colour with pale brown dashes at costal and dorso-basal region and brown spots before base of cleft and along terminal margins of fore wing.

Description.— Male, female. Wingspan 22 mm. Head appressedly scaled, ochreous. At collar brown, with numerous erect scales. Face pale brown. Palpi pale brown, slender, protruding, 1½ × eye-diameter. Antennae with ochreous basal segment with longitudinal brown medial line; grey-brown, shortly ciliated. Thorax, metathorax and abdomen pale ochreous-brown. Hind legs pale ochreous-brown, with two pairs of spurs of unequal length.

Fore wings cleft from 2/3, ochreous straw-yellow with scattered brown scales. At mid costa and dorso-basal faint pale brown dash. Before base of cleft, at costa of first lobe at 1/3, 1/2 and 2/3 small brown spots. Near apex and anal region of both lobes and in second lobe mid-termally and dorsally near anal region small spots. Fringes

grey-brown, both lobes brownish at apex. Underside basally brown-grey, gradually turning pale brown toward apex.

Hind wings grey. Fringes brown-grey. Underside pale brown. Venous scales black-brown, in double row. Costal row longer than dorsal row, and extending well into second lobe.

Male genitalia.— Left valve with saccular process, which has a basal structure followed by a curved spine. Right valve with large saccular hook, larger than half valve width. Uncus curved, moderate, slender. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum well-developed, slightly arched. Aedeagus arched, with acute tip. Cornuti consisting of cluster of sclerotized ridges.

Female genitalia.— Ostium centrally positioned, excavated. Antrum funnel-shaped, wth three small, longitudinal sclerites. Ductus bursae short. Bursa copulatrix with narrow, tubular distal half with numerous longitudinal sclerotized ridges, and a proximal vesicular half, with clusters of spiculae. Ductus seminalis $1\frac{1}{2}$ × bursa copulatrix, slender. Lamina ante-vaginalis narrow, arched, with central small widening. Apophyses anteriores absent. Apophyses posteriores $1\frac{1}{2}$ × the long and slender papillae anales.

Ecology.— The moth flies in October. Hostplant unknown.

Distribution.— **Brazil:** Minas Gerais, Rio de Janeiro.

Hellinsia mallecoicus (Gielis, 1991)

(figs 88, 244, 351)

Oidaematophorus mallecoicus Gielis, 1991: 86.

Material.— Holotype ♂: **Chile**, Linares, Puente Malcho nr. Longavi River, 600 m, 13-15.i.1979 (Davis & Akerbergs), gent CG 6066 (USNM). Paratypes: 1 ♂, 1 ♀, **Chile**, Nuble, nr. coastal stream 17.5 km S. Curanipe, 50 m, 25.i.1979 (Davis & Akerbergs), gent CG 6069 (♂), 6067 (♀) (USNM); 1 ♀, **Chile**, Nuble, Piedra de la Iglesia, 8 km. N. Cobquicura, 5 m, 24.i.1979 (Davis & Akerbergs) (USNM); 1 ♂, **Chile**, Santiago, nr. Pta. Yeso, ca 70 km. SE. Santiago, 1250 m, 27-28.x.1981 (Davis) (USNM); 1 ♀: **Chile**, Malleco, Angol, Los Alpes, 650 m, 17.iii.1979 (Mis. Cient. Danesa, Sta 60), gent CG 4167 (ZMUC).

Diagnosis.— Group: I08. Left valve with saccular process, basally blunt and short, with curved short extension. Right valve with saccular process a basally blunt knob, followed by slightly curved rod.

Description.— Male, female. Wingspan 19-21 mm. Head appressedly scaled; collar and face ferruginous, between bases of antennae grey-white. Palpi $1\frac{1}{2}$ × eye-diameter, protruding, white. Second segment laterally with some brown scales. Second and third segments of equal length. Antenna basal segment pronounced white; grey-white, shortly ciliated. Thorax, tegulae and metathorax brown-grey. Hind legs brownish-grey, with two pairs of unequal spurs. Medial spurs longer than lateral spurs.

Fore wings cleft from 2/3, brown-grey, speckled with isolated brown scales. Indistinct oblique brown spot before base of cleft. Termen in both lobes with faint ferruginous tinge. At costa of first lobe above base of cleft faint spot and in middle well-defined spot; near apex some dark scales and at anal angle spot. Second lobe faint spots at apex, in middle of termen and at anal angle. Fringes pale grey, darkened around apex of both lobes. Underside grey-brown.

Hind wings grey-brown. Fringes grey-white. Underside grey-brown. Venous scales in double row, black. Costal row longer.

Male genitalia.— Sacculus in left valve has spine of 1/4 of valve length, originating at 1/4. Base of spine wide; gradually narrowing toward tip; centrally hooked and before angle lateral vesicular widening. Right valve has saccular processes as blunt thorn at 1/4 and curved rod at 1/3. Uncus slender, moderate. Tegumen bilobate. Juxta pronounced, anellus arms asymmetrical. Vinculum arched. Aedeagus almost tube-like, with very small cornuti in vesica.

Female genitalia.— Ostium centrally positioned. Antrum as a small ridge in the folded lamina ante-vaginalis. Ductus bursae slender, 1½ × longer than bursa copulatrix diameter. Ductus seminalis originates above bursa. Bursa copulatrix vesicular, covered with minute spiculae. Apophyses anteriores pronounced and stout. Apophyses posteriores as long as papillae anales.

Ecology.— The moth flies in January, March and October. Hostplant unknown.

Distribution.— **Chile:** Malleco, Nuble, O'Higgins, Santiago, Valparaiso.

Hellinsia paraglochinias Gielis, 1996
(figs 89, 245, 352)

Hellinsia paraglochinias Gielis, 1996: 100.

Material.— Holotype ♂: **Peru**, Cuzco, Pillahuata, 2600 m, 14-18.viii.1982 (M. Matthews & M. Packer), gent CG 5039 (BMNH). Paratype 1 ♂: **Ecuador**, Napo, Via Sta Barbara- La Bonita km 23, 2400 m, 7-9.iv.1986 (S. McKammy), gent CG 3512 (UC).

Diagnosis.— Group: I08. Left valve with pronounced saccular process, basally blunt apex with curved spine. Right valve with two small discrete saccular processes.

Description.— Male, female. Wingspan 26 mm. Head appressedly scaled, frons white, vertex near collar brown. At collar some erect scales. Palpi protruding, brown, 1½ × eye-diameter. Antennae shortly ciliated, grey-brown. Thorax and tegulae creamy-grey. Mesothorax mixed ferruginous and white. Hind legs pale brown, brown ringed at base of spur pairs. Spur pairs of unequal length.

Fore wings cleft from 3/5, grey-white. Markings dark brown, consisting of dorsal spots at 1/3, 1/2 and 3/4; anal spots at both lobes; indistinct discal spot and oblique spot before base of cleft; dorsal spots in first lobe at 1/3 and 2/3; costal spot above base of cleft and small spot at costa in first lobe at 4/5. Along costa faint ochreous scaling. Fringes brown and white as pattern on wing. Underside dark brown, with blackish spots at anal angle and apex of both lobes, at costa above base of cleft and at costa of first lobe at 4/5.

Hind wings grey, top of all lobes with small black dot. Fringes grey, basally brownish tinged. Underside dark brown, with small apical dots as above and a small costal spot at first lobe at 4/5. Venous scales ferruginous, in double row. Dorsal row longer.

Male genitalia.— Left valve with pronounced saccular process, basal part blunt, distal part with curved spine. Right valve with two small discrete saccular processes. Uncus moderately long, slender. Tegumen slender, simple. Juxta short, blunt with anellus arms rather short, slightly asymmetrical. Vinculum arched. Aedeagus slender, narrow. No cornuti.

Female genitalia.— Ostium centrally positioned, wide. Antrum gradually funneling, 2 × longer than wide, with a pair of longitudinal, slender sclerites. Ductus bursae very short. Bursa copulatrix rather slender, vesicular, without signum. Ductus seminalis short, slender. Lamina ante-vaginalis narrow, arched. Apophyses anteriores short, blunt. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in April, August and December. Hostplant unknown.

Distribution.— **Peru:** Cuzco; **Ecuador:** Napo, Pichincha.

Hellinsia scribarius (Meyrick, 1926)
(figs 90, 246)

Pterophorus scribarius Meyrick, 1926: 300.

Material.— Holotype ♂: **Colombia**, Mt. Tolima, 3810 m, xii, gent BM 18709 (BMNH).

Diagnosis.— Group: I08. The species is characterized by the large spot on the second lobe of the fore wing, and the curved and angulated shape of the sacculus in the left valve of the male genitalia.

Description.— Wingspan 20 mm. Head grey-white, between base of antennae and face brown. Collar brown-ochreous. Palpi brown, protruding, as long as eye-diameter. Thorax pale ochreous-brown. Tegulae pale ochreous. Legs pale ochreous; hind legs with two pairs of spurs, medial spur longer than lateral.

Fore wings cleft from 2/3, colour pale brown-ochreous. Markings brown: some obliquely arranged scales just before base of cleft; costal spot above base of cleft, and at 2/3 of first lobe; longitudinal streak in distal half of first lobe; large spot at 1/3, and spot at anal angle of second lobe; apices of both lobes dark. Fringes pale ochreous, in cleft whitish. Underside densely scaled brown.

Hind wings and fringes pale brown-ochreous. Underside scaled brown. Venous scales ferruginous in single row.

Male genitalia.— Valves asymmetrical. Left valve wider than right one. Saccular process basally joining three sclerotized parts, progressing into wider section, curved and narrowing, angled near tip and progressively narrowing. Right valve with longitudinal sclerotized saccular ridge, with small central interruption. Uncus rather short, and slender. Tegumen simple. Juxta with two nearly parallel arms. Vinculum small and arched. Aedeagus straight. No cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in December, at altitudes from 2200-3840 m. Hostplant unknown.

Distribution.— **Colombia:** Mt. Tolima; **Ecuador:** Napo.

Hellinsia cristobalis (B. Landry & Gielis, 1992)
(figs 91, 247, 353)

Oidaematophorus cristobalis B. Landry & Gielis, 1992: 23.

Material.— Holotype ♀: **Ecuador**, Galapagos Islands, San Cristóbal, 4 km SE Pto Baquarizo, 12.ii.1989 (B. Landry) (CNC). Paratypes: **Galapagos Islands**, San Cristóbal: 1 ♂, 4 km SE Puerto Baquarizo,

12.ii.1989 (B. Landry); 2 ♀♀, 1 km S El Progreso, 14.ii.1989 (B. Landry); 1 ♀, 4 km SE Puerto Baquarizo, 18.ii.1989 (B. Landry); 1 ♂, 3 ♀♀, 4 km SE Puerto Baquarizo, 20.ii.1989 (B. Landry), gent BL ♂ 214; 4 ♀♀, base of Cerro Pelado, 22.ii.1989 (B. Landry), gent BL 228 (CNC, CG, MECN). **Galapagos Islands**, Isabela: 1 ♂, Sierra Negra, Corazon Verde, xi-xii.1974 (T.J. de Vries), gent BL 301 (BMNH); 1 ♀, Sierra Negra, Alemania, xi.1974 (T.J. de Vries) (BMNH).

Diagnosis.— Group: J02. Left valve with saccular process in shape of trapezoid-like plate with spiny extension. Right valve with saccular margin forming sclerotized ridge.

Description.— Wingspan 13-16 mm. Head with dark-brown fronto-clypeus and occiput, paler brown mixed with white scales on vertex with pure white row of scales between antennae: occipital fringe scales bifid, dark brown. Labial palpi erect, as long as eye diameter, with mixed white and dark brown scales. Antenna with longitudinal dark brown and white stripes on basal 1/3; dark brown on apical 2/3. Thorax with basally beige, apically greyish-brown scales except laterally at apex, white. Abdomen dorsally with bicolored scales, basally white, apically brown, as well as scattered and patches of pure white scales; sublaterally with two large stripes of mostly dark brown scales, with a mixture of dark brown and white scales between stripes. Fore and mid leg coxa to tarsomere I with longitudinal dark brown and white stripes; tibia with small dark brown tufts at fore leg epiphysis and medially and apically on midleg.

Fore wing cleft from 2/3, brown, irrorated with pure white scales. Markings dark brown: discal spot; oblique spot just before base of cleft; first lobe four spots on costal margin and apex, and three on termen of second lobe. Fringes mostly brown; white small patch on first lobe terminally, subapically and on apical half of termen of second lobe. Underside dark brown. In tip of first lobe, and to a lesser extent in second, with mixed white scales.

Hind wing and fringes greyish-brown. Underside dark grey-brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Left valve with saccular process in shape of trapezoid-like plate with spiny extension. Right valve with simple, sclerotized ridge-like saccular margin. Uncus moderate, slender. Tegumen long, simple. Juxta rather short; arms asymmetrical; left arm with additional basal extension. Vinculum narrow. Aedeagus minimally curved, rather blunt tip. No cornutus.

Female genitalia.— Ostium left laterally positioned, excavated. Antrum wider than long, with lateral sclerotized margin. Ductus bursae short. Bursa copulatrix long, vesicular, with a pair of grouped spiculae forming signum. Ductus seminalis 2 × longer than bursa copulatrix, vesicular. Lamina ante-vaginalis arched, with narrow sclerotized rim. Apophyses anteriores absent. Apophyses posteriores 1½ × papillae anales.

Ecology.— The moth flies in February, November, and possibly December. Host-plant unknown.

Distribution.— **Ecuador:** Galapagos Islands, San Cristóbal, Isabela.

Hellinsia fissuripuncta Gielis, 1999
(figs 92, 248, 354)

Hellinsia fissuripuncta Gielis, 1999: 307.

Material.— Holotype ♂: **Costa Rica**, Guanacaste, 9 km S Sta Cecilia, Est Pitilla, 700 m, iii.1994 (C. Moraga), gent CG 3869 (Inbio). Paratypes: 1 ♂, same locality, iv.1994, gent CG 3870 (CG); 1 ♂, **Costa Rica**,

Cartagena, PN Tapanti, 1150 m, iii.1994 (G. Mora), gent CG 3886 (Inbio); 1 ♀, **Costa Rica**, Cartagena, PN Tapanti, Quebrada Segunda, 1250 m, i.1993 (G. Mora), gent CG 3871 (Inbio).

Diagnosis.—Group: J02. Left valve with regular trapezoid plate with single spiny extension. Right valve with small saccular ridge. The species is characterized by the well-developed spot at the base of cleft.

Description.—Male, female. Wingspan 14-17 mm. Head appressedly scaled, creamy white. Collar pale grey-brown, with long erect scales. Frons and between antennae pale grey-brown. Palpi slightly curved up, slender, creamy white, $1\frac{1}{2}$ × eye-diameter. Antennae creamy white, basal segment with median brush of white and brownish scales, shortly ciliated. Thorax, tegulae and metathorax creamy white. Fore, mid and hind legs with proximal segments creamy white; distal segment dark brown with narrow lateral creamy line; hind leg around base of spurs with dark brown scale brushes, spur pairs of unequal length, median longer than lateral spur and proximal shorter than distal pair.

Fore wing cleft from 3/5, creamy white. Diffuse ochreous speckling mainly on basal half, in the first lobe and along costa. Dark spots at base of cleft, at costa of first lobe at 1/3, 1/2 and at 3/4, at apex and anal angle of both lobes and midterminal at second lobe; some isolated scales at dorsum and in costal area. Fringes creamy white. Underside ochreous, with dark brown scales. The dark brown scales intense from the wingbase, decreasing towards base of cleft. Dark spots as above.

Hind wings grey-white. Fringes creamy white. Underside ochreous with dark brown scales, less intense than in fore wing, distally decreasing in numbers. Venous scales in double row, black, costal row extending into second lobe.

Male genitalia.—Valves asymmetrical, left slightly wider than right, both with slightly acute top. In left valve saccular process at 1/3, consisting of asymmetrical pentangular plate with distal, medially directed spine of half valve width. Right valve with a poorly developed saccular ridge at 1/3 of valve. Uncus as long as tegumen, slender. Tegumen slender, 1/4 of valve length. Juxta short, blunt, with short, asymmetrical anellus arms. Vinculum arched, narrow. Aedeagus slightly curved, acute tip. No cornutus.

Female genitalia.—Ostium centrally positioned, flattened. Antrum densely sclerotized, gradually narrowing, with two longitudinal sclerotized processes. Ductus bursae short, poorly sclerotized. Bursa copulatrix vesicular, poorly sclerotized. Ductus seminalis vesicular. No signum. Lamina ante- and post-vaginalis poorly developed. Apophyses anteriores absent. Apophyses posteriores 2-3 × papillae anales.

Ecology.—The moth flies in January, March and April. Hostplant unknown.

Distribution.—**Costa Rica:** Cartagena, Guanacaste.

Hellinsia grandaevus (Meyrick, 1931)
(figs 93, 249, 355)

Pterophorus grandaevus Meyrick, 1931: 380.

Material.—Holotype ♂: **Chile**, Llanquihue, Peulla, 12-13.xii.1926 (Edwards), gent BM 18446 (BMNH) [examined].

Diagnosis.—Group: J02. Left valve with saccular plate, with single, short spine. Right valve with two small saccular thickenings. The species is characterized by the pale field at the dorsum of the first forewing lobe.

Description.— Male, female. Wingspan 17-22 mm. Head appressedly scaled. Collar and face olive-brown. Between base of antennae white. Palpi as long as eye-diameter, grey-brown. Second and third segments of equal length. Antennae faintly ringed grey-brown and ochreous-brown, shortly ciliated. Thorax, tegulae and metathorax pale straw-yellow, proximal half paler than distal half. Abdomen pale straw-yellow. Legs grey-white. Hind legs with two pairs of unequal length.

Fore wings cleft from 3/5; pale brown, mixed with scattered dark brown scales. These scales more prominent along costa and in discal cell. Dorsum of first lobe and costa of second lobe whitish. Small black spot just before base of cleft, at 2/3 of dorsum of first lobe and at apex, middle of outer margin and at anal angle of second lobe. Fringes grey. Underside brown; costa of wing and dorsum of first lobe paler.

Hind wings grey-brown. Fringes grey. Underside grey-brown. Venous scales black; in double row. Costal row longer.

Male genitalia.— Valvae asymmetrical. Left valve of rounded shape, sacculus with two vesicular protrusions, followed distally by a short, almost dorsally placed, spine. Right valve elongate, centrally slightly widened, sacculus with smooth widening at 1/3 of valve length, followed by flattened thorn. Uncus as long as tegumen, slender. Tegumen bilobate. Juxta asymmetrical, slender, almost spade-like. Vinculum arched. Aedeagus centrally bowed, gradually narrowing toward tip.

Female genitalia.— Antrum rather wide, from ostium progressively widening to 1/4 of length, followed by gradually funneling part, 1½ × longer than widest point. Ductus bursae short. Bursa copulatrix longitudinal, vesicular. Near junction to ductus a number of small ridges and folds. Signum consisting of two longitudinal fields of spiculae. Ductus seminalis 1½ × longer than bursa copulatrix, terminal third vesicular. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies from October to January. Hostplant unknown.

Distribution.— **Argentina:** Tierra del Fuego, Santa Cruz, Neuquen, Rio Negro, Buenos Aires, Cordoba, Catamarca; **Bolivia:** Altiplano; **Chile:** Valdivia, Magellanes, Santiago, Concepcion, Chiloe Id, Malleco, Maule, Bio Bio, Curico, Nuble, Llanquihue.

Hellinsia obscuricilia Arenberger & Wojtusiak, 2001
(figs 94, 250)

Hellinsia obscuricilia Arenberger & Wojtusiak, 2001: 70.

Material.— Holotype ♂: **Venezuela**, Paramo el Batallon, Quebrada de los Pios, 2950 m, 4.iii.1996 (J. Wojtusiak), gent Ar 4209 (Wojtusiak).

Diagnosis.— Group: J03. Left valve with saccular plate, with cucullar side curved, and bearing short spine. Right valve with saccular thorn, less than half valve width.

Description.— Male. Wingspan 16-18 mm. Head appressedly scaled, pale brown. Collar with rim of erect long, flat brown scales. Palpi slightly curved up, slender, length just over eye diameter, pale grey, tip of third segment dark grey. Antennae shortly ciliated, longitudinally striped brown-black and grey-white. Thorax, tegulae and metathorax pale ferruginous. Fore and mid legs striped brown and grey-white. Hind legs grey-brown.

Fore wings cleft from 3/5, pale ferruginous, gradually darkening towards apices. Small brown spot at base of cleft and intense black-brown scales at apices. Fringes ferruginous-grey; along terminal 1/5 of first lobe and around apex of second lobe black-brown. Underside brown, as above.

Hind wings and fringes grey-brown. Underside pale brown, especially in lobes. Venous scales black-ferruginous, in double row, costal row more intense and longer.

Male genitalia.— Left valve with complex saccular structure; basal spiny extension, and inverted hook at right tip of sacculus. Right valve with saccular thorn measuring less than half width of valve, followed by poorly defined rod-like process. Juxta short, with two unequal anellus arms. Uncus moderate and slender. Tegumen simple. Juxta rather short and stout, with asymmetrical pair of anellus arms. Vinculum arched, narrow. Aedeagus minimally arched. Without cornuti.

Female genitalia.— Unknown.

Ecology.— The moth flies in April. The hostplant is unknown.

Distribution.— **Costa Rica:** Monteverde, San Jose; **Venezuela:** Paramo el Batallon.

Hellinsia praenigratus (Meyrick, 1921)
(figs 95, 251, 356)

Pterophorus praenigratus Meyrick, 1921: 421.

Material.— Holotype ♂: **Peru**, Jurimaguas, iii (Parish) (BMNH) [examined].

Diagnosis.— Group: J03. The species resembles *H. postnigratus*, which differs in position of costal dots in first fore wing lobe, and saccular processes in both valves; and *H. zetes* which is considerably larger (27 mm).

Description.— Wingspan 15-20 mm. Head appressedly scaled pale brown-yellow. Face pale brown. Collar brown, with erect bifid scales. Palpi protruding, dorsally ochreous, ventrally dark brown, as long as eye-diameter. Antennae pectinate, indistinctly ringed dark and pale brown. Thorax and tegulae ochreous, rostrally brownish. Metathorax and abdomen brown-ochreous, mixed with darker brown scales; on segments 1 to 6 middorsal at rostral margin of tergite small dark brown dot. Fore and mid legs ochreous with longitudinal lines of dark brown scales; mid legs with brown brush of scales at base of spurs. Hind legs brown-ochreous, proximal tibiae with brown scales; spurs brown-ochreous with dark tip, median spurs longer than lateral spurs.

Fore wings cleft from 2/3, brown-ochreous. Markings dark brown: small discal spot, oblique spot at base of cleft, some dark scales at costa, costal spot just beyond base of cleft and in first lobe costal spots at 3/4 and 4/5, first lobe with small anal spot, terminal half of second lobe diffusely darkened. Fringes brown-grey; at termen of second lobe with distinct basal row of scales. Underside brown, with ochreous costal area in which costal spots as above.

Hind wings and fringes brown grey. Underside pale brown-grey. Venous scales ferruginous-black, basal half consisting of three rows, costal row extending into second lobe.

Male genitalia.— Asymmetrical. Left valve with saccular process consisting of plate bulging out to ventral valve margin and with short ventrally angulated spine. Right

valve with two small knob-like processes. Uncus just over half length of tegumen. Tegumen bilobed. Juxta with two asymmetrical anellus arms. Vinculum narrow, arched. Aedeagus mildly curved. No cornutus.

Female genitalia.— Ostium left sided in abdomen, flat, almost as long as antrum. Antrum with two thickened sections, as long as wide; with arched, small sclerite. Ductus bursae short. Bursa copulatrix long, vesicular. Signum two sclerotized plates with numerous spiculae. Ductus seminalis slender, $1\frac{1}{2} \times$ bursa copulatrix. Lamina ante-vaginalis as a mildly sclerotized ridge. Apophyses anteriores absent. Apophyses posteriores just over $2 \times$ the papillae anales.

Ecology.— The moth flies in January, March to May, October and December. Host-plant unknown.

Distribution.— **Peru:** Jurimaguas. **Ecuador:** Carchi, Morona-Santiago, Napo, Pichincha.

Hellinsia fumiventris (Zeller, 1877)
(figs 96, 252, 357)

Mimeseoptilus fumiventris Zeller, 1877: 472.

Material.— Type 1 ♀: (green label, Zeller's hand writing) *fumiventris*, Soncha. 483. gent CG 5076 (BMNH) [examined].

Diagnosis.— Group: J05. Left valve with trapezoid saccular plate, with straight spine a little longer than base of trapezium. Right valve with slender rod-like saccular process. The species is characterized by pale ochreous-brown colour, with fore wing spots at costa, termen and at base of cleft.

Description.— Male, female. Wingspan 19-22 mm. Head appressedly scaled, grey-brown. Collar and frons grey-brown. Face ochreous. Palpi $1\frac{1}{2} \times$ eye-diameter, slender, protruding, ochreous-brown. Antennae faintly ringed pale brown and ochreous-brown, shortly ciliated. Thorax, tegulae and metathorax ochreous-brown. Fore, mid and hind legs ochreous-brown. The hind legs with two pairs of spurs of unequal length, dark scales at base of tibial spurs.

Fore wings cleft from 3/5, ochreous-brown. Markings brown, consisting of minute discal spot, small spot just before base of cleft, costal spot at first lobe at 1/4, 1/2 and 3/4, anal spots, faint apical spots at both lobes and mid-terminal spot in second lobe, and scattered dark scales dispersed on wing. Fringes grey-brown, darkened at anal angle of first lobe. Underside dark brown.

Hind wings brown-grey. Fringes grey-brown. Underside dark brown. Venous scales black, in double row; costal row longer than dorsal row.

Male genitalia.— Left valve with trapezoid saccular plate, with straight spine a little longer than base of trapezium. Right valve with slender rod-like saccular process. Uncus rather long, curved, slender. Tegumen bilobed. Juxta stout, with symmetrical anellus arms. Vinculum arched. Aedeagus mildly curved, with cornutus formed by sclerotized ridges.

Female genitalia.— Ostium left central positioned, small and rounded. Antrum gradually widening, cone-shaped. Ductus bursae as long as antrum. Bursa copulatrix

vesicular, with longitudinal sclerotized ridge and spiculated signum. Lamina ante-vaginalis curved, narrow. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in February and September to November, at altitudes up to 2850 meters. Hostplant *Parthenium hysterophorus* L.

Distribution.— **Colombia; Ecuador:** Napo, Cosanga, Tungurahua, Ambato, Loja; **Mexico:** Jalisco; **Peru:** Ancash.

Hellinsia tupaci spec. nov.
(figs 97, 253)

Material.— Holotype ♂: **Ecuador**, Morona-Santiago, Macas, 1100 m, 11-23.xii.1997 (V. Pelz), gent CG 4516 (CG).

Diagnosis.— Group: J05. Left valve with basally positioned saccular plate, with small, narrow spine and knob on terminal margin, and blunt spine in basal part. Right valve with curved saccular rod.

Description.— Male. Wingspan 12 mm. Head appressedly scaled, above dark brown, between base of antennae ochreous and face pale brown. Palpi slender, protruding brown, as long as eye-diameter. Antennae shortly ciliated, alternating pattern: ochreous and ochreous-brown. Collar with erect, bifid scales, dark brown. Thorax and tegulae pale ochreous-brown; metathorax paler. Legs grey-brown. Hind legs with two spur pairs; in proximal pair lateral spur longer than medial spur; distal pair of equal length.

Fore wings cleft from 4/7, pale ochreous-brown. Markings black-brown: small discal spot; spot at base of cleft; diffuse scaling along costa from wing base to base of cleft; first lobe with costal dash at 1/4 and 3/4, and small dot at anal region; second lobe with small spots at apex and anal region and distinct spot mid-terminal, and diffuse scaling which progresses in intensity towards apex. Fringes pale grey, darker at anal region of first lobe and around apex of second lobe. Underside dark brown with distinct dark costal spot at 1/4 of first lobe.

Hind wings and fringes brown-grey. Underside brown-grey. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Left valve with saccular plate with two short spines directed toward tip of valve and basal knob. Right valve with an arched simple narrow rod-like sacculus. Juxta small, with two narrow anellus arms. Tegumen slender, simple. Uncus moderate, slender. Vinculum slightly arched, narrow. Aedeagus arched, rather narrow, with a gradually tapering acute tip.

Female genitalia.— Unknown.

Ecology.— The moth flies in December. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago.

Etymology.— The species is named after the Inca prince: Tupac-Yupanqui.

Hellinsia malesanus (Meyrick, 1921)
(figs 98, 254, 358)

Pterophorus malesanus Meyrick, 1921: 422.

Material.— Lectotype ♂ (designated here): **Peru**, Lima, 150 m, viii.1914 (Parish), gent BM 18706 (BMNH). Paralectotype 1 ♀ (designated here): **Peru**, Lima, 150 m, viii.1914 (Parish), gent CG 5075 (BMNH) [examined].

Diagnosis.— Group: J08. Left valve with saccular plate, with on distal end curved spiny process. Right valve with blunt saccular process, followed by rod-like process with widely forked tip. The species is characterized by three costal spots on fore wing.

Description.— Male, female. Wingspan 19 mm. Head appressedly scaled, pale brown, between base of antennae ochreous-brown. Palpi protruding, slender, as long as eye-diameter, mixed whitish-brown and pale brown. Antennae not examined. Thorax and tegulae whitish-pale brown.

Fore wings cleft from 3/5, whitish-pale brown. Along costa three dark brown longitudinal spots; apical spots in both lobes and diffuse scaling on entire wing surface, condensed just before base of cleft and in discus. Fringes grey-brown. Underside brown, markings as above.

Hind wings and fringes brown-grey. Underside grey-brown. Venous scales black, in double row. Costal row longer than dorsal row.

Male genitalia.— Left valve with saccular plate, with spiny process on distal end. Right valve with blunt saccular process, followed by rod-like process with widely forked tip. Uncus moderate, slender, curved tip. Tegumen bilobed. Juxta rather narrow, with two wider anellus arms. Vinculum centrally widened. Aedeagus minimally curved, cornutus as minute spiculae near tip.

Female genitalia.— Ostium left lateral, excavated. Antrum curved terminally, followed by twist basally; just under ostium widened with two rows of spiculae. Ductus bursae in basally directed twist. Bursa copulatrix vesicular. No signum. Ductus seminalis 1½ × longer than bursa copulatrix, slender. Lamina ante-vaginalis arched, narrow, sclerotized. Apophyses anteriores absent. Apophyses posteriores just over 2 × papillae anales.

Ecology.— The moth flies in July and August, at altitudes ranging from 150 to 2000 meters. Hostplant unknown.

Distribution.— **Peru**: Ancash, Lima.

Hellinsia aguilerae spec. nov.
(figs 99, 359)

Material.— Holotype ♀: **Ecuador**, Pichincha, Rd. Quito-Chiriboga km 33, 2650 m, 20.xii.1984 (N. Vene-dictoff), gent CG 5920 (AME/MGCL).

Diagnosis.— Group: XXX. The species is characterized by its grey colour, almost without markings. Externally the species resembles *H. calais*, but is even less marked. In genitalia it differs from *H. calais* by shorter and steeper funnel shape of antrum. From the yellow *H. morenoi* it differs by colour, and in genitalia the bursa copulatrix and Ductus seminalis are less developed, and ductus seminalis is longer in present species.

Description.— Wingspan 23 mm. Head appressedly scaled, grey-brown. Collar grey-brown. Palpi grey-brown, 1½ × eye-diameter. Antennae ringed pale and dark brown, shortly ciliated. Thorax and tegulae grey-brown.

Fore wings cleft from 5/8, grey-brown. Wings have mottled appearance, before base of cleft colour is darker, in baso-dorsal half of second lobe greyish. Fringes brown-grey. Underside as above.

Hind wings and fringes brown-grey. Underside brown-grey. Venous scales black, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium wide, almost flat. Antrum funnel-shaped, as long as wide at ostium. Ductus bursae very short. Bursa copulatrix vesicular, but slender, without signum. Ductus seminalis vesicular, slender, 2 × length of bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales. Papillae anales rounded.

Ecology.— The moth flies in December, at an altitude of 2650 meters. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

Etymology.— The species is named after president Jaime Roldos Aguilera from Ecuador, who died in an airplane accident in 1981.

Hellinsia alfaroi spec. nov.
(figs 100, 360)

Material.— Holotype ♀: **Ecuador**, Morona-Santiago, Macas, Gral. Proaño, Rio Jurumbaino, 1100 m, 14-15.iv.1998 (V. Pelz), gent CG 4513 (CG).

Diagnosis.— Group: XXX. The species is characterized by the yellow colour and dense brown markings. It resembles *H. postnigrata* and *H. praenigrata*, but differs by the intensive markings in present species, particularly at dorsum of fore wing, before base of cleft; and four spots at costa of first lobe.

Description.— Female. Wingspan 17 mm. Head appressedly scaled, vertex dark brown, face and between base of antennae brown-ochreous. Collar dark brown, with erect, long, bifid scales. Palpi slender, protruding, brown-ochreous, third segment with dark brown ring, as long as eye diameter. Antennae shortly ciliated, ringed pale brown and brown-ochreous. Thorax and tegulae brown-ochreous. Fore and mid legs brown-ochreous, mid legs with two dark brown scale bristles, around base of spur pairs. Hind legs brown-ochreous, with some dark brown scales near base of two pairs of spurs. The proximal spurs longer than distal pair and medial spurs in each pair longer than lateral spurs.

Fore wings cleft from 2/3, pale brown-ochreous. Markings dark brown: diffuse scales along costa; first lobe with costal streak just beyond base of cleft, and small spots in middle and at 2/3 and 4/5, in anal region; large blotch around and just before base of cleft; subterminal in second lobe two longitudinal spots; spot subdorsally between cell and dorsum and dorsal blotch just before spot at base of cleft. Fringes in cleft basally pale brown followed on both sides by darker and pale areas, terminally dark brown; along dorsum of wing pale brown with dark patch just beyond base of cleft and in terminal area of second lobe. Underside dark brown, with pale streak along costa and basal part of dorsum.

Hind wings dark grey-brown, ochreous tinged in basal part of third lobe. Fringes dark grey-brown. Underside dark brown, in lobes more ochreous tinged. Venous scales black, in two rows, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium slightly excavated. Antrum funnel shaped, as long as wide. Ductus bursae very short. Bursa copulatrix vesicular, without signum. Ductus seminalis a little longer than bursa copulatrix, vesicular. Apophyses anteriores absent. Apophyses posteriores just over $2 \times$ papillae anales. Papillae anales rounded.

Ecology.— The moth flies in April, at an altitude of 1100 m. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago.

Etymology.— The species is named after Elroy Alfaro, president of Ecuador, who was assassinated in 1912.

Remarks.— The scale brushes at mid legs suggest this species belongs to the genus *Oidaematophorus*. However, female genitalia lack the characteristics for this genus and fit the genus *Hellinsia*. Also considering the wing pattern I prefer to place this species into *Hellinsia* until more material becomes available to support any decision.

Hellinsia angela spec. nov.

(figs 101, 361)

Material.— Holotype ♀: **Ecuador**, Carchi, El Angel +12,5 km, 3500 m, 12.i.1985 (N. Venedictoff), gent CG 5937 (AME/MGCL).

Diagnosis.— Group: XXX. The species is characterized by the shining white colour, with only limited markings on fore wing, and the shape of antrum and lamina ante- and post-vaginalis, distinguishing it from other species.

Description.— Female. Wingspan 19 mm. Appressedly scaled, shining white, face some ferruginous scales. Collar pale ferruginous. Palpi protruding, slender, pale ferruginous-white, $2 \times$ eye-diameter. Antennae white, shortly ciliated. Thorax and tegulae shining white.

Fore wings cleft from 7/12, shining white, both lobes acute. Markings pale ferruginous: diffuse costal scales, denser just beyond base of cleft, and in costal 2/3 of first lobe; oblique spot just before and above base of cleft; second lobe with dorsal spot at 1/4, and mid dorsal. Fringes shining white. Underside white with diffuse pale ferruginous scales, mainly in basal wing half.

Hind wings and fringes shining white. Underside as fore wing. Venous scales pale ferruginous-white, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium flat. Antrum knob-like, $2 \times$ longer than wide; with a pair of stout sclerites. Ductus bursa short. Bursa copulatrix vesicular, without signum. Ductus seminalis vesicular, with delicate longitudinal sclerotized ridges, $1\frac{1}{2} \times$ bursa copulatrix. Lamina ante-vaginalis a narrow ridge. Lamina post-vaginalis arched, sindle shaped, centrally widened. Apophyses anteriores absent. Apophyses posteriores just under $2 \times$ papillae anales.

Ecology.— The moth flies in January, at an altitude of 3500 meters. Hostplant unknown.

Distribution.— **Ecuador:** Carchi.

Etymology.— The species is named after the locality of its occurrence: El Angel.

Hellinsia bogotanus (Felder & Rogenhofer, 1875)
(fig. 102)

Mimeseoptilus bogotanus Felder & Rogenhofer, 1875: plate 140, fig. 48.

Material.— Holotype (without abdomen): **Colombia**, Bogota, no date (Lindig) (BMNH) [examined].

Diagnosis.— Group: XXX. The species is characterized by the dark streak from fore wing base to base of cleft, where it ends obliquely.

Description.— Wingspan 25 mm. Head pale brown. Face and between base of antennae ochreous. Collar dark brown. Thorax medially and caudally dark brown; latero-cranially pale brown-grey.

Fore wings cleft from 5/8, pale ochreous-brown. Markings brown: oblique streak from base to just before base of cleft; faintly at costa just beyond base of cleft. Fringes pale brown-grey, in cleft greyish and dark grey towards termen.

Hind wings and fringes brown-grey.

Male genitalia.— Unknown.

Female genitalia.— Unknown.

Ecology.— Flight period unknown. Hostplant unknown.

Distribution.— **Colombia**: Bogota.

Remarks.— The markings in the type specimen are distinct, nevertheless the specimen is in a very poor condition.

Hellinsia cinerarius (Philippi, 1864)

Pterophorus cinerarius Philippi, 1864: 296.

Material.— Type: Probably lost.

Description.— After Philippi, 1864: "Pt. pallide cinereus; alis anticis apice furcatis punctisque nigris sparsis marmoratis; posticis trifidis, vix pallidioribus; abdomine supra in parte posteriore linea ornato. Longit. corp. 3 1/2 lin., extens. alarum 10 1/2 lin."

Prope Santiago occurrit.

Der Koerper ist hellgrau und mit weissen, silberglaenzenden Schueppchen bedeckt; die Fuehler sind hellgrau, die Taster silberweiss, die Beine weisslich. Die Vorderfluegel sind an der Spitze zweispaltig und oben graulich weiss, mit kleinen schwaerzlichen Puenktchen namentlich gegen den Vorderrand hin zwischen den Nerven marmoriert; auf den Hinterfluegeln sind die Puenktchen weit kleiner und nur mit der Loupe zu unterschieden. Die Unterseite ist einfarbig hellgrau."

Translation: "Abdomen pale grey and covered with white, shiny silvery scales; antenna pale grey, palpi silvery-white, legs whitish. Fore wings cleft near apex and upperside grey-white, speckled with small blackish dots between the veins near costa, on hind wings dots much smaller and only recognizable with magnifying glass. Underside uniformly pale grey".

Ecology.— Flight period and hostplant unknown.

Distribution.— **Chile**.

Remarks.— The description of the species given above, is, on careful reading, rather cryptic. One can however deduce from the details on the spotting, that this species belongs to the genus *Hellinsia*. However, within this genus differences between the species are often so delicate, it is impossible to determine what species is actually meant. The only clue in the description is the mention of silvery scales on the abdomen and the silvery palpi.

The type-specimen was recorded as lost by Dr. M.D. Elgueta (MNHC) (pers. comm.).

Hellinsia coquimboicus (Gielis, 1991)
(figs 103, 362)

Oidaematophorus coquimboicus Gielis, 1991: 88.

Material.— Holotype ♀: **Chile**, Coquimbo, Nague, 11 km N. Los Vilos, 20 m, 4-5.xi.1981 (Davis), gent CG 6065 (USNM).

Diagnosis.— Group: XXX. The species is characterized by the stout thorn-like shape of the apophyses anteriores. The species resembles *H. hololeucus* Zeller and *H. mallecoica* Gielis, differing by the shape of the pronounced apophyses anteriores.

Description.— Female. Wingspan 19 mm. Head (descaled) with pale brown scales at collar and face. Between bases of antennae segments white. Palpi just over eye-diameter; grey-white, distally progressively scaled grey-brown. Second segment as long as third. Antennae grey-white, shortly ciliated. Thorax and tegulae pale brown, proximally paler. Metathorax creamy-white. Legs grey-brown. Hindlegs with two spur pairs of equal length.

Fore wings cleft from 2/3; colour brown-grey. Scattered dark brown scaling, condensed in discal spot, spot just before base of cleft and costal spot above base of cleft. This last spot with pale brown-grey margin. Some grouped scales in both lobes without spot formation. Fringes grey-white. Underside grey-brown, with indication of costal spot and one before base of cleft.

Hind wings grey. Fringes grey-white. Underside pale grey-brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Antrum 1½ × longer than wide. Top flattened. Ductus bursae gradually progressing into the bursa copulatrix. No signum. Ductus seminalis very long, ending vesicular. Apophyses anteriores short, stout, in shape of large thorn. Apophyses posteriores three to four times the diameter of papillae anales.

Ecology.— The moth flies in November. Hostplant unknown.

Distribution.— **Chile**: Coquimbo.

Hellinsia fuscotransversa Gielis, 1996
(figs 104, 363)

Hellinsia fuscotransversa Gielis, 1996: 99.

Material.— Holotype ♀: **Peru**, Carabaya, Oconeque, 2135 m, dry season, vii.(19)04 (G. Ockenden), gent CG 5042 (BMNH).

Diagnosis.— Group: XXX. The species is characterized by the pale brown transverse band across the basal half of both fore wing lobes.

Description.— Female. Wingspan 19 mm. Head ochreous-white, appressedly scaled, with some erect scales at lateral margin of vertex and collar. Palpi protruding, $1\frac{1}{2} \times$ eye-diameter, slender, ochreous-brown. Antennae shortly ciliated, faintly ringed pale brown and ochreous-brown. Thorax, tegulae and metathorax pale ochreous-brown. Hind legs absent in type specimen.

Fore wings cleft from 2/3, greyish-white, speckled ochreous. Markings ochreous-brown: consisting of oblique spot before base of cleft, transverse spot in basal half of both fore wing lobes, dorsal spot at 3/4 of first lobe, spot on dorsum of second lobe as in the first lobe and apical darkening in both lobes. Fringes grey-white, near darker wing parts grey-brown. Underside as above, but markings less pronounced.

Hind wings grey. Fringes brownish-grey. Underside brown-white. Venous scales orange-brown, in single row. Basally this row shows dense grouped scales, progressing into row of sparse distributed scales.

Male genitalia.— Unknown.

Female genitalia.— Ostium flat. Antrum campanulate, with sclerotized ridge in distal part of ductus bursae. Ductus bursae gradually widening into vesicular bursa copulatrix. Signum in shape of delicately spiculated plate. Apophyses posteriores $2 \times$ papillae anales, but arched around papillae. Apophyses anteriores short.

Ecology.— The moth flies in July. Hostplant unknown.

Distribution.— **Peru:** Carabaya.

Hellinsia investis Gielis, 1999
(figs 106, 365)

Hellinsia investis Gielis, 1999: 311.

Material.— Holotype ♀: **Costa Rica**, Cartago, Ref Nac Fauna Silv Tapanti, 1150 m, iv.1992 (G. Mora), gent CG 3893 (Inbio).

Diagnosis.— Group: XXX. The species is characterized by the markings on the fore wings and the prominent scale-brushes on the midleg at the base of the spur pairs.

Description.— Female. Wingspan 20 mm. Head appressedly scaled, grey-white. Palpi grey-white, protruding, as long as eye-diameter. Antennae ringed grey-white and grey-brown, shortly ciliated. Thorax and tegulae ochreous-grey, caudally brownish mixed. Hind legs white, mixed with grey scales, especially around base of spurs. Spur pairs of unequal length, medial longer than lateral spur.

Fore wings cleft from 2/3, grey-white. Along costa ochreous, longitudinal dash, widening towards base of cleft, tip of both lobes with ochreous tinge, in first lobe more than second. Some black scales along costa, small spot before and below base of cleft, costal spot above base of cleft, dark scales at dorsum of first lobe close to base of cleft, a small costal spot at 1/4 of first lobe and a diffuse darkening of both lobes towards apices, more expressed in first lobe. Fringes grey, around apices and anal regions black. Underside dark brown, pale in both lobes.

Hind wings and fringes grey. Underside dark brown, in the third lobe mixed with white scales. Venous scales brown-black, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium left lateral. Antrum narrow, four times longer than wide. Ductus bursae gradually widening. Bursa copulatrix and ductus seminalis longitudinal and vesicular. No signum. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in April, at an elevation 1250 meters. Hostplant unknown.

Distribution.— **Costa Rica:** Cartago.

Hellinsia lumbaquia spec. nov.

(figs 107, 366)

Material.— Holotype ♀: **Ecuador**, Napo, Lumbaqui-Texaco, 850 m, 8.iii.1975 (N. Venedictoff), gent CG 4367 (AME/MGCL). Paratype without abdomen: Same date and locality (CG).

Diagnosis.— Group: XXX. In external characteristics the species resembles *H. suspiciosus*, but differs in absence of longitudinal dark line in center of fore wing and central in first lobe; and with *H. coquimboicus*, differing in apophyses anteriores, which are well developed in *coquimboicus* and rudimentary in the present species.

Description.— Wingspan 15-16 mm. Head appressedly scaled, pale brown. Palpi pale brown, as long as eye-diameter, protruding. Thorax, tegulae and abdomen pale brown.

Fore wings cleft from 3/5, pale brown. Markings dark brown: discal spot, spot around base of cleft, and dash between these two; first lobe with costal spot at 1/5, central and longitudinal dash, faint apical spot and distinct anal spot; second lobe with faint apical and anal spots. Fringes brown-grey. Underside brown.

Hind wings and fringes pale brown. Underside pale brown. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium left central positioned, slightly excavated. Antrum little wider than long, with two longitudinal sclerites. Ductus bursae as long as width of antrum. Bursa copulatrix long and terminally wide vesicular; no signum. Ductus seminalis $1\frac{1}{2}$ × bursa copulatrix, slender, vesicular. Lamina ante-vaginalis as narrow sclerotized ridge, with lateral small and slender apophyses anteriores. Lamina post-vaginalis rounded, wide at antrum, reaching ostium. Apophyses posteriores 2 × papillae anales. Papillae anales simple.

Ecology.— The moth flies in March, at an altitude of 850 meters. Hostplant unknown.

Distribution.— **Ecuador:** Napo.

Etymology.— The species is named after the collecting site: Lumbaqui, in Ecuador.

Hellinsia maldonadoica spec. nov.

(figs 108, 367)

Material.— Holotype ♀: **Ecuador**, Carchi, Rd Maldonado -63,5 Km, 2850 m, 16.i.1985 (N. Venedictoff), gent CG 5941 (AME/MGCL).

Diagnosis.— Group: XXX. The species resembles *H. cuculla* in external characteristics, but is far less heavily marked, and in female genitalia by absence of cross-shaped sclerotized structure of lamina ante-vaginalis.

Description.— Female. Wingspan 21 mm. Head appressedly scaled, pale ferruginous, between base of antennae grey-white. Collar ferruginous. Palpi slender, protruding, grey-white. Thorax, tegulae and abdomen pale ochreous. Hind legs pale ochreous, with two pairs of unequal spurs, proximal pair longer.

Fore wings cleft from 2/3, pale ochreous-white. Markings brown: some scales at wing base; spot just before base of cleft; costal spot above and beyond base of cleft. Fringes grey-white. Underside ferruginous-ochreous, basal half darker.

Hind wings and fringes pale ochreous-white. Underside as fore wings. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium left centrally positioned; slightly oblique. Antrum $1\frac{1}{2} \times$ longer than wide, with two narrow, longitudinal sclerites. Ductus bursae very short. Bursa copulatrix slender, vesicular, without signum. Ductus seminalis, long and slender, $1\frac{1}{2} \times$ bursa copulatrix. Lamina ante-vaginalis narrow transverse ridge. Lamina post-vaginalis poorly developed. Apophyses anteriores absent. Apophyses posteriores $3 \times$ papillae anales.

Ecology.— The moth flies in January, at an altitude of 2850 meters. Hostplant unknown.

Distribution.— **Ecuador:** Carchi.

Etymology.— The species is named after the collecting site: Maldonado.

Hellinsia milleri spec. nov.

(figs 109, 368)

Material.— Holotype ♀: **Ecuador**, Pichincha, Rd. Quito-Chiriboga km 27, 3180 m, 20.iii.1982 (N. Vene-dictoff), gent CG 5953 (AME/MGCL).

Diagnosis.— Group: XXX. The species is characterized by the distinct wing markings, with extensive brown, almost circular, pattern on second fore wing lobe, and female genitalia showing unique antrum-ostium shape.

Description.— Female. Wingspan 19 mm. Head white, collar ferruginous-brown. Palpi grey-white, protruding, slender, as long as eye-diameter. Antennae ringed pale brown and white, shortly ciliated. Thorax and tegulae cranially white, caudally ferruginous-brown. Fore legs ochreous-white medially with brown scales, and small scale bristle at base of spur pair; mid legs ochreous-white, lateral line of brown scales on tibiae; hind legs ochreous-white, with two pairs of spurs of unequal length, medial spurs longer.

Fore wings cleft from 3/5, bone-white. Markings dark brown: faint discal spot; scattered scales along costa; first lobe with large spot above base of cleft and smaller at 2/3 and 4/5, and anal spot; second lobe with obscured apex, arched along dorsum to just before and around base of cleft stretching out to dorsum of 1/7 of first lobe. Fringes grey-brown, darker at dark spots at costa and dorsum of lobes. Underside dark brown, along costa narrow yellow line, divided by dark spots as above.

Hind wings and fringes dark brown-grey. Underside dark brown. Venous scales black, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium mildly arched. Antrum a little wider than long. Ductus bursae as long as antrum. Bursae copulatrix vesicular, without signum. Interception with ductus seminalis not apparent. Lamina ante-vaginalis arched, narrowly sclerotized along anterior margin. Apophyses anteriores absent. Apophyses posteriores 3 × papillae anales. Papillae anales blunt.

Ecology.— The moth flies in March, at an altitude of 3180 meters. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

Etymology.— The species is named after Dr. Jacqueline Y. Miller, associate director, McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, Gainesville Florida for giving me the opportunity to study Ecuadorian material originally housed at the Allyn Museum of Entomology.

Hellinsia montufari spec. nov.
(figs 110, 369)

Material.— Holotype ♀: **Ecuador**, Carchi, des. El Carmelo km 15, 3250 m, 7.i.1983 (N. Venedictoff), gent CG 5947 (AME/MGCL).

Diagnosis.— Group: XXX. The species resembles externally *H. orellana* Gielis. The wing pattern is identical, but the shape of fore wing differs by an acute first lobe, without terminal region and wider second lobe with rounded anal region.

Description.— Female. Wingspan 28 mm. External characteristics see: diagnosis and description of *H. orellana*. Differences to the latter species are: Palpi pale brown, third segment straw yellow.

Male genitalia.— Unknown.

Female genitalia.— Ostium centrally positioned; as wide as antrum length. Antrum square, laterally with two longitudinal sclerites. Ductus bursae slender, two and a half times length of antrum. Ductus seminalis vesicular and short. Bursa copulatrix 3 × length of ductus seminalis, vesicular, without signum. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in January, at an altitude of 3250 meters. Hostplant unknown.

Distribution.— **Ecuador:** Carchi.

Etymology.— The species is named after Montufar, an Ecuadorian freedom fighter, opposing the Spanish.

Hellinsia morenoi spec. nov.
(figs 111, 370)

Material.— Holotype ♀: **Ecuador**, Morona-Santiago, Macas, 1000 m, 11-23.xii.1997 (V. Pelz), gent CG 4515 (CG).

Diagnosis.— Group: XXX. The species resembles in external characteristics *Hellinsia lenis* very much, but differs in the more terminal position of spots at termen of second fore wing lobe; rounded spot at base of cleft and spots in first fore wing lobes.

Description.— Female. Wingspan 15 mm. Head appressedly scaled, pale brown, between base of antennae whitish. Collar pale brown, with erect, long, bifid scales. Palpi slender, protruding, dark brown, as long as eye-diameter. Antennae shortly ciliated, creamy-white with longitudinal narrow dark line. Tegulae and metathorax brown-ochreous. Thorax and abdomen not examined. Fore and mid legs striped longitudinally, creamy-white and black-brown. Hind legs creamy-white, darkening on tarsal segments; with two pairs of spurs with ventrally dark scales, proximal pair of spurs longer than distal pair and medial spurs longer than lateral spurs.

Fore wings cleft from 5/9, pale brown-ochreous. Markings dark brown: few discal scales; spot at base of cleft; first lobe with costal spots at 1/4 and 2/3 and dorsal spot at 3/4; second lobe with apical, anal and mid-terminal spot. Fringes brown-grey, darker in distal half of fringes. Underside brown-grey, with spots as above.

Hind wings and fringes brown-grey. Underside brown-grey, with indistinct small spot at apex of first lobe. Venous scales blackish, in double row, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium left lateral in abdomen. Antrum oblique and short, with narrow sclerite. Ductus bursae as long as antrum. Bursa copulatrix vesicular, without signum. Ductus seminalis slender, vesicular, 1½ × bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in December. Hostplant unknown.

Distribution.— **Ecuador:** Morona-Santiago.

Etymology.— The species is named after president Garcia Moreno of Ecuador, who was assassinated in 1875.

Hellinsia nigrosparsus (Zeller, 1877)

Leioptilus nigrosparsus Zeller, 1877: 482.

Material.— Holotype: (**Peru**), Chanchamayo, no date (probably lost).

Description.— After Zeller, 1877: "Alis ant. niveis, triangulo costali ante fissuram, dimidio posteriore laciniae prioris nigro-squamato, macula punctisque duobus nigris laniniae posterioris. ♂.

Von der reinweissen, etwas seidenglänzenden Farbe der *Acipt. pentadactyla*, mit schwarzer Zeichnung des Vorderzipfels.

Grösse der kleinsten Pentadactyla, Körper und Beine reinweiss (doch ist vielleicht der Hinterkopf gelblich). Hinterleib fehlt, sowie die Beine bis auf ein Vorder- und ein Mittelbein. Erstes ist auf der Innerseite des Schenkels und an der am Ende durch Behaarung verdickten Schiene schwarz; die Schiene hat auch ein schwarzes Mittelband; derer seidenweisse Metatarsen ist auf dem Rücken an der Wurzel schwarz und hat ein breites, schwarzes, nicht vollständig umschliessendes Mittelband; die andern Fussglieder sind an der grössern Wurzelhälfte schwärzlich. Am Mittelbein hat die Schienen auf dem Rücken 3 schwarze Fleckchen in gleichen Abständen von einander und noch eins am Ende; der kleinere Dorn ist mit einer schwarzen, seitlichen Längslinie, der längere mit einem Mittelbändchen gezeichnet, beide haben schwarze Spitzen; auch der Fuss ist schwarzfleckig.

Vorderflügel 5''' lang, wie bei *osteodactylus* gestaltet, aber schmäler, schneeweiss mit schwarzen Zeichnungen. In der Mitte zwischen Basis und Spalte ist ein aus genäherten schwarzen Schuppen gebildeter, schwacher Fleck; mehr zerstreute Schuppen zeigen sich noch darunter gegen den Innenrand. Vor der Spalte ist ein breites Costaldreieck, das von der hellen Subcostalader durchschnitten wird und mit der Spitze am Anfang des Hinterzipfels endigt. Der Grösste Theil des Vorderzipfels ist mit schwarzen zusammengeflossenen Längsstreifen versehen, vor welchen ein Costalpunkt und ein Costalfleck durch grössere Dunkelheit und Schärfe sich auszeichnen; ein solcher Punkt liegt unter der Flügelspitze und einer weiter einwärts auf dem reinweissen Innenrand des Zipfels. Die Costalfransen dieses Zipfels sind grösstenteils schwärzlich. Der Hinterzipfel hat in seiner Hälfte einen schwärzlichen Fleck, dann einen rein schwarzen Punkt des Dorsalrandes und einen andern in der Spitze.

Hinterflügel ungefleckt; die Costalfransen der ersten Feder bis vor der Spitze der letztern hellblond.

Unterseite der Vorderflügel bräunlich mit einem braunen Mündchen dicht vor der Spalte und einem solchen Costalstrich darüber, und mit zwei schwarzen Pünktchen des Vorderrandes des Vorderzipfels, einem in der Spitze und einem davor am Innerrande. Hinterflügel auf den zwei ersten Federn bräunlich angelaufen; die erste Feder in der Spitze mit einem Punkt, der doch auf der Oberseite ganz fehlt."

Translation.— "Has the same pure white, slightly silky shining colour of *Acip. pentadactyla*, with black markings in first lobe.

The size of the smallest *Pentadactyla*, abdomen and legs pure white (may be the collar of the head yellowish). Abdomen missing, also missing legs but for one fore and mid leg. The former black on median side of femur and terminally the tibia thickened by black scales; the tibia also has a black central band; the silky white metatarsal segments dorsally and proximally black, and has wide, black, not completely closed band in middle; other tarsal segments blackish basally. Tibia of mid leg dorsally with three little black spots on equal distance and one terminally; the smaller tarsal spine with black lateral line, the longer tarsal spine marked with a small central band, both spines with black apex; also both basally black spotting.

Fore wing 5'' long, shaped as in *osteodactylus*, but narrower, snow white with black markings. In middle, between base and cleft a black spot consisting of grouped black scales; additional scattered scales between the spot and posterior margin. Before the cleft a wide costal triangle, crossed by the pale subcostal vein and ending with top of costal triangular at beginning of second lobe. Most of the first lobe covered by confluent black longitudinal lines, in which a costal dot and a costal spot can be recognized by their greater intensity; a dot as such beneath the apex and another at the posterior margin of the first lobe. Costal fringes of this lobe mainly black. The second lobe with central black spot, followed by a black spot at dorsum and an apical one.

Hind wings unmarked, the costal fringes of the first lobe up to the apex of the third lobe bright yellow-white.

Underside of fore wing brownish with a brown crescent near the base of the cleft, and a costal line above it, and with two black dots at the costa of the first lobe, one apical and one terminal. First and second lobe of hind wing brownish scaled; in the first lobe without apical dot, not present on the upper side".

Ecology.— Flight period and hostplant unknown.

Distribution.— **Peru.**

Hellinsia ossipellis (Walsingham, 1897).
 (fig. 112)

Pterophorus ossipellis Walsingham, 1897: 60.

Material.— Holotype (without abdomen): **Dominican Rep.**, Puerto Plata, 15.v.1894 (Gudman) (BMNH) [examined].

Description.— After Walsingham, 1897: "Antennae bone-grey. Palpi very short, projecting, slender; bone-white. Head and thorax bone-grey. Fore wings of almost even width throughout; costa straight, second lobe scarcely widened at middle; uniformly bone-grey, the extreme costa slightly paler throughout; cilia bone-grey. Exp. al. (wing-span) 16 mm. Hind wings bone-grey with a slightly bluer tinge; cilia bone-grey. Abdomen bone-grey. Legs white, unspotted."

Ecology.— The moth flies in May. Hostplant unknown.

Distribution.— **Dominican Rep.**

Hellinsia pichincha spec. nov.
 (figs 113, 371)

Material.— Holotype ♀: **Ecuador**, Pichincha, Quito-Chiriboga km 33, 2650 m, 20.xi.1985 (N. Venedictoff), gent CG 5933 (AME/MGCL).

Diagnosis.— Group: XXX. The species externally resembles *H. cuculla*, but differs in bigger size and denser markings on fore wing.

Description.— Wingspan 24 mm. Head appressedly scaled, pale ferruginous, between base of antennae creamy-white. Palpi creamy-white, slightly curved, $1\frac{1}{2}$ × eye-diameter, second segment with drooping long white scales, third segment slender. Antennae brown-grey, shortly ciliated. Thorax and tegulae very pale ferruginous. Hind legs pale grey-white; with two pairs of spurs of unequal length, proximal pair longer.

Fore wings cleft from 5/8, pale yellow. Markings dark brown: discal spot; spot well before base of cleft; basal dash, and a dorsal dash between discal spot and base of cleft; first lobe with costal dash just beyond base of cleft, and mid-costal, in center of lobe, and at anal angle; darkening in terminal half of costa, small spots at mid-termen and anal angle. Fringes ochreous-grey, darker at apex of both lobes and anal angle of first lobe. Underside ferruginous-ochreous, with brown scales at base of wing and spot before base of cleft.

Hind wings pale grey. Fringes pale ochreous-grey. Underside ferruginous-ochreous. Venous scales in double row, ferruginous, costal row longer.

Male genitalia.— Unknown.

Female genitalia.— Ostium excavated. Antrum funnel shaped, a little longer than wide; with two small longitudinal sclerites. Ductus bursae very short. Bursa copulatrix vesicular, posterior half longitudinally sclerotized ridges; no signum. Ductus seminalis $2\frac{1}{2}$ × bursa copulatrix, terminally enlarged and vesicular, in posterior part some sclerotized ridges. Lamina ante-vaginalis arched, centrally with two small knobs. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales. Papillae anales rounded.

Ecology.— The moth flies in November, at an altitude of 2650 meters. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

Etymology.— The species is named after the province of its occurrence: Pichincha.

Hellinsia socorroica (Gielis, 1991)
(figs 114, 372)

Oidaematophorus socorroica Gielis, 1991: 21.

Material.— Holotype ♀: **Mexico**, Socorro Is., Revillagigedo Arch., 400 m, 6.vi.1977 (Hogue & Evans), gent CG 6104 (LACM). Paratype without abdomen: same locality and data (LACM).

Diagnosis.— Group: XXX. The species is characterized by unmarked, ferruginous-brown fore wings. The species belongs to the *H. hololeucus* group from the southern half of the continent, differing in the shape of the apophyses anteriores.

Description.— Male, female. Wingspan 19-22 mm. Head appressedly scaled, collar with some erect scales. Collar and vertex ferruginous, face brown. Palpi as long as eye-diameter, first segment creamy-white; second segment above brown and under whitish; third segment small, brown. Antennae grey-brown, shortly ciliated. Thorax, tegulae and metathorax brown. Abdomen brown. Hind legs greyish with two pairs of spurs of unequal length. Middle pair of legs with scale brush at base of distal pair of spurs.

Fore wings cleft from 2/3, colour ferruginous-brown. Fringes pale grey-brown. Underside ferruginous-brown.

Hind wings brown-grey. Fringes brown-grey. Underside grey-brown. Venous scales dark brown, in single, short, row.

Male genitalia.— Unknown.

Female genitalia.— Antrum rounded. Ductus bursae as long as antrum, with small sclerotized plate. Bursa copulatrix large, longitudinally vesicular. No signum, but posterior part with longitudinal ridges. Ductus seminalis longitudinally vesicular, with similar ridges near ductus bursae. Lamina ante-vaginalis arched. Apophyses anteriores as long as apophyses posteriores and wide.

Ecology.— The moth flies in June and September. Hostplant unknown.

Distribution.— **Mexico:** Socorro Island, Guerrero.

Hellinsia tepidus (Meyrick, 1922)
(fig. 115)

Pterophorus tepidus Meyrick, 1922: 299.

Material.— Holotype (without abdomen): **Costa Rica**, Vulcan Irazu, 1220 m, 1920 (BMNH) [examined].

Description.— After Meyrick, 1922: “♂. 24 mm. Head, palpi ferruginous-ochreous. Thorax ferruginous-ochreous, another third white, some whitish suffusion near posterior extremity. Forewings cleft to 3/5, first segment rather narrow, second slightly

broader, termen very obliquely rounded; ferruginous-ochreous, some dark fuscous irroration strewn along fold, and between suffused dark brown spots in disc at 1/3 and before cleft, latter followed by some white suffusion; some white suffusion along costa towards base; a dark fuscous elongate mark on costa beyond base of cleft; a subdorsal streak of white suffusion from 1/3 to near cleft; a white streak along lower margin of first segment from about 1/4 to near apex; a streak of white suffusion from second discal spot to middle of termen of second segment: cilia pale ochreous, on costa tinged white towards apex. Hindwings grey; cilia light grey."

Ecology.— Flight period and hostplant unknown.

Distribution.— **Costa Rica.**

Hellinsia urbanus (Walsingham, 1915)
(figs 116, 373)

Pterophorus urbanus Walsingham, 1915: 444.

Material.— Holotype ♀: **Guatemala**, Baja Vera Paz, San Gerónimo, 900 m, 1880 (G.C. Chapman), gent BM 18150 (BMNH) [examined].

Diagnosis.— Group: XXX. The species is characterized by the distinct spots on the fore wing and the narrow dark dash in the anal region of the first lobe of the fore wing. The species resembles *H. praeinigratus* Meyrick very much, but differs in the costal darkening, and the pattern of darkening of the fringes.

Description.— Female. Wingspan 14-15 mm. Head appressedly scaled, brownish-white. Collar brown-grey. Palpi protruding, as long as diameter of eye, pale brown. Antennae grey, shortly ciliated. Thorax, tegulae and abdomen greyish-white. Hind legs grey-white, near base of spurs brownish. Spur pairs both of unequal length, grey-white, with brown tip.

Fore wings cleft from 3/5, grey-white. Markings dark brown: poorly developed spot in cell, semi-lunar spot at base of cleft, large spot at costa of first lobe just beyond base of cleft and preceded by smaller spot at 2/3 of costa, apical spot in both lobes, small, dash-like spot at anal region of the second lobe and a diffuse brown scaling at the mid-costa. Fringes greyish, with a narrow dash at anal spot of first lobe and around anal region of second lobe. Underside heavily brown-speckled, with dark brown spots as above.

Hind wing and fringes white-grey. Tips of lobes with poorly developed darker grey scale groups. Underside grey-brown, with apical spots as above. Venous scales in double row, grey-brown. Costal row longer, and arching around short dorsal row.

Male genitalia.— Unknown.

Female genitalia.— Ostium left laterally positioned. Antrum gradually narrowing, with two sclerites. Ductus bursae short. Bursa copulatrix vesicular, with minute spiculae. Ductus seminalis slender, as long as bursa copulatrix. Apophyses anteriores long, slender and apically capitate. Apophyses posteriores $2\frac{1}{2}$ × longer than the papillae analoges.

Ecology.— The flight period is unknown. Hostplant unkown.

Distribution.— **Guatemala.**

Hellinsia zetes (Meyrick, 1930)
(figs 117, 374)

Pterophorus zetes Meyrick, 1930: 569.

Material.— Holotype ♀: **Brazil**, Bahia, Cachinbo, 1890, gent BM 18695 (BMNH) [examined].

Diagnosis.— Group: XXX. The species is characterized by delicate brown speckling of fore wing, with small discal spot, spot before base of cleft and distinct costal line and spot in first fore wing lobe.

Description.— Female. Wingspan 23 mm. Head, collar and frons brown-grey. Head appressedly scaled. Palpi brown-grey, curved up, a little over eye-diameter. Antennae grey-brown, dorsally and white centrally, shortly ciliated. Thorax and tegulae brown-grey. Metathorax and abdomen grey-brown. Fore legs, mid legs and hind legs creamy-white, speckled with dark brown scales at base of spurs. These spur pairs both of unequal length, creamy-white with dark brown base and top.

Fore wings cleft from 3/5 colour, pale brown to creamy-white. Markings dark brown: small discal spot, small oblique spot just before base of cleft, costal line at 1/3 and small spot at 2/3 of costa of first lobe, dorsal at 3/4 spot of first lobe and dark apex of both lobes. In second lobe narrow line parallel to dorsum. Fringes brown-grey, darkened at apex of both lobes and margining dorsum of second lobe. Underside dark brown, with some creamy scales in apical field of first lobe.

Hind wing and fringes brown-grey. Underside dark grey-brown. Venous scales brown-grey, in single row.

Male genitalia.— Unknown.

Female genitalia.— Ostium centrally positioned, mildly excavated. Antrum funnel-shaped, as long as wide. Ductus bursae gradually widening, 3 × longer than antrum. Bursa copulatrix vesicular and covered with numerous spiculae. Ductus seminalis originates from base of corpus bursa; narrow duct with longitudinal sclerotized ridges progresses into, large vesica. Lamina ante-vaginalis centrally trapezoid-shaped; laterally with short apophyses anteriores. Apophyses posteriores four times papillae anales.

Ecology.— The moth flies in May and July. Hostplant unknown.

Distribution.— **Brazil**: Bahia; **Costa Rica**: Puntarenas.

Oidaematophorus Wallengren, 1862.

Oidaematophorus Wallengren, 1862: 19.— Type species: *Alucita lithodactyla* Treitschke, 1833, by monotypy.

= *Oedaematophorus* Zeller, 1867, emendation.

= *Pterophorus* Fernald, 1898 (nec Schäffer, 1766).

= *Ovendenia* Tutt, 1905: 37.— Type species: *Alucita septodactyla* Treitschke, 1833, by original designation.

Diagnosis.— The genus is characterized by the venation as mentioned in the Description, the presence of scale bristles on the mid legs at the base of the spur pairs, and in the female genitalia the bell- or widened funnel shape of the antrum.

Description.— Head appressedly scaled. Frons smooth. Palpi slender, upcurved,

just over eye-diameter. First fore wing lobe with acute top, second lobe with terminal margin. Fore wings broad, in general well marked. Mid legs have distinct scale-brushes around base of spur pairs. Venation: R1 absent; R2, R3, R4 and R5 separate; Cu1 from angle of cell and Cu2 from cell. Hind wings in third lobe two veins.

Male genitalia.— Asymmetrical valvae, with spines and saccular processes. At base of valvae distinct brush of "hairs". Tegumen and uncus well-developed. Juxta arched. Vinculum hardly noticeable. Aedeagus slightly curved, without cornutus.

Female genitalia.— Antrum distinctly wide and "reversed bell-shaped", well-sclerotized, and asymmetrical in shape and position. Ductus bursae with sclerotized ridges. Ductus seminalis originating near antrum. Bursa copulatrix vesicular, without signum. Lamina ante-vaginalis poorly developed.

Ecology.— Hostplants mainly belong to Compositae.

Distribution.— Cosmopolitan.

Remarks.— The diagnosis of the genus *Oidaematophorus* has been uncertain for a long period. Originally erected for the palaearctic species *Alucita lithodactyla* Treitschke, an influx of species from other continents, with apparently similar external characteristics, followed. It became evident that the definition of this species was cause for discussion. If the combined anatomical features of the type species are taken as a basis for the genus, a combination of wing venation, the presence on mid legs of scale bristles at base of spur pairs, and bell- or widened funnel shaped antrum in female genitalia seems the best option (Gielis, 1993). As a result, species which partly present characteristics as mentioned above, are to be placed in the genus *Hellinsia*. For this reason a number of species so far treated as belonging to the present genus have been transferred, after checking the combined characteristics.

Oidaematophorus eupatorii (Fernald, 1891)
(figs 118, 255, 375)

Alucita eupatorii Fernald, 1891: 87.

Misidentification:

Oedematophorus cretidactylus, Zeller, 1874: 444; Fernald, 1893: 96.

Diagnosis.— Left valve with curved saccular process of 5/9 of valve length. Right valve with small, acute saccular knob, followed by small rod. The wing pattern is bright, with well demarcated spots, less seen in other species in the genus.

Description.— Male, female. Wingspan 21-23 mm. Head appressedly scaled, ferruginous-white. Collar with erect scales, ferruginous. Palpi slightly curved, $1\frac{1}{2} \times$ eye-diameter; ferruginous-brown. The third segment small. Antennae vaguely ringed, white and brown; shortly ciliated. Thorax, tegulae and abdomen ferruginous-white, distal abdominal segments gradually darkening to brown. Legs with prominent tufts of scales near spurs.

Fore wings cleft from 2/3; creamy-white. Markings dark brown: spot before base of cleft, leaving a bright clear margin to cleft, progressing to costa outwards, shaping distinct costal spot above base of cleft. In middle of costa of first lobe white margined small spot. Irregular ferruginous and dark brown scales along the costa, dorsum and in both

forewing lobes. Fringes at costa of first lobe white and brown corresponding with the costal markings. Terminal fringes of both lobes grey, interrupted white near anal angle of both lobes and just above anal angle in second lobe. Underside brown.

Hind wings grey-brown. Fringes brown-grey. Underside grey-brown. Venous scales in single dark brown row.

Male genitalia.— Left valve with curved saccular process of 5/9 of valve length. Right valve with small, acute saccular knob, followed by small rod. Uncus moderate, curved, slender. Tegumen bilobed. Juxta broad and stout, with asymmetrical anellus arms. Vinculum narrow, arched. Aedeagus mildly curved, with emarginate tip. Cornutus as small plate of delicate sclerotized ridges.

Female genitalia.— Ostium left lateral from center, slightly oblique, dentate. Antrum funnel-shaped, as long as wide. Ductus bursae short. Bursa copulatrix vesicular, junction with ductus bursae with longitudinal sclerotized ridges, without signum. Ductus seminalis $2\frac{1}{2}$ × bursa copulatrix, curled tip. Lamina ante-vaginalis with trapezoid sclerotized plate. Apophyses anteriores absent. Apophyses posteriores four times palpae anales.

Ecology.— The moth flies in April and September. Hostplants *Eupatorium purpurascens* Sch.Bip., *E. fistulosum* Barratt, *E. purpureum* L., *Epilobium* sp. (Matthews & Lott, 2005)

Distribution.— **Guatemala; Mexico; Panama** (Walsingham, 1915); **Nearctic:** Canada, U.S.A.

Oidaematophorus grisescens (Walsingham, 1880)
(figs 119, 256, 376)

Oidaematophorus grisescens Walsingham, 1880: 34.

Pterophorus acrias Meyrick, 1908: 500.

Pterophorus behrii Grinnell, 1908: 319.

Diagnosis.— Left valve with long saccular process, basally curved to base of valve, and length 13/14th of valve. Right valve with rod-like saccular process with angular tip. The species is characterized by its grey colour and white markings.

Description.— Male, female. Wingspan 24–26 mm. Head appressedly scaled, grey and white mixed. Collar with erected scales. Palpi protracted, a little longer than eye-diameter, slender; upper parts whitish, underparts greyish. Antennae ringed grey and white; shortly ciliated. Thorax and tegulae grey. Abdomen dark and pale grey. Legs grey-brown and white ringed; dark sections before spurs or in terminal parts of segments. Hind legs with two pairs of spurs of unequal length; median spurs longer.

Fore wings cleft from 5/7; colour grey-brown. Four white costal spots in terminal half of wing. Distance between spot 1 and 2 greatest and between 2, 3 and 4 equal. White spot before base of cleft, basally margined by oblique dark brown spot, progressing to costa. Along dorsum of second lobe linear white scaling, white discal spot at 1/3 of dorsum of wing. A faint white line, margined dark brown in first lobe. Dorsal and discal spots are basally margined dark brown. Fringes grey-black, with white dashes at anal angle of first lobe, mid termen and anal angle of second lobe. Underside dark brown, mixed with white scales in tips of both lobes.

Hind wings brown-grey. Fringes brown-grey. Underside pale grey-brown. Creamy-white scales along costa of first lobe. Venous scales black, in double row; costal row longer and progressing into second lobe.

Male genitalia.— Left valve with long saccular process, basally curved to base of valve, and length nearly equal to that of valve. Right valve with rod-like saccular process with angulated tip. Uncus long, slender, curved. Tegumen bilobate. Juxta moderate, with asymmetrical anellus arms. Vinculum arched, narrow. Aedeagus curved. Cor-nuti in shape of a field with thread-like sclerotized structures.

Female genitalia.— Ostium left lateral from center, scalloped rim. Antrum asymmetrical, funnel-shaped, left side longer than right side, extending from center, and arch of spiculae progressing beyond ostium. Ductus bursae 2 × antrum. Bursa copulatrix vesicular, without signum. Ductus seminalis 3 × bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores 1½ × papillae anales.

Ecology.— The moth flies in August. Hostplants *Artemisia tridentata* Nutt., *A. vulgaris* L. (Matthews & Lott, 2005).

Distribution.— **Mexico:** Guerrero (Walsingham, 1915); **Nearctic:** U.S.A.

Oidaematophorus nigrofuscus Gibeaux, 1986
(figs 120, 257)

Oidaematophorus nigrofuscus Gibeaux, 1986: 45.

Material.— Holotype ♂: **Venezuela**, Páramo de Piedras Blancas, 4200 m, 10.ix.1985 (M. Lamotte), gent Gibeaux 2669 (coll. Gibeaux) [examined].

Diagnosis.— Left valve with strong, curved saccular process, of 5/7 of valve length. Right valve without obvious saccular process. The species is characterized by its dark colour and remarkable size.

Description.— Male. Wingspan 39 mm. Head appressedly scaled, dark brown. Frons dark grey-brown. Palpi as long as eye-diameter; dark brown; second segment above mixed with white scales. Antennae dark brown and slightly paler brown ringed; shortly ciliated. Thorax and tegulae dark brown. Hind legs dark brown; proximal pair of spurs of unequal length, distal of equal length.

Fore wing cleft from 3/4; dark brown. Markings black-brown at costa above base of cleft and in first lobe, oblique spot before base of cleft, dorsal spot at 1/5 and spot in discus. Fringes brown-grey, dark at apex of both lobes. Underside dark brown. First lobe mixed with white scales. At costa of first lobe three dark spots and at termen two. Second lobe uniformly dark brown, with some darkening at apex.

Hind wing grey-brown. Fringes reddish grey-brown. Underside dark brown. Venous scales black, in double row, costal row longer than dorsal row.

Male genitalia.— Asymmetrical. The left valve is lanceolate and contains an arched saccular spine, of 5/7 of valve length. The right valve is more elongated and contains centrally a small sclerotized ridge. Uncus slender. Tegumen rather slender. Juxta well developed, slightly asymmetrical. Vinculum narrow. Aedeagus slightly bent. No cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in September. Hostplant unknown.

Distribution.— **Venezuela:** Páramo de Piedros Blancas.

Oidaematophorus phaceliae McDunnough, 1938
(figs 121, 258, 377)

Oidaematophorus phaceliae McDunnough, 1938: 129.

Material.— Holotype ♂: **Canada**, Alberta, Waterton Lake, *Phacelia heterophylla*, 20.vii.1923 (J. McDunnough), gent CNC MIC 886 (CNC) [examined].

Diagnosis.— Left valve with minimal curved saccular process, of 7/12 of valve length. Right valve with two saccular knobs. Well marked species, although not as bright as in *O. eupatorii*.

Description.— Wingspan 21-27 mm. Head appressedly scaled, grey-brown. Collar dark brown. Palpi dark brown, curved up, 1½ × eye-diameter. Antennae ringed ochreous and dark brown, first segment with brush of scales; shortly ciliated. Thorax, tegulae, metathorax and abdomen grey-brown; abdomen laterally with dark brown patches on segments 3 and 4 and entire dorsally on 5. Legs grey-brown. Mid and hind legs with dark brown scale brushes at spur pairs.

Fore wings cleft from 2/3, grey-brown. Markings dark brown: longitudinal spot before base of cleft with angulated terminal margin and between this spot and cleft grey-white, costal spot above base of cleft, at mid-costa of first lobe, narrow longitudinal subterminal line in first lobe, and darkening near apex of first and, less in second lobe. Fringes brown-grey, with white dash near anal region of first lobe; with black basal line between apex and anal region of first, and around apex and along termen of second lobe. Underside dark brown, with white scales along costa which outline the dark spots as seen above.

Hind wings and fringes grey-brown. Underside grey-brown. Venous scales in double row, costal row ferruginous-black and longer, dorsal row ferruginous.

Male genitalia.— Left valve with minimal curved saccular process, of 7/12 of valve length. Right valve with two saccular knobs. Uncus short, straight, basally wide, tip half slender. Tegumen bilobed. Juxta stout, with asymmetrical pair of anelus arms, and a small lateral process. Vinculum arched, rather narrow. Aedeagus straight, cornutus consisting of some sclerotized ridges.

Female genitalia.— Ostium wide, centrally positioned. Antrum as long as wide, slightly tapering. Ductus bursae short, with sclerite. Bursa copulatrix vesicular, rostral half with delicate spiculae, cranial half with sclerotized ridges. Ductus seminalis 2½ × papillae anales, in caudal part delicate spiculae, cranial 2/3 twisted in circle. Apophyses anteriores short, blunt. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in July. Hostplants *Hydrophyllum virginianum* L., *Phacelia californica* Cham., *P. heterophylla* Pursh, *P. imbricata* Greene, *P. malvifolia* Cham., and *P. ramosissima* Douglas ex Lehm. (Matthews & Lott, 2005)

Distribution.— **Mexico:** Baja California; **Nearctic:** Canada, U.S.A.

Oidaematophorus pseudotrachyphloeus spec. nov.
(figs 122, 259, 378)

Material.— Holotype ♂: **Peru**, Lima, Res Nac. de Lachay, 11°21'S 77°21'W, 18.xi.1998 (B Landry), gent CG 4829 (MHNG). Paratypes: 1 ♀, same data, gent CG 4828 (CG); 1 ♀, **Ecuador**, Gauchayacu, ix-x.1926 (Vorbeck), gent CG 4291 (ZMUC); 1 ♂, **Ecuador**, Loja, Rd. Loja-Piñas km 58, 2030 m, 21.iv.1982 (N. Veneditoff), gent CG 5932 (AME/MGCL). 1 ♀, **Peru**, Hcda Taulis, 6°50'S 79°10'W, 20-30.iv.1954 (Förster), gent CG 5659 (ZSM); 1 ♀, **Argentina**, Cordoba, Huerta Grande, 1000 m, v.1959 (Förster), gent CG 5651 (ZSM).

Diagnosis.— The species resembles *O. trachyphloeus* Meyrick very much but differs by the less mottled scaling of the fore wing, in the male by the more strongly developed saccular process in left valve and less developed anellus arms, and in the female by the presence of irregularly shaped, asymmetrical apophyses anteriores.

Description.— Male, female. Wingspan 22 mm. Head appressedly scaled, grey-brown. Collar and frons dark brown. Palpi curved up, $1\frac{1}{2} \times$ eye-diameter, dark grey-brown. Antennae shortly ciliated, ringed dark brown and grey-brown; the first segment thickened with dark brown scales. Thorax and tegulae dark ferruginous-brown, the rostral margin of the tegulae with grey scales. Metathorax dark ferruginous-brown. Hind legs grey, with rings of dark grey scales at base of spur pairs; and tarsal segments grey, terminal half dark grey. The spur pairs of unequal length, outer spurs half as long as inner spurs.

Fore wing cleft from 2/3, dark ferruginous grey-brown. Before base of cleft orange scale tuft. Markings black-brown: diffuse speckling on wing, discal spot; spot at end of cell; chevron-shaped spot at base of cleft; costal spots in first lobe: at base of the cleft, at 2/5 and 3/5; indistinct spot in anal region of first lobe. The field terminal of the chevron-shaped spot in both lobes of paler colour. Fringes brown-grey; at apex of both lobes darker grey fringe line, extending towards anal region, but gradually losing its distinction towards anal region. Underside brown-grey. The lobes slightly paler in colour.

Hind wing and fringes brown-grey. Underside brown-grey. Venous scales black-brown, in double row, costal row longer.

Male genitalia.— Left valve with stout, curved saccular process, basally curved towards base of valve, of 4/7 of valve length; tip of valve with small knob. Right valve slender, with knob at tip, and saccular rod with acute shape. Uncus short, curved. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms, with wide aspect. Vinculum arched, moderately wide. Aedeagus slightly curved. Cornutus consisting of some sclerotized ridges.

Female genitalia.— Ostium centrally positioned, rounded. Antrum wide, gradually funneling, as long as wide; Terminal half delicately sclerotized, junction with ductus bursae with two spiculated plates. Ductus bursae short. Bursa copulatrix vesicular, without signum. Ductus seminalis 2 × length of bursa copulatrix. Junction between bursa copulatrix and ductus seminalis shows a group of sclerotized ridges. Apophyses anteriores asymmetrical; left slender and just over papillae anales; right irregularly thick, waved appearance, almost 3 × the left apophyses. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in April and May, and again in September to November. Hostplant unknown.

Distribution.— **Argentina:** Cordoba; **Ecuador:** Gauchayacu, Loja; **Peru:** Lima.

Etymology.— The name reflects the resemblance to *O. trachyphloeus*, and the confusion which may arise on superficial and external examination.

Oidaematophorus trachyphloeus (Meyrick, 1926)
(figs 123, 260, 379)

Pterophorus trachyphloeus Meyrick, 1926: 300.

Material.— Lectotype ♂ (designated here): **Costa Rica**, Palo Verde, 1630 m, 1920 (BMNH) [examined].

Diagnosis.— See *O. pseudotrachyphloeus*.

Description.— Male, female. Wingspan 23-24 mm. Head appressedly scaled, grey-brown. Palpi grey-brown, second segment curved up and third segment small, protruding, $1\frac{1}{2}$ × eye-diameter. Antennae ringed pale and dark brown, shortly ciliated. Thorax and tegulae dark brown. Scales of mesothorax greyish mixed. Abdomen dark brown.

Fore wings cleft from 3/5, colour mottled grey-brown and ochreous. Orange scale tuft basad of cleft. Markings appearing as darkening of colour, in discus and obliquely before base of cleft. Fringes grey. Underside brown with pale spot at base of cleft.

Hind wings and fringes brown-grey. Underside brown. Venous scales in double row, black, costal row longer than dorsal row.

Male genitalia.— Left valve with knob on tip; saccular process long, slender, basally curved towards base of valve, length 2/3 of valve. Right valve with knob at tip; saccular process as small rod, bluntly tipped. Uncus moderate, curved, slender. Tegumen bilobed. Juxta with stout basal half, anellus arms asymmetrical and less prominently developed as in previous species. Aedeagus mildly curved, blunt tip. Cornuti as small group of sclerotized ridges.

Female genitalia.— Ostium centrally positioned, straight. Antrum funnel-shaped, spiculated. Ductus bursae rather narrow, short. Bursa copulatrix small, vesicular, without signum. Ductus seminalis 3 × bursa copulatrix, basally with large twist, with filamentous terminus. Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in May and September. Hostplant unknown.

Distribution.— **Costa Rica; Guatemala; Panama.**

Emmelina Tutt, 1905.

Emmelina Tutt, 1905a: 37.— Type species: *Phalaena Alucita monodactyla* Linneaus, 1758, by original designation.

Description.— Head appressedly scaled. Frons smooth. Palpi slender, erect, just over eye-diameter. Second and 3rd abdominal segments extended, long. Medial spur of proximal pair of hind legs, 2 × longer than lateral spur.

Fore wing with both lobes with acute top. Venation: R1 absent; R2, R3, R4 and R5 separate; Cu1 from beyond angle of cell; Cu2 from cell.

Male genitalia.— Extremely asymmetrical, with numerous complex processes from sacculus, cucullus or originating centrally in valvae. Tegumen arched; uncus

well-developed. Juxta arched. Vinculum poorly developed. Aedeagus slightly curved, without cornutus.

Female genitalia.— Ostium and antrum complexly fused on margin of 7th tergite; asymmetrical in shape and positioned. Ductus bursae and ductus seminalis separate. In ductus bursae a small sclerotized double ridge. Bursa copulatrix without signum.

Ecology.— The species seem to be polyphagous. Representatives of the genera *Convolvulus* and *Calystegia* are preferred.

Distribution.— Nearly cosmopolitan.

Emmelina aethes (Walsingham, 1915)
(figs 124, 261, 380)

Pterophorus aethes Walsingham, 1915: 447.

Material.— Holotype ♂: Mexico, Veracruz, Jalapa, 1395 m, 1887 (W. Schaus) (BMNH) [examined].

Diagnosis.— Left valve with stout, strongly curved saccular process. Right valve with irregular shape of tip. Faint oblique fore wing spot above base of cleft.

Description.— Male, female. Wingspan 20-22 mm. Head appressedly scaled, ferruginous-ochreous. Collar brown. Frons ferruginous-ochreous. Palpi one and one-half times eye-diameter, slender, protruding, ferruginous-ochreous. Antennae ochreous, with sparse ferruginous scales, shortly ciliated. Thorax, tegulae and metathorax ochreous-ferruginous.

Fore wings cleft from 2/3, brown-grey. Markings dark brown, consisting of small discal spot, oblique spot above base of cleft and scattered scales on the entire wing. Fringes brown-grey. Underside grey-brown, with costal brown spot above base of cleft.

Hind wings and fringes grey-brown. Underside grey-brown. Venous scales black, in double row; costal row shorter than dorsal row.

Male genitalia.— Left valve with stout, strongly curved saccular process, originating from behind 1/3 of valve. Right valve with irregular shaped apex, with tip bent inwards and numerous sclerotized ridges. Uncus rather short, slender, curved. Tegumen wide, apparently simple. Juxta basally rather blunt and stout, anellus arms asymmetrical, long and slender. Vinculum narrow, almost straight. Aedeagus long, slender, minimally curved. No cornutus.

Female genitalia.— Ostium centrally positioned, mildly excavated. Antrum funnel-shaped, basally with a pair of longitudinal sclerites. Ductus bursa short, slender. Bursa copulatrix small, vesicular, without signum. Ductus seminalis 2 × bursa copulatrix, vesicular. Apophyses anteriores absent. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in September. Hostplant unknown.

Distribution.— Mexico: Guerrero, Veracruz.

Emmelina buscki (Barnes & Lindsey, 1921).
(figs 125, 262, 381)

Adaina buscki Barnes & Lindsey, 1921: 370.

Material.— Holotype ♀: (U.S.A.), Florida, Coconut Grove, no date (E.A. Schwartz) (USNN).

Diagnosis.— Left valve with curved saccular spine as in *E. aethes*, but differing by the rounded regular shape of the right valve with saccular process in valve shaped as two spines facing one another.

Description.— Wingspan 23 mm. Head appressedly scaled, creamy white, densely scaled pale brown. Frons ferruginous, collar with erect scales. Palpi ochreous-white, slender, protruding, $1\frac{1}{2}$ × eye-diameter. Thorax, tegulae, metathorax and first segments of abdomen ochreous-brown. Abdomen pale ochreous brown-white, with small brown dorsal spot at third segment. Mid legs with two scale brushes and pair of spurs of unequal length.

Fore wings cleft from 3/5, pale ochreous-brown. Along costa and in discus dark brown scales. Oblique spot before base of cleft; oblique spot in basal 1/3 of first lobe, dark brown along costa; small dark brown spots at 2/3 of costa, apex and anal region of first lobe; longitudinal darkening near apex and small dark spot at anal region of second lobe. Fringes ochreous-brown. Underside brown, with dark spots as above.

Hind wings and fringes brown-grey. Underside brown. Venous scales dark ferruginous- brown, in double row. Costal row longer than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve with conical shape. Sacculus with curved spine of half valve's length, from center of valve. Right valve with saccular rim with lobed aspect and thorn at 2/3, and cucullus with central spine. Uncus slender, moderate. Tegumen bilobate. Juxta asymmetrical, stout anellus arms. Vinculum arched. Aedeagus curved, without cornutus.

Female genitalia.— Ostium centrally positioned, rounded. Antrum left lateral in ostium, narrow, excavated. Gradual continuation from antrum, ductus bursae and into bursa copulatrix. Bursa copulatrix simple, vesicular, without signum. Apophyses anteriores absent. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in February, August, September and December. Host-plant *Ipomoea indica* (Burm.f.) Merr. (Matthews, 1989).

Distribution.— **Colombia:** Medellin; **Costa Rica:** Guanacaste; **Jamaica;** **Mexico:** Morelos; **Nearctic:** U.S.A.

Emmelina jason (Meyrick, 1930)
(figs 126, 263)

Pterophorus jason Meyrick, 1930: 568.

Material.— Holotype ♂: **Brazil**, Queluz, no date (P. Germain), gent BM 18862 (BMNH) [examined].

Diagnosis.— Left valve with complex saccular structure in tip half of valve, not seen in any other species. Right valve with complex saccular process in tip half of valve.

Description after Meyrick, 1930: “♂. 20 mm. head, palpi, thorax whitish, tips of tegulae sprinkled fuscous. Abdomen whitish, a double dorsal series of dark fuscous streaks.

Fore wings first lobe rather narrow, pointed, second equally broad at base, slightly dilated, termen faintly sinuate, very oblique; light greyish-ochreous, with whitish reflections; costa suffusedly irrorated dark fuscous from base to 3/5; an indistinct fuscous spot in disc at 1/3; a trapezoid dark fuscous spot near before cleft, base of cleft whitish; an undefined elongate spot of fuscous suffusion on costa beyond cleft, preceded and

followed by whitish suffusion; some dark fuscous irroration along fold; a rather dark fuscous elongate mark on lower edge of first lobe towards apex; apex of first lobe and terminal fascia of second suffused rather dark fuscous; cilia light greyish-ochreous.

Hind wings grey; cilia light grey."

Male genitalia.— Left valve with complex saccular structure in apical half of valve: spine on outer margin of valve, followed by three longitudinal structures fusing into blunt, rectangular process, and a transverse spine of 4/5 of valve width. Right valve with complex saccular process in tip half of valve. Uncus short, straight, slender. Tegumen bilobed. Juxta broad, with symmetrical anellus arms. Vinculum centrally extended and progressing into long blunt-tipped spine. Aedeagus simple, straight. No cornutus.

Female genitalia.— Unknown.

Ecology.— Flight period unknown. Hostplant unknown.

Distribution.— **Brazil:** Mato Grosso.

Emmelina monodactyla (Linnaeus, 1758)
(figs 127, 264, 382)

Phalaena Alucita monodactyla Linnaeus, 1758: 542.

Phalaena bidactyla Hochenwarth, 1785: 336.

Alucita pterodactyla Hübner, [1805], nec Linnaeus, 1758.

Pterophorus flaveodactylus Amary, 1840: 84.

Pterophorus cineridactylus Fitch, 1855: 848.

Pterophorus naevosidactylus Fitch, 1855: 849.

Pterophorus impersonalis Walker, 1864: 942.

Pterophorus pergracilidactylus Packard, 1873: 265.

Pterophorus barberi Dyar, 1903: 228.

Pterophorus pictipennis Grinnell, 1908: 320.

Pterophorus monodactylus f. *rufa* Dufrane, 1960: 6.

Material.— Holotype ♀ of *Pterophorus impersonalis* Walker: **Venezuela**, ix.1847, gent BM 18460 (BMNH) [examined].

Diagnosis.— This extremely variable species, which has a worldwide distribution, is best characterized by its peculiar and complex genital structure (see illustration).

Description.— Male, female. Wingspan 18–27 mm. Head appressedly scaled ferruginous-white, dark brown. Palpi slender, as long as eye-diameter. Antennae faintly ringed, grey-brown and white, shortly ciliated. Thorax, tegulae and metathorax ochreous to ferruginous-white. Abdomen pale brown white, with faint grey-white longitudinal dorsal lines. At end of segments, dorsally, small dark spot. Legs ferruginous to ochreous-white. Hind legs with two pairs of spurs, median spur $1\frac{1}{2}$ × to two times longer than lateral spur.

Fore wing cleft from 3/5, pale ferruginous, mixed with large number of grey-white scales. Markings dark brown: small longitudinal spot near apex; centrally at costa of first lobe small dark spot and two distinct spots, subapical and apical at dorsal margin of first lobe; in termen of second lobe three spots, near anal angle, apex and almost centrally placed. Diffuse dark brown scaling, with higher intensity near costa and along dorsum of wing. The intensity of white scales is more pronounced in distal parts of two lobes. Fringes brown-grey. Underside ferruginous brown, with bleaching of apical region of first lobe.

Hind wings brown-grey. Fringes brown-grey. Underside ferruginous grey-brown. Venous scales dark brown to ferruginous- brown, in double row, costal row progressing into second lobe.

Variation.— The species is highly variable in its colour, from pale grey-white with faint markings to specimens with dark ferruginous-brown. Also the intensity of markings may vary, and there is considerable variation in size.

Male genitalia.— Left valve rounded and rather wide, with a complex saccular process structure, in which three parts can be recognized: two of these consist of slender arms, originating at 1/3 of valve-length; the longer reaches towards tip of valve and the shorter has only half of its length; third segment originates rather narrow, gradually widening and branching into small slender arm and longer arm curved in "S"-shape. Right valve rather lanceolate, pointed towards its top; at 2/3 of valve-length slender saccular arm, slightly shorter than tip of valve. Uncus moderated, slender. Tegumen bilobed, rather slender. Juxta asymmetrical. Vinculum rather wide, arched. Aedeagus slightly curved. No cornuti.

Female genitalia.— Antrum left central placed with simple ostium. Beneath the ostium two small sclerotized plates. Beside ostium is opening of ductus seminalis, giving distal margin of 7th sternite asymmetrical bulged appearance. Ductus bursae is almost straight and slender, progressing into vesicular bursa copulatrix; without signum. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in February and September. Recorded hostplants are: *Convolvulus arvensis* L., *C. microphyllus* Sieber ex Spreng., *C. cantabrica* L., *C. althaeoides* L., *C. floridus* L., *C. subacaulis* (Hook. & Arn.) Greene, *Calystegia soldanella* (L.) R. Br., *C. sepium* (L.) R. Br., *C. spithamea* (L.) R.Br., *Chenopodium* spec., *Atriplex* spec., *Ipomoea purpurea* (L.) Roth., *I. batatas* L., *I. hispida* Parodi, *I. niger*, *Datura stramonium* L.

Parasites.— *Oxynops anthracinus* (Bigot) (Diptera, Tachinidae).

Phaeogenes (= *Oronotus*) *vincibilis* (Cresson) (Hymenoptera, Ichneumonidae); *Cotesia* spec., *Apanteles lacteicolor* Viereck (Hym., Braconidae).

Distribution.— **Costa Rica; Jamaica; Mexico; Venezuela; Nearctic:** Canada, U.S.A. **Palaearctic:** Iceland, Ireland, England, Netherlands, Belgium, Luxemburg, France, Spain, Portugal, Canary Islands, Madeira, Azores Islands, Morocco, Algeria, Tunisia, Libya, Norway, Sweden, Finland, Denmark, Germany, Switzerland, Lichtenstein, Czechia, Slovakia, Italy, Balearic Islands, Corse, Sardinia, Sicily, Malta, Estland, Latvia, Lithuania, Poland, Austria, Hungary, Slovenia, Croatia, Bosnia-Herzegovina, Macedonia, Serbia, Albania, Romania, Bulgaria, Greece, Crete, Cyprus, Russia, Belorussia, Moldavia, Ukraine, Armenia, Turkey, Lebanon, Israel, Egypt, Syria, Jordan, Saudi Arabia, Yemen, U.A.E, Iraq, Iran, Kazakhstan, Kirgisistan, Turkmenistan, Uzbekistan, Tadzhikistan, Afghanistan, Pakistan, China; **Oriental:** India, Philippines; **Afrotropical:** Kenya.

Emmelina suspiciosus (Meyrick, 1921)
(figs 128, 265, 383)

Pterophorus suspiciosus Meyrick, 1921: 422.

Material.— Lectotype ♂ (designated here): **Ecuador**, Huigra, 1370 m, vi.1914 (Parish), gent BM 18177 (BMNH) [examined].

Diagnosis.— The species is characterized by the male genital structures with complicated saccular spines and processes in both valves (see illustration).

Description.— Wingspan 24 mm. Head pale brown, between base of antennae whitish. Collar dark brown. Palpi curved up, greyish, $1\frac{1}{2} \times$ eye-diameter. Antennae greyish, shortly ciliated. Tegulae greyish-brown. Hind legs ochreous-white, with two pairs of spurs, median spurs longer than lateral spurs.

Fore wings cleft from 3/5, brownish-grey. Markings dark brown: discal spot, spot just before base of cleft, scattered costal scales in basal half of wing, in first lobe costal streak just beyond base of cleft and followed by small dot, spots apical in both lobes, at anal region of first lobe, and at 2/3 of termen of second lobe. Fringes grey. Underside brown, with white scales along costa, and dark brown spots as above.

Hind wings and fringes brownish-grey. Underside brown, in third lobe mixed with white scales. Venous scales in double row, ferruginous, costal row longer.

Male genitalia.— Left valve with waved saccular spine from 1/4 of valve, basally with small thorn; at mid saccular margin curved spine, as long as width of valve. Right valve with cucullar spine at 1/3; saccular knob in center of valve; apex of valve folded inward. Uncus slender, almost straight. Tegumen bilobate. Juxta slender, deeply forked by anellus arms. Vinculum arched, with long and blunt saccus. Aedeagus a waved shape, centrally with rows of minute spiculae.

Female genitalia.— Ostium in mid-line, with corona-like sclerotisation. Antrum narrow, four times longer than wide. Ductus bursae short, narrow. Bursa copulatrix vesicular, without signum. Ductus seminalis distally as slender tube, proximally vesicular. Apophyses anteriores double-pointed on both sides. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies in January and June. Hostplant unknown.

Distribution.— **Ecuador:** Azuay, Huigra.

Adaina Tutt, 1905.

Adaina Tutt, 1905: 37.— Type species: *Alucita microdactyla* Hübner, [1813]: pl. 5, fig. 26, 27, by original designation.

Paravinculia Cäpuse, 1987: 185.— Type species: *Paravinculia bolivari* Cäpuse, 1987, by original designation and monotypy. *Syn. n.*

Description.— Head appressedly scaled. Frons smooth, not protruding. Palpi slender, protruding, length just over eye-diameter.

Fore wings with markings in shape of small punctations along margin of wing. Apex of both lobes acute. Veins R1 absent; R2, R3, R4 and R5 present, R3 and R4 stalked; Cu1 and Cu2 present; Cu1 from just beyond cell; Cu2 from cell.

Hind wings with two veins in third lobe.

Male genitalia.— Valvae asymmetrical, with distinct brush of “hairs” from base of both valvae. In left valve saccular spine. In right valve saccular thorn, or rod. Uncus as long as tegumen, tapering towards top. Tegumen arched. Vinculum narrow, arched. Aedeagus slightly curved, with cornutus.

Female genitalia.— Ostium and antrum laterally positioned. Antrum small. In antrum part small sclerotized ridges. Lamina ante-vaginalis poorly developed, narrow. Ductus seminalis originating from antrum area. Bursa copulatrix vesicular, signum absent or present.

Ecology.— The larva of *A. microdactyla* (Hübner) overwinters as stem-borer in *Eupatorium cannabinum* L.

Distribution.— Cosmopolitan.

Remarks.— The structure named “paravinculum” by Cåpuse (1987), turns out to be a modified shape of the vinculum. Gielis (1991) has named this shape of the vinculum “antisaccus”. This somewhat extended proportion of the vinculum is pronouncedly present in a number of species in the genus *Adaina* and *Lioptilodes*, and for this reason not genus specific. The remaining characteristics in the genus *Paravinculia* are those seen in the genus *Adaina*, and for this reason I have come to the conclusion that the genus *Paravinculia* Cåpuse, 1987 is a synonym of *Adaina* Tutt, 1905.

Adaina costarica Gielis, 1992

(figs 129, 266, 384)

Adaina costarica Gielis, 1992: 387.

Material.— Holotype ♂: **Costa Rica**, Turrialba, 600 m, vii.1981 (V.O. Becker) (Becker nr. 45996). Paratypes: 3 ♂♂, 3 ♀♀, **Costa Rica**, Turrialba, 600 m, vii.1981, gent CG 6155 ♂, 6159 ♀, 6165 ♀ (Becker, CG).

Diagnosis.— The species is characterized by a distinct spot in center of first fore wing lobe and a spot at base of cleft, combined with a distinct small saccular process in left valve of male genitalia; and bursa copulatrix without signum in female genitalia.

Description.— Male, female. Wingspan 13–16 mm. Head appressedly scaled, ochreous-white. Thoracic half of vertex pale brown. Face pale ochreous-brown. Palpi ochreous-white, slender, protruding, as long as eye diameter. Antennae pale ochreous-white, shortly ciliated. Thorax, tegulae, metathorax and abdomen yellow-white. On dorsum of abdomen two narrow, longitudinal, brown lines. Hind legs greyish white. Spur pairs of equal length.

Fore wings cleft from 3/5, colour yellow-white. Markings brown: spot at base of cleft extending at dorsum of first lobe, costal spot in first lobe just beyond base of cleft, diffuse scaling in center of first lobe and spots at anal region of both fore wing lobes. Fringes yellow-white, brown in anal region of first lobe and around base of cleft. Underside pale brown, yellowish-mixed at costa of first lobe.

Hind wings grey-brown. Fringes grey. Underside pale brown. Venous scales dark ferruginous, in double row, costal row longer than and more expressed than dorsal row.

Male genitalia.— Valvae asymmetrical. Left valve with longitudinal, slightly lanceolate shape. Saccular process curved, short, length is shorter than width of valve and less extended than in *parainvida*. Right valve has small saccular knob. Uncus moderate, slender. Tegumen slender. Vinculum arched. Aedeagus slender and slightly curved.

Female genitalia.— Ostium excavated, left lateral positioned in abdomen. Antrum gradually narrowing with “V”-shaped ostium. Ductus bursae slender. Bursa copulatrix vesicular, with minute spiculae on surface, but without signum. Ductus seminalis slender and longer than bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in July. Hostplant unknown.

Distribution.— **Costa Rica**.

Adaina simplicius (Grossbeck, 1917)
 (figs 130, 267, 385)

Pterophorus simplicius Grossbeck, 1917: 136.

Adaina naiadopa Meyrick 1931: 277.

Material.— Holotype of *Pterophorus simplicius* ♂: U.S.A., Florida, Everglades, 10.iv.(19)12 (AMNH). Lectotype of *Adaina naiadopa* ♂: Paraguay, Makthlawaiga, v.1927 (C.S.C.), gent BM 18443 (BMNH) [examined].

Diagnosis.— Male in left valve with short, straight saccular spine; right valve without obvious saccular process. Female with distinct hooked apophyses anteriores on lamina ante-vaginalis. Moth with three dots on fore wing, and brown underside of this wing.

Description.— Male, female. Wingspan 18-20 mm. Head appressedly scaled, collar and vertex near collar pale brown, rest of head greyish-white. Palpi slender, protruding, ferruginous-white. Antennae grey-white, shortly ciliated. Thorax and tegulae pale ferruginous-white. Metathorax white. Abdomen pale brown with indistinct darker longitudinal stripes.

Forewings cleft from 2/3, pale grey-white. Basal small ferruginous line, and ferruginous scaling at costa, spot at base of cleft, at 2/3 of dorsum of first lobe, and apical in second lobe. Fringes pale grey-white. Underside in basal half ferruginous, paling up toward termen.

Hind wings very pale brown-white. Fringes grey-white. Underside grey-white. Veinous scales ferruginous, in double row, costal row longer than dorsal row.

Male genitalia.— Left valve with short, broad-based, saccular spine. Right valve without noticeable saccular process. Uncus as long as tegumen. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum arched. Aedeagus curved, slender, without cornutus.

Female genitalia.— Ostium centrally positioned, flat. Antrum funnel shaped, with two small, longitudinal sclerites. Ductus bursae as long as antrum, slender. Bursa copulatrix vesicular, without signum. Ductus seminalis almost 2 × bursa copulatrix, vesicular, acute ending. Lamina ante-vaginalis with lateral hooked apophyses anteriores. Apophyses posteriores three and a half times papillae anales.

Ecology.— The moth flies in February, May, July and November. Hostplants: *Carphephorus odoratissimus* (J.F. Gmel.) Herb., *C. paniculatus* (J.F. Gmel.) Herb., *Conoclinium coelestinum* (L.), and *Pluchea odorata* (L.) (Matthews & Lott, 2005).

Distribution.— Brazil: Mato Grosso, Rio Grande do Sul; Costa Rica; Ecuador: Pichincha; Paraguay; Puerto Rico; Nearctic: U.S.A.

Remarks.— Recent breeding of specimens matched to the type-specimen of *A. simplicius* revealed a difference in the male genitalia with the species so far recognized as *A. naiadopa*. In the females no differences were noticed. This discrepancy needs further investigation. It is possible *A. naiadopa* needs to be considered to be a valid species again (Matthews & Maharajh, 2009).

Adaina excreta Meyrick, 1930
 (figs 131, 268, 386)

Adaina excreta Meyrick, 1930: 568.

Material.— Holotype ♂: **Peru**, Carabaya, Agualani, dry season, 2750 m, vi.1905 (Ockenden), gent BM 18455 (BMNH) [examined].

Diagnosis.— Left valve with wavy saccular spine; right valve with simple saccular lobe. The species has yellow-ochreous colour, and a few spots on fore wings.

Description.— Male, female. Wingspan 18 mm. Head appressedly scaled, some erect scales at collar. Collar and face pale brown. Between bases of antennae brown-white. Palpi slender, as long as eye-diameter, above pale brown, below grey-white. Antennae grey-white shortly ciliated. Thorax, tegulae, metathorax and abdomen pale brown-ochreous. Hind legs with two pairs of spurs, of which proximal pair of unequal length.

Fore wings cleft from 2/3, yellow-ochreous toward dorsum grey-mixed. Markings dark brown: small spot at base of cleft, costal spot at 1/4 of first lobe and some darkening near anal region of first lobe. Fringes grey. Underside dark brown.

Hind wings brown-grey. Fringes grey. Underside grey-brown. Venous scales orange-ferruginous, in double row. Dorsal row very poorly developed.

Male genitalia.— Left valve rounded with waved saccular spine at less than 1/3 of valve length. Right valve elongated with small saccular lobe. Uncus moderate, slender. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum arched. Aedeagus arched with a plate-like cornutus.

Female genitalia.— Ostium centrally positioned, deeply excavated, tridental shaped. Antrum short. Ductus bursae slender, 2 × longer than wide. Bursa copulatrix a distally slender duct, cranially vesicular, without signum. Ductus seminalis 2 × bursa copulatrix, slender. Apophyses anteriores simple blunt hooks. Apophyses posteriores three and a half times papillae anales.

Ecology.— The moth flies in January, June, October and November. Hostplant unknown.

Distribution.— **Argentina**: Salta; **Ecuador**: Azuay, Carchi, Morona-Santiago; **Peru**: Carabaya.

Adaina parainvida Gielis, 1992
(figs 132, 269, 387)

Adaina parainvida Gielis, 1992: 386.

Material.— Holotype ♂: **Costa Rica**, Turrialba, 600 m, vii.1981 (V.O. Becker), (Becker nr. 45995). Paratypes 3 ♂♂, 4 ♀♀: **Costa Rica**, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6141 (Becker, CG).

Diagnosis.— Left valve with waved and curved saccular process. Right valve with small saccular process. The species is characterized by distinct blackish spot on dorsum of fifth abdominal segment.

Description.— Male, female. Wingspan 11-13 mm. Head appressedly scaled, ochreous-white. Collar and thoracic half of vertex pale brown, with numerous erect scales. Palpi slender, protruding, ochreous-white, as long as eye diameter. Antennae ochreous-white, shortly ciliated. Thorax, tegulae and metathorax ochreous-white, with a distinct brown margin along abdominal junction. Abdomen ochreous-white, with distinct dark dorsal blackish spot on dorsum of fifth segment. Hind legs ochreous-white, with faint brown colour at end of the tibial and tarsal segments. Two spur pairs of unequal length.

Fore wings cleft from 3/5, ochreous-white, with diffuse brown scaling. Before base of cleft small spot, best expressed at dorsal half of wing, but faintly progressing to costa and dorsum. At costa of first lobe brown spots at 1/4 and 3/4, and some darkening at apex and mid dorsum of second lobe. Fringes grey-brown, with dark brown patches at anal regions of both lobes, and at mid dorsum of both lobes. Underside grey-brown with faint brown scales as above and two costal spot of first lobe pronounced.

Hind wings greyish. Fringes grey-brown. Underside grey-brown. Venous scales in double row, costal row pronounced and longer than dorsal row.

Male genitalia.— Left valve with almost parallel margins and a rounded top. The saccular process slender, curved, and as long as the width of valve. Right valve more slender-shaped, with minute saccular spine. Uncus moderate, slender. Tegumen slender. Juxta compact and stout, with asymmetrical anellus arms. Vinculum arched. Aedeagus slender, slightly curved.

Female genitalia.— Ostium excavated, left lateral positioned in abdomen. Antrum semicircular, moderately sclerotized. Ductus bursae as long as the diameter of bursa copulatrix. Bursa copulatrix vesicular, covered with numerous spines, which are also grouped into two signum plates. Ductus seminalis originates close to antrum, ductus seminalis long and slender, two times length of bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores 2 × longer than papillae anales.

Ecology.— The moth flies in July. Hostplant unknown.

Distribution.— **Costa Rica; Jamaica.**

Adaina atahualpa spec. nov.
(figs 133, 270, 388)

Material.— Holotype ♂: **Ecuador**, Napo, 15 km SE Cosanga, Cocodrilo, 0 38°56' S 77 47'34" W, 1850 m, 7.x.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5251 (CG). Paratypes: 1 ♂, 1 ♀, same locality and date; 1 ♂, 2 ♀ ♀, same locality, 30.ix.2002; 5 ♂ ♂, 1 ♀, same locality, 1.x.2002, gent CG 5258 (♀); 1 ♂, same locality, 25.x.2002; 1 ♂, same locality, 27.x.2002; 2 ♀ ♀, **Ecuador**, Napo, 12 km SSE Cosanga, 0 37°26' S 77 48'51" W, 2120 m, 24.x.2002 (C. & F.K. Gielis & V. Pelz); 2 ♂ ♂, 4 ♀ ♀, **Ecuador**, Napo, 10 km SSE Cosanga, 0 37°13' S 77 49'29" W, 2180 m, 23.x.2002 (C. & F.K. Gielis & V. Pelz); 1 ♂, 1 ♀, **Ecuador**, Tungurahue, 20 km E Baños, San Francisco, 1 24'39" S 78 14'23" W, 1290 m, 26.ix.2002 (C. & F.K. Gielis & V. Pelz); 1 ♂, **Ecuador**, Zamora-Chinchipe, 22 km E Loja, PN Podocarpus, San Francisco Ranger Stt, 3 59'15" S 79 5'37" W, 2200 m, 9.x.2002 (C. & F.K. Gielis & V. Pelz) (CG); 2 ♂ ♂, **Colombia**, Medellin, La Estrella, 1700 m, 15-18.v.1963, 22-24.V.1963 (B. Schnable), gent CG 5675 (ZSM, CG).

Diagnosis.— Left valve with straight, acutely tipped, saccular process. Right valve with long and slender saccular rod.

Description.— Male, female. Wingspan 12-15 mm. Head apressedly scaled; dorsally brown, between base of antennae ochreous, and ventrally grey-white. Palpi protruding, short, ochreous-white, as long as eye-diameter. Antennae longitudinally marked pale brown and grey-ochreous. Hind legs ochreous-white, with some brown scales near joints and at base of spur pairs. Spur pairs of equal length, but proximal pair longer than distal pair.

Fore wings cleft from 9/17, ochreous-white. Markings pale brown: faint costal streak; costal spots in first lobe at 1/3, 2/3, and subapical; in discal cell; around base of cleft; in middle of first lobe; at anal angle of both lobes; and faintly scaled at dorsum of

wing and lobes. Fringes grey-brown, with small dash at anal angle of first lobe. Underside brown. Along costa dark brown line as far as base of the cleft, dorsally from this brown costal line an ochreous line. In first lobe costal spot at 1/4 and spot at anal angle.

Hind wings and fringes grey-brown. Underside pale brown. Venous scales ferruginous-brown, in double row, costal row the longer.

Male genitalia.— Left valve with acutely ending straight saccular spine. Right valve with slender long saccular spine. Uncus moderately long, slender. Tegumen bilobed. Juxta with asymmetrical short anellus arms. Vinculum narrow, simple. Aedeagus almost straight, with split tip. No cornutus.

Female genitalia.— Ostium in left side of abdomen, Antrum funnel-shaped, with two small lateral sclerites. Ductus bursae short. Bursa copulatrix vesicular, covered with numerous spiculae. Ductus seminalis narrow and extended. Apophyses anteriores absent. Apophyses posteriores long and slender, 2 × papillae anales. Papillae analles rather big.

Ecology.— The moth flies in May, September and October. The hostplant is unknown.

Distribution.— **Colombia:** Medellin; **Ecuador:** Napo, Tungurahue, Zamora-Chinchipe.

Etymology.— The species is named after the Inca prince: Atahualpa.

Adaina beckeri Gielis, 1992

(figs 134, 271, 389)

Adaina beckeri Gielis, 1992: 382.

Material.— Holotype ♂: **Costa Rica**, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6156 (Becker nr. 45996).

Diagnosis.— Left valve with gradually tapering, waved saccular process, of 2/5 of valve length. Right valve with long, slender saccular process.

Description.— Male. Wingspan 14 mm. Head appressedly scaled, pale brown. Palpi slender, as long as the eye-diameter, yellow-white. Antennae shortly ciliated, yellow-white. Thorax greasy, tegulae yellow-white. Hind legs yellow-white, with two pairs of spurs. Median spurs are slightly longer than lateral spurs.

Fore wings cleft from 4/7, yellow-white. Markings brown: spot around base of cleft and most pronounced beyond base of cleft, two spots at costa of first lobe at 1/4 and 1/2, apical spot in first lobe and small spot at region of anal angle. In center of first lobe a dense brown-scaled area. Fringes yellow-white. Underside brown, changing to yellowish towards apex of both lobes.

Hind wings and fringes brown-grey. Underside brown. Venous scales ferruginous, in double row. Costal row denser and longer than dorsal row.

Male genitalia.— Left valve with curved saccular spine, turning gradually narrower, with strongly curved apex. Right valve with slightly curved, long saccular process; this process has wide basal half and a narrow distal half. Uncus moderate, rather short. Tegumen bilobate, rather wide. Juxta with asymmetrical anellus arms. Vinculum arched. Aedeagus slightly curved, with an oblique top. No cornutus.

Female genitalia.— Ostium left lateral positioned, oblique. Antrum tubular, as long as wide. Ductus bursae gradually widening. Bursa copulatrix vesicular, without signum. Ductus seminalis slender, a little longer than bursa copulatrix, vesicular. Apophyses anteriores small knobs at margin of 8th sternite. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in July. Hostplant unknown.

Distribution.— **Belize:** Cayo; **Costa Rica:** Turrialba.

Adaina bernardi Gielis, 1992
(figs 135, 272, 390)

Adaina bernardi Gielis, 1992: 383.

Material.— Holotype ♂: **Costa Rica**, Punt, Monteverde, 1200-1700 m, 2-6.xii.1987 (Génier & Bertrand), gent CG 6180 (B. Landry).

Diagnosis.— Left valve with conical saccular process, of nearly half valve length. Right valve with long saccular process, curved near tip, and small widening at 2/3. The species resembles and is closely related to *A. beckeri*, but differs in spots and scaling on fore wing, and by hind legs with brown scaling and saccular processes with different shape.

Description.— Male, female. Wingspan 15 mm. Head appressedly scaled, face and vertex brown, between basal segments of antennae creamy white. Palpi slender, shorter than eye-diameter, brown and white mixed. Antennae creamy white, medially on enlarged basal segment some pale brown scales, shortly ciliated. Thorax compressed by pin. Tegulae yellow-white. Hind legs creamy white, but between spur pairs dark brown scaled. Spur pairs of equal length, dark tipped.

Fore wings cleft from 4/7, pale yellow-white. Markings brown: around base of cleft, at costa of first lobe at 1/4, at dorsum of first lobe at 4/5, small scale group in center of first lobe and diffuse scaling on entire wing, slightly condensed at costa. Fringes grey. Underside brown.

Hind wings brown-grey. Fringes grey. Underside brown. Venous scales ferruginous, in double row. Costal row denser scaled and longer than dorsal row.

Male genitalia.— Left valve with straight, conical saccular spine, of just under half valve length. Right valve with longer saccular process, hooked before tip. Uncus rather short and stout. Tegumen slender, bilobate. Juxta stout, with asymmetrical anellus arms. Vinculum arched. Aedeagus arched, with an oblique top. No cornutus.

Female genitalia.— Ostium centrally positioned, flat. Antrum mildly curved and narrowing, with two small lateral sclerites. Ductus bursae as long as antrum, slender. Bursa copulatrix gradually widening to vesicular terminal part, delicate spiculations in caudal 1/3. Ductus seminalis 2 × bursa copulatrix, slender, proximally widened. Lamina ante-vaginalis a curved band, with acute tips (apophyses anteriores?). Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in July, August and December. Hostplant unknown.

Distribution.— **Costa Rica:** Punt. Monteverde; **Mexico:** Tamaulipas.

Adaina obscura Gielis, 1999
 (figs 136, 273)

Adaina obscura Gielis, 1999: 311.

Material.— Holotype ♂: **Costa Rica**, Guanacaste, 8 km SW Cuajiniquil, Est Murcielago, 100 m, vii.1990 (Curzo Microlep.), gent CG 3889 (Inbio).

Diagnosis.— The species is characterized by the almost uniform grey-brown colour of the wings. Left valve with long straight spiny saccular process. Right valve with moderate, well-developed saccular rod.

Description.— Male. Wingspan 12 mm. Head appressedly scaled, dark brown, between the eyes whitish. Palpi slightly curved up, whitish, basal half of third segment dark brown, 3/4 of eye-diameter. Antennae faintly ringed grey-brown and brown, ciliated. Thorax, tegulae and metathorax descaled. Hind legs pale brown-white, first tarsal segment pale brown. Spur pairs of unequal length, median longer than lateral spurs.

Fore wings cleft from 5/8, grey-brown. Before base of cleft dark brown group of scales. Fringes grey-brown. Underside dark brown, with some white scales along costa.

Hind wings and fringes grey-brown. Underside dark brown. Venous scales brown-black, in double row.

Male genitalia.— Left valve with a saccular spine of 1/3 of valve length, basally with process reaching to cucullus and short one toward valve base. Right valve with long spoon-like saccular process. Uncus rather short. Tegumen elongate. Juxta stout, anellus arms small, hardly sclerotized. Vinculum narrow, arched. Aedeagus straight, with pronounced vesica. No cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in July. Hostplant unknown.

Distribution.— **Costa Rica:** Guanacaste.

Adaina invida (Meyrick, 1908)
 (figs 137, 274, 391)

Marasmarcha invida Meyrick, 1908: 493.

Material.— Lectotype ♂: **Brazil**, Sao Paulo, (19)07 (R.), gent BM 18459 (BMNH). Paralectotype ♀: same locality and data, (BMNH) [examined].

Diagnosis.— Left valve with sinuous saccular process. Right valve with two small saccular hooks. The species has dark dorsal spot on third abdominal segment.

Description.— Male, female. Wingspan 12-13 mm. Head appressedly scaled, with some erect scales at collar. Collar and face brown, between base of antennae white. Palpi slender, grey-white, protruding, as long as eye-diameter. Antennae grey-white, shortly ciliated. Thorax pale brown. Tegulae, metathorax and abdomen pale ochreous-brown. Centrally on dorsum of abdomen small pale brown line and dark spot at dorsum of the third segment. Hind legs grey-white, with two pairs of spurs of equal length.

Fore wings cleft from 3/5, pale straw-yellow. Markings brown: small spot at base of cleft, costal spot just beyond base of cleft, apical dots in both lobes and small dorsal dot

in first lobe. Some scattered brown scales on wing. Fringes grey-brown. Underside pale brown, with mixture of pale scales in terminal parts of both lobes.

Hind wings and fringes brown-grey. Underside pale brown. Venous scales ferruginous, in double row. Costal row slightly longer than dorsal row.

Male genitalia.— Left valve with almost parallel margins; sacculus with oscillating spine of half valve length. Right valve terminally little wider than basally; sacculus with two small thorns. Uncus moderate, slender. Tegumen bilobate. Juxta with two anellus arms of unequal width. Aedeagus curved with small plate-like cornutus.

Female genitalia.— Ostium left lateral. Antrum slightly curved. Ductus bursae slender. Bursa copulatrix vesicular, without signum. Ductus seminalis $2 \times$ bursa copulatrix, vesicular. Lamina ante-vaginalis arched, with curved, stout apophyses anteriores. Apophyses posteriores $3 \times$ papillae anales.

Ecology.— The moth flies in February, July and October. Hostplant *Senecio brasiliensis*.

Distribution.— **Brazil:** São Paulo; **Costa Rica;** **Panama.**

Remarks.— The character stated by Meyrick being diagnostic, long palpi, is also seen in *A. primulacea*.

Adaina primulacea Meyrick, 1929
(figs 138, 275, 392)

Adaina primulacea Meyrick, 1929: 507.

Material.— Holotype ♂: **Panama**, Taboga Island, Gulf of Panama, at light, 150 m, 23.ix.(19)24 (St. George Expedn. C.L. Collonette), gent BM 18456 (BMNH) [examined].

Diagnosis.— Left valve with curved saccular spine, of half valve length. Right valve with two small saccular hooks. Wing colour straw-yellow.

Description.— Male, female. Wingspan 13 mm. Head appressedly scaled, straw-yellow. Palpi straw-yellow, as long as eye-diameter. Antennae yellow, shortly ciliated. Thorax, metathorax, tegulae and abdomen straw-yellow. Hind legs with two pairs of spurs, proximal pair of unequal length.

Fore wings cleft from 2/3, straw-yellow. Faint brown spot at base of cleft. Fringes yellow-white. Underside straw-yellow mixed with some ferruginous scales in basal field.

Hind wings yellow-grey. Fringes yellow-white. Underside yellow-white. Venous scales pale ferruginous, in double row. Costal row extending into second lobe.

Male genitalia.— Left valve more rounded; sacculus with a very slender spine gradually curved dorsally; of half valve length. Right valve lanceolate; sacculus with spine at 1/3 and at half valve length. Uncus well-developed, slender. Tegumen bilobate. Juxta with two anellus arms of unequal width and length. Vinculum arched. Aedeagus straight; without cornutus.

Female genitalia.— Ostium central, slightly excavated. Antrum mildly narrowing. Ductus bursae short. Bursa copulatrix gradually widening to vesicular. Terminal part ductus seminalis $2 \times$ bursa copulatrix, slender, proximally widened. Lamina ante-vaginalis a curved band. Apophyses anteriores short. Apophyses posteriores $3 \times$ papillae anales.

Ecology.— The moth flies in September and December. Hostplant *Chromolaena odorata* (L.) (Matthews & Maharajh, 2009). Larvae are stem borers, forming galls.

Distribution.— **Costa Rica; Panama:** Taboga Island; **Nearctic:** U.S.A.

Adaina everdinae Gielis, 1991
(figs 139, 276)

Adaina everdinae Gielis, 1991: 75.

Material.— Holotype ♂: **Argentina**, Salta, Rosaria de la Frontera, Los Banos, 6.iv.1979 (Mission Cientifica Danesa, sta. 72), gent CG 4176 (ZMUC).

Diagnosis.— Left valve with long curved saccular spine. Right valve without obvious saccular process. The genital structure is closely related to *A. thomae*, but left valve differs by oval basal part of sacculus and more slender and evenly curved saccular spine.

Description.— Male. Wingspan 13 mm. Head appressedly scaled, olive-brown. Between base of antennae grey-white. Palpi protruding, as long as eye-diameter, grey-white. Second and third segment equally long; second segment terminally with faint pale brown ring. Antennae dorsally white, ventrally brown; shortly ciliated. Thorax and tegulae yellowish-white; terminally thorax has faint brown colouring. Hind legs grey-white; proximal spur pair of unequal length, distal spur pair of equal length.

Fore wing cleft from 1/2, grey-white. Markings brown: oblique spot at base of cleft, costal spot on first lobe beyond base of cleft, two sub-apical spots at dorsum of both lobes, isolated brown scales in basal wing half. Fringes grey, darker near spot on wing. Underside grey-brown, with a dark costal streak from base to half wing length and costal spot beyond base of cleft.

Hind wings pale grey-brown. Fringes grey-brown. Underside grey-brown. Venous scales, dark brown, in double row; costal row longer than dorsal row.

Male genitalia.— Left valve rounded. Sacculus with basal twist, progressing in long, slender spine, curved dorsally and reaching to tip of valve. Right valve lanceolate, with ill-pronounced sacculus. Uncus moderate, slender. Tegumen bilobate. Juxta with two anellus arms of unequal length. Vinculum arched. Aedeagus slightly curved, with small sclerotized central ridge.

Female genitalia.— Unknown.

Ecology.— The moth flies in April and December. Hostplant unknown.

Distribution.— **Argentina:** Salta, Tucuman.

Adaina desolata Arenberger & Bond, 1995
(figs 140, 277)

Adaina desolata Arenberger & Bond, 1995: 466.

Material.— Holotype ♂: **Colombia**, Bogota, above National Parque, 2750 m, 27.viii.1989 (M. Murcia), gent BM 21122 (BMNH) [examined].

Description.— After (translated) Arenberger & Bond, 1995: “Wingspan 15 mm. Fore wings pale brown, with dark brown spot at costa directly above base of cleft. Because of poor condition of specimen no further markings recognizable”.

Male genitalia.— Left valve rounded, with waved saccular process of 2/3 of valve length. Right valve elongate, with small saccular ridge. Uncus short, curved. Tegumen bilobed. Juxta broad, with asymmetrical anellus arms. Vinculum narrow, arched. Aedeagus mildly curved, blunt ending. Cornutus small, angulated group of delicate sclerotizations.

Female genitalia.— Unknown.

Ecology.— The moth flies in August, at an altitude of 2750 meters. Hostplant unknown.

Distribution.— **Colombia:** Bogota.

Adaina perplexus (Grossbeck, 1917)
(figs 141, 278, 393)

Pterophorus perplexus Grossbeck, 1917: 136.

Material.— Lectotype ♂: U.S.A., Florida, Marco, 17.iv.1912, gent BL 393 (AMNH). Paralectotypes: U.S.A., Florida: La Belle, 27.iv; Everglades, 10.iv (AMNH).

Description.— Male, female. Wingspan 12-14 mm. Head appressedly scaled, ochreous. Collar with erect scales, ochreous-brown. Palpi slender, ochreous-brown. Antennae longitudinally marked grey-white and brownish; shortly ciliated. Thorax, tegulae, metathorax and abdomen pale ochreous. Abdominal segments with two small dorso-lateral, dark brown, spots. Hind legs pale brown. Proximal spur pair longitudinally ochreous and blackish; distal pair ochreous and dark brown; both pairs of unequal length.

Fore wings cleft from 3/5. Colour ochreous with dark brown markings. Markings: an poorly developed spot in cell; at base of cleft; large spot at costa of first lobe just beyond base of cleft and followed by two smaller costal spots; small spot at apex and anal region of both lobes; at the mid-termini of second lobe and isolated scales along costa. Fringes ochreous-brown, dark brown at anal angle of first lobe and diffusely around anal angle of second lobe. Underside dark brown, with darker areas indicating the spots as above.

Hind wings and fringes brown-grey. Underside grey-brown. Venous scales black; in double row, costal row longer than dorsal row.

Male genitalia.— Left valve rounded with pronounced, almost hooked, saccular spine. Right valve lanceolate with a small knob-like saccular process. Tegumen and uncus moderately large. Anellus arms asymmetrical. Vinculum arched. Aedeagus slightly curved, with minimal sclerotized central area.

Female genitalia.— Antrum left lateral positioned. Ostium excavated. Antrum funnel-shaped, with two lateral sclerites. Ductus bursae wide. Bursa copulatrix vesicular, with pair of longitudinal, ridge-like signa. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in January, March, April, May, July and October. Hostplant unknown.

Distribution.— **Cuba:** Varadero; **Trinidad;** **Nearctic:** U.S.A.

Adaina thomae (Zeller, 1877)
 (figs 142, 279, 394)

Leioptilus thomae Zeller, 1877: 480.

Material.— Holotype ♂: **Virgin Islands**, St. Thomas, no date, gent BM 18457 (BMNH) [examined].

Diagnosis.— Left valve with long, basally saccular process moderately curved at base. Right valve with small saccular hook.

Description.— Male, female. Wingspan 13 mm. Head appressedly scaled, grey-white, tip of scales pale-brown. Collar with some erect scales. Palpi white-grey, as long as eye-diameter. Antennae white-grey, shortly ciliated. Thorax and tegulae grey-white with tip of scales pale brown. Metathorax and abdomen grey-white. On dorsal part of abdomen two pale brown longitudinal lines. Hind legs grey-white, proximal spur pair of unequal length, distal pair of equal length.

Fore wings cleft from 2/3, grey-white. Markings ferruginous-brown: discal spot, spot at base of cleft, two small dots at costa of first lobe and at dorsum of both lobes. Some irregular scaling throughout wing, slightly condensed at apex of both lobes and centrally in second lobe. Fringes white and ferruginous in small blocks on dorsum of both lobes. Underside ferruginous with white costal line and brown spots at costa of first lobe, apex of both lobes and subterminally on dorsum of both lobes.

Hind wings ferruginous-grey. Fringes ferruginous-grey. Underside ferruginous-brown, gradually paler to tip of first lobe. Small brown apical dot in first lobe. Venous scales orange-ferruginous in double row. Dorsal row longer than costal row.

Male genitalia.— Left valve more rounded; saccular process long and slender, tip almost near tip of valve. Right valve with parallel margins; small hooked saccular spine. Uncus rather short and slender. Tegumen bilobate. Juxta slender, with asymmetrical anellus arms. Vinculum curved. Aedeagus slightly curved, no cornuti.

Female genitalia.— Ostium centrally positioned, wide, flat. Antrum gradually funneling to very short ductus bursae. Bursa copulatrix vesicular, with large field of spiculation, condensed centrally. Apophyses anteriores absent, apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in February, July, August, October and December. Host-plant unknown.

Distribution.— **Brazil**: Goias, Santa Catarina; **Mexico**: Nayarit; **Puerto Rico**; **Virgin Islands**: St. Thomas, Guana Island.

Adaina planaltina Gielis, 1992
 (figs 143, 280)

Adaina planaltina Gielis, 1992: 383.

Material.— Holotype ♂: **Brazil**, D(istrito) F(eederal), Planaltina, 1000 m, viii.1983 (V.O. Becker), gent CG 6150 (Becker nr. 41272).

Diagnosis.— Left valve with mildly curved saccular process at 5/8 of valve length. Right valve with minimally curved saccular rod at 3/8 of valve length. Fore wings pale

yellow-white, with small dark brown spots in discal cell, before base of cleft, two at costa of first fore wing lobe and dash at dorsum of second fore wing lobe straight before apex.

Description.— Wingspan 14 mm. Head appressedly scaled, yellow-white. Collar brownish mixed, with some erect scales. Palpi slender, slightly longer than eye-diameter, mixed white and brown. Antennae shortly ciliated, longitudinally scaled with rows of yellow-white and pale brown scales. Thorax, tegulae, metathorax and abdomen yellow-white. Abdomen ventrally with slender brown line. Hind legs with two pairs of spurs, median spurs slightly longer than lateral spurs.

Fore wings cleft from 3/5, yellow-white. Markings dark brown: small discal spot, spot just before base of cleft, at costa of first lobe spots at 1/4 and 3/4, longitudinal spot at dorsum of first lobe before apex and dash along dorsum of second lobe before apex. Fringes brownish-white, darkened at dorsum of both lobes before apices. Underside grey-brown, with some indication of spots as above.

Hind wings pale brown-grey. Fringes brownish-white. Underside grey-brown. Veinous scales black, in double row, costal row longer and more densely scaled than dorsal row.

Male genitalia.— Left valve with curved saccular spine of almost 5/8 of valve length. Right valve with almost straight saccular spine of 3/8 of valve length. Uncus rather short, slender. Tegumen bilobate, slender. Juxta with asymmetrical anellus arms. Vinculum arched. Aedeagus slightly curved, with small curved cornutus.

Female genitalia.— Unknown.

Ecology.— The moth flies in August. Hostplant unknown.

Distribution.— **Brazil:** Distrito Federal.

Adaina zephyria Barnes & Lindsey, 1921
(figs 144, 281, 395)

Adaina zephyria Barnes & Lindsey, 1921: 366.

Material.— Holotype ♂: (U.S.A.), California, San Diego, 1-7.viii (USNM) [examined].

Diagnosis.— Left valve with long and slender curved saccular spine of 2/3 of valve length, which has basally directed loop at beginning of process. Right valve with ridge bearing two small dentations as saccular process, at half valve length. Moth has pale straw-yellow colour, with distinct small brown spots at base of cleft and at costa of first fore wing lobe.

Description.— Wingspan 14-16 mm. Head appressedly scaled, ochreous. Collar pale brown, with some erect scales. Face pale brown. Palpi slender, protruding, slightly longer than eye-diameter, ochreous with dense brown scaling on third segment. Antennae brown-ochreous, shortly ciliated. Thorax, tegulae, meso-thorax and abdomen ochreous-yellow. Fore and mid legs pale brown with on tibia longitudinal dark brown and white lines. Hind legs pale brown-white with two pairs of spurs, both pairs of unequal length.

Fore wings cleft from 2/3, straw-yellow. Spots brown: faint discal spot, at base of cleft, at 1/4 and 2/3 of costa of first lobe and at tornal and apical regions of both lobes. Fringes mixed grey-white and grey-yellow. Underside brown.

Hind wings and fringes brown-grey. Underside pale brown. Venous scales in double row, ferruginous, with some scattered ferruginous scales along dorsum of second lobe.

Male genitalia.— Left valve with long and slender, curved saccular spine of 2/3 of valve length, which has basally directed loop at beginning of process. Right valve with ridge on which two small dentations as saccular process, at half valve length. Uncus slender, short. Tegumen bilobate. Juxta asymmetrical. Vinculum arched. Aedeagus slightly curved, with plate-like cornutus.

Female genitalia.— Ostium almost centrally positioned. Antrum funnel-shaped, with lateral sclerotized margins. Ductus bursae slender, hardly sclerotized. Bursa copulatrix vesicular, without signum. Apophyses anteriores strong, hooked, almost as long as the papillae anales. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in January to May, September and October. Hostplant unknown.

One specimen bears a label “reared ex flowers, sept., Oaxaca”. This may indicate the species is not a borer.

Distribution.— **Bolivia:** Yungas; **Brazil:** Minas Gerais; **Costa Rica:** Puntarenas; **Ecuador:** Guachayacu, Morona-Santiago; **Mexico:** Oaxaca; **Peru:** Huanaca; **Nearctic:** U.S.A.

Adaina bipunctatus (Möschler, 1890)
(figs 145, 282, 396)

Pterophorus bipunctatus Möschler, 1890: 346.

Material.— Holotype: **Puerto Rico** (probably lost) (ZMBH).

Diagnosis.— Left valve with characteristic curved saccular spine at 1/3 of valve length. Right valve with small saccular hook. White line on underside at costa of fore wing is characteristic.

Description.— Male, female. Wingspan 12-13 mm. Head appressedly scaled. Vertex brown, frons pale straw-yellow. Palpi yellow, little longer than eye-diameter, slender, drooping. Antennae straw-yellow, with enlarged basal segment, shortly ciliated. Thorax and tegulae straw-yellow. Hind legs pale yellow.

Fore wings cleft from 2/3, pale straw-yellow. Markings brown: irregular scaling along costa; at costa of first lobe; at base of cleft and some scales at dorsum of second lobe. Fringes pale brown-yellow. Underside brown, with linear white scaling along the middle 1/3 of costa, before base of cleft.

Hind wings brown-grey. Fringes greyish white. Underside brown. Venous scales brown, in double row. Costal row longer and densely implanted with scales. Dorsal row short and with sparse scales.

Male genitalia.— Left valve is rather broad, and contains small, slightly waved saccular spine, of approximately 1/3 of valve length. Right valve is more lanceolate and contains centrally placed small, sclerotized ridge with small hook. Uncus slender. Tegumen rather narrow. Juxta slightly asymmetrical. Vinculum narrow. Aedeagus minimally curved. No cornuti.

Female genitalia.— Ostium centrally positioned, medially excavated. Antrum funnel-like, short. Ductus bursae at antrum narrow, proximally immediately widening. Bursa copulatrix vesicular. No signum. Apophyses anteriores in narrow and sclerotized lamina ante-vaginalis, and strongly curved to midline, slender spines at 2/3 of papillae anales. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in January to May, August and December. Recorded hostplants: *Erechtites valerianaefolia*, *Trichogonia appariciot*, *T. hirtiflora*, *T. villosa*, *T. gardneri*, *T. macrolepis*, *Mikania hoenbei*, *Pentacalia desiderabilis*, *Campuloclinium macrocephalum*, *Chromolena squarrulosa*, *Symphyopappus casarettoi*, *Eupatorium laxum*, *E. odoratum*, *E. iresinoides*, *E. clematideum*, *Pluchea purpurascens*, *P. carolinensis* (Jacq.) G. Don., *Erechtites valerianaefolia*, *Verbesina* spec., *Grazielia intermedia*, *Barrosoa betonicaeformis*, *Veronia cinerea* (L.) Less., *Ageratum conyzoides* L. (Matthews & Lott, 2005; Matthews & Maharajh, 2009).

Distribution.— **Bahamas; Brazil:** Distrito Federal, Mato Grosso, Rio de Janeiro; **Ecuador:** Pichincha; **Puerto Rico; Virgin Islands:** St. Croix; **Nearctic:** U.S.A.

Remarks.— Due to misidentifications of *A. bipunctatus*, the list of hostplants needs carefull checking (Matthews & Maharajh, 2009).

Adaina hodias (Meyrick, 1908)
(figs 146, 283, 397)

Marasmarcha hodias Meyrick, 1908: 492.

Material.— Holotype ♂: **Brazil**, São Paulo, (19)07 (R.), gent BM 18458 (BMNH) [examined].

Diagnosis.— Left valve is blister-like, rounded, and has stout, rod-like, oblique saccular spine. Right valve with small saccular hook.

Description.— Male, female. Wingspan 10-14 mm. Head appressedly scaled. Collar and face ochreous-brown, between base of antennae white. Palpi 1.3 times eye-diameter, slender, creamy-white, slightly curved up. Antennae grey-white, shortly ciliated. Dorsum of thorax and abdomen ferruginous brown. Tegulae, metathorax and lateral sides of body grey-white. Fore legs grey, distally with grey-brown darkening; spur pair with grey-brown scale brush. Mid legs and hind legs grey-white; hind legs with first and second spur pair of equal length, grey-white, dark tipped.

Fore wings cleft medially, grey-white. Numerous pale brown scales, intensifying at costa and towards apex of both lobes. Markings dark brown: scales around basal half of cleft, costal spot at 1/5 and 3/4 and at anal area of first lobe, apex of both lobes, and two small dorsal spots at distal part of second lobe. Fringes brown-grey, with some darkening near spot at anal region of first lobe. Underside dark brown, with some paler areas at costa near base of cleft and in both lobes.

Hind wings grey. Fringes brown-grey. Underside brown-grey. Venous scales in double row, grey-brown.

Male genitalia.— Left valve almost round, blister like, sacculus stout, rod-like, oblique, rather short. Right valve elongated; sacculus with small thorn at 1/3. Uncus slender, moderate. Tegumen bilobate. Juxta with two anellus arms of unequal length. Vinculum arched. Aedeagus arched; ductus ejaculatrix long and slender.

Female genitalia.— Ostium centrally positioned, flat. Antrum gradually funneling,

as long as wide. Ductus bursae $1\frac{1}{2} \times$ antrum. Bursa copulatrix vesicular, signum in shape of spiculation in proximal half of bursa. Ductus seminalis slender, just over length of bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores nearly $3 \times$ papillae anales.

Ecology.— The moth flies in February, April, July, August, October and December. Hostplant unknown.

Distribution.— **Brazil:** Mato Grosso, São Paulo; **Costa Rica;** **Ecuador:** Morona-Santiago, Pichincha; **Mexico:** Huatasco; **Venezuela:** Merida.

Adaina bolivari (Cåpuse, 1987)
(figs 147, 284, 398)

Paravinculia bolivari Cåpuse, 1987: 185.

Material.— Holotype ♂: **Venezuela**, Parque Nacional Rancho Grande, 16-19.xi.1982 (V. Decu), gent Cåpuse 3362 (J.Cåpuse).

Diagnosis.— Left valve with short, broad saccular process, distally ending acute (sharp tipped, occasionally blunt). Right valve with narrow slender saccular process.

Description.— Male, female. Wingspan 12-14 mm. Head appressedly scaled, pale brown, between base of antennae ochreous. Palpi drooping, dorsally and ventrally ochreous, laterally grey, as long as eye-diameter. Antennae longitudinally lined ochreous with narrow grey scales. Hind legs ochreous. Spur pairs of equal length, proximal spur pair longer than distal pair. Spurs dorsally ochreous, and ventrally greyish.

Fore wings cleft from 9/16, ochreous. Markings brown: diffuse costal scaling; dash at costa of first lobe just beyond base of cleft, and a small spot at costa at 2/3; small spot at anal angle of first lobe; small discal spot; spot at base of cleft; and in second lobe small apical spot and spot at anal region. Fringes ochreous-grey. Underside pale brown-grey. Ochreous at costa opposite base of cleft and dark dash at costa of first lobe as above.

Hind wings and fringes ochreous-grey. Underside pale brown-grey. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Left valve with short, broad saccular process which distally ends acute (sharp tipped, occasionally blunt). Right valve with narrow slender saccular process. Uncus moderate, rather stout. Tegumen bilobed. Juxta with asymmetrical short anellus arms. Vinculum in shape of waved ridge. Aedeagus straight with multiple forked tip.

Female genitalia.— Ostium centrally positioned, rim slightly irregular. Antrum funnel-shaped, with two small lateral sclerites. Ductus bursae gradually narrowing, and progressing into vesicular bursa copulatrix. No signum. Apophyses anteriores as stout hooks. Apophyses posteriores long and slender, four and a half times the papillae anales.

Ecology.— The moth flies from September to November. Hostplant unknown.

Distribution.— **Venezuela:** PN Rancho Grande; **Ecuador:** Tungurahue, Pastaza.

Remarks.— Curators were unable to trace the holotype of this species in Rumenian collections. This necessitated me to base the new combination on the original description and illustrations of Cåpuse.

Adaina fuscahodias Gielis, 1992
(figs 148, 285, 399)

Adaina fuscahodias Gielis, 1992: 379.

Material.— Holotype ♂: **Mexico**, Veracruz, Huatusco, 1300 m, 19-23.viii.1981 (V.O. Becker), gent CG 6147 (Becker nr 44043). Paratypes 1 ♂, 4 ♀♀: same locality and date, gent CG 6147, 6146, 6311 (Becker nr 44043, CG).

Diagnosis.— Left valve with stout, oblique saccular spine. Right valve with rod-like, slender saccular process. Fore wings with the dark scales in the center of the first lobe.

Description.— Male, female. Wingspan 15-17 mm. Head appressedly scaled, pale ochreous-white. Near collar pale brown. Collar pale brown with numerous erect, bifid scales. Palpi protruding, as long as eye-diameter, slender, speckled with pale brown scales. Antennae pale ochreous-white, with faint brownish gloss, shortly ciliated; at basal segment some pronounced setae. Thorax, tegulae, metathorax and abdomen pale ochreous-white. Hind legs with two pairs of spurs of unequal length.

Fore wings cleft from 3/5, pale ochreous-white diffusely mixed with pale brown scales. Markings pale brown: longitudinal spot from center to anal region of first lobe, spot at base of cleft extending at dorsum of first lobe, bigger costal spot at 1/3 of first lobe and smaller at 2/3 of costa. Fringes ochreous-brown, darker around base of cleft. Underside brownish, without markings.

Hind wings and fringes brown-grey. Underside brownish. Venous scales ferruginous, in double row. Costal row slightly longer than dorsal row.

Male genitalia.— Left valve rounded, with rather stout, oblique saccular process. Right valve more elongate, saccular process poorly developed, in shape of slender rod, and arched club. Uncus curved moderately, slender. Tegumen slender. Juxta asymmetrical, with well-developed anellus arms. Vinculum arched. Aedeagus regularly arched, no cornutus.

Female genitalia.— Ostium left lateral positioned. Antrum almost square, gradually narrowing, minimally sclerotized small ridges. Ductus seminalis originates close to the antrum. Ductus bursae slender and long. Bursa copulatrix vesicular, without signum. Ductus and ductus seminalis vesicular, 2 × longer than bursa copulatrix. Apophyses anteriores absent. Apophyses posteriores two and a half times longer than papillae anales.

Ecology.— The moth flies in February, July, August and December. Recorded host-plants: *Verbesina* sp., *Senecio brasiliensis*, *Vernonanthura mariana*.

Distribution.— **Brazil**: Minas Gerais; **Costa Rica**: Puntarenas, San Jose; **Mexico**: Veracruz.

Remarks.— The species shows some variation in the dorsal markings of the abdomen. In a small series of bred specimens from southern Brazil, a continuous wide dark brown dorsal line is present. Other specimens show hardly any darkening on the dorsum of the abdomen.

Adaina ambrosiae (Mürtfeldt, 1880)
(figs 149, 286, 400)

Pterophorus ambrosiae Mürtfeldt, 1880: 236.

Pterophorus participatus Möschler, 1890: 346.

Adaina sanctaecrucis B. Landry & Gielis. Nomen nudem.

Diagnosis.— The species is closely related to *A. hodias*, but differs in right valve of male genitalia in the saccular and cucullar shape, and the ostium/antrum in the female genitalia. See also next species.

Description.— Wingspan 13–17 mm. Head appressedly scaled, brownish-white. Collar with corona of erect scales, head near collar pale brown. Palpi short and slender, with brownish and white scales, on first segment some drooping scales. Antennae pale brown and brownish-white, shortly ciliated. Thorax and tegulae brownish-white. Hind legs grey-white. The tibiae brown near joint with femur, two pairs of spurs of unequal length, and proximal spurs both longer than distal spurs, brownish-white with brown tip.

Fore wings cleft from 3/5, brownish-white. Markings dark brown. In addition to dense dark scaling of wing, two longitudinal spots along costa, and two sharp spots at costa of first lobe; an poorly developed spot at costa of second lobe at 3/4; two faint dorsal spots at 1/4 and 1/2. Fringes pale and dark as markings in first lobe, and grey in second lobe. Underside grey-brown, with costal markings in first lobe as above.

Hind wings grey. Fringes grey. Underside grey-brown. Venous scales black, in double row. Costal row more pronounced and longer than dorsal row.

Variation.— The colour of specimens varies with intensity of dark markings. There is considerable difference in size, in the U.S.A. up to 20 mm.

Male genitalia.— Left valve with short and stout saccular process, basally widened with broad harpe with spiculated top surface. Right valve with pronounced saccular and cucullar structure which fuses near tip of valve. Uncus short and slender. Tegumen bilobate. Juxta with asymmetrical anellus arms. Vinculum arched. Aedeagus slightly arched, simple, near tip suddenly narrowing to tubular tip segment.

Female genitalia.— Ostium sharp "V"-like, laterally positioned. Antrum four times longer than wide. The ductus bursae short, ending laterally in antrum. Bursa copulatrix simple, vesicular. Margin of 8th tergite near antrum, on right side of abdomen, with well-sclerotized margin. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in January, March, May, July and December. Recorded hostplants: *Ambrosia artemisiifolia* L., *Ambrosia acanthicarpa* Hooker, *A. chamissonis* (Lessing) Greene, *A. confertiflora* Decandolle, *A. dumosa* (A. Gray) Payne, *A. eriocentra* (A. Gray) Payne, *A. cumanensis* HBK. (= *psilostachya* DC.), *Pluchea rosea* (Godfrey), *P. carolinensis* (Jacq.) G. Don., *Melanthera nivea* (L.) Small (= *M. deltoidea* Michx.), *Helianthus annus* L., *H. tuberosa* L., *Xanthium strumarium* L. (cocklebur), *Neurolaena lobata*, artichoke (leaves), *Rudbeckia* sp. (Matthews & Lott, 2005).

Parasites.— *Apanteles* sp. nr. *nemoriae* Ashmead (Hymenoptera, Braconidae), *Hypo-soter* sp. nr. *nigrolineatus* (Viereck) (Hymenoptera, Ichneumonidae).

Distribution.— **Bermuda; Costa Rica:** Cartago; Jamaica; Puerto Rico; Virgin Islands; Guana Island; **Nearctic:** U.S.A.

Adaina scalesiae B.Landry, Roque & Matthews, 2004
 (figs 150, 287, 401)

Adaina scalesiae B. Landry, Roque & Matthews, 2004: 294.

Material.— Holotype ♂: **Ecuador**, Galapagos Islands, Isabela, 15 km N Puerto Villamil, 25.v.1992 (B. Landry) (CNC). Paratypes 30 ♂♂, 46 ♀♀: **Ecuador**, Galapagos Islands: Fernandina, Floreana, Gardner, Isabela, Pinta, San Cristobal, Santa Cruz.

Diagnosis.— Compared to *A. ambrosiae*: left valve with saccular process blunt, tip of process angulated, basal parts less prominent; right valve with less prominently extended saccular and cucullar process; wingspan smaller, and colour more contrasting.

Description.— Wingspan 11-13 mm. External features as in *A. ambrosiae*, but colour more contrasting.

Male genitalia.— Left valve with "S"-shaped saccular process, rather blunt, but more slender than in previous species. Right valve with more slender saccular and cucullar structures than in previous species. Uncus mildly curved, as long as tegumen, slender. Tegumen bilobed. Juxta stout, with asymmetrical anellus arms. Vinculum arched, slightly widened centrally. Aedeagus minimally curved, and with more even width. No cornutus.

Female genitalia.— Ostium centrally positioned, excavated. Antrum tubular, 3 × longer than wide. Ductus seminalis not obvious. Bursa copulatrix vesicular. No signum. Lamina ante-vaginalis blunt. Apophyses anteriores absent. Apophyses posteriores 2 × papillae anales.

Ecology.— The moth flies in January to May, July to September, and December. Hostplants: *Scalesia microcephala* Robinson, *S. baurii* spp. *hopkinsii* (Robinson) Eliasson, *S. villosa* Stewart, *S. pendiculata* Hook, *S. gordilloi* Hamann & Wium Andersen, *S. retroflexa* Hemsley, and *Lecocarpus lecocarpoides* Cronq. & Stuessy.

Distribution.— **Ecuador**: Galapagos Islands: Fernandina, Floreana, Gardner, Isabela, Pinta, San Cristobal, Santa Cruz.

Adaina ipomoeae Bigot & Etienne, 2009
 (figs 151, 288, 402)

Adaina ipomoeae Bigot & Etienne, 2009: 465.

Material.— Holotype ♂: **Guadeloupe**, Lamentin, Ravine-Chaude, 6.v.2006 (J. Etienne) (MNHN).

Diagnosis.— Left valve with long spiny saccular process, at 2/5 a knob-shaped widening, and acute tip. Right valve with similar saccular process, in which widening at 2/5 is fusiform.

Description.— Wingspan 11-13 mm. Head brown-grey, collar pale ferruginous. Palpi protruding, brown-grey, as long as eye-diameter. Antennae brown, distal half pectinate. Thorax, tegulae and abdomen pale ochreous, on abdomen three longitudinal pale brown lines: central and lateral. Hind legs pale ochreous, with two pairs of spurs with dark tip, pairs of equal length, but median longer than lateral spurs.

Fore wings cleft from middle, pale ochreous. Markings dark brown: spot in discus,

spot around and at base of cleft, small streak at costa just beyond base of cleft, at mid costa of first lobe, at both apices, at anal region of first lobe and at mid-terminen and in anal region of second lobe. Scattered brown scales at dorsum of second lobe and at costa between wing base and base of cleft. Fringes pale grey-brown, with darker dash at anal angle of first lobe. Underside pale brown, with dark markings: costal streak just beyond base of cleft, at anal region of first lobe, and at mid-terminen of second lobe.

Hind wings and fringes pale ochreous. Underside pale brown, third lobe mixed with numerous white scales. Venous scales dark ferruginous, in double row, costal row longer.

Male genitalia.— Left valve pointed. This saccular process acute, parallel to valve and just over valve length, with a knob-like widening at 2/5 of length. Right valve with similar saccular process, but for widening which is fusiform. Uncus moderately long and slender. Tegumen slender, and rather long. Anellus arms asymmetrical, rather stout. Vinculum arched. Aedeagus straight, with knob shaped tip.

Female genitalia.— Ostium left lateral positioned, rounded. Antrum short, as wide as long, with two small longitudinal sclerites. Ductus bursae long and slender. Bursa copulatrix vesicular, and covered with dense spiculae. Ductus seminalis from junction between ductus bursae and bursa copulatrix. Apophyses anteriores stout, as long as papillae anales. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in January, August and October. Hostplants: *Ipomoea tiliacea* (Wild) Choisy, *Merrimia umbellata* (L.) H. Hall. (Bigot & Etienne, 2009).

Distribution.— **Cuba; Guadeloupe; Jamaica; Puerto Rico.**

Adaina praeusta (Möschler, 1890)

Pterophorus praeusta Möschler, 1890: 346.

Material.— Holotype: **Puerto Rico** (probably lost) (ZMBH).

Description.— After Möschler, 1890: "Noch kleiner. Weissgelb, Vorderflügel dicht vor der Spalte mit einem lichtbraunen Flekchen, die beiden Zipfel an der Spitze fein rostbraun gerandet, der vordere mit einzelnen eingestreuten braunen Schüppchen, seine Franzen mit rostbraunen Spitzen. Hinterflügel und deren Franzen graulich. Unterseite ohne Mittelfleck der Vorderflügel. 4,1 mm.".

Translation.— "Even smaller. White-yellow, fore wings just before base of cleft with small, pale brown dot, margin of both lobes apically ferruginous, anterior lobe with scattered brown scales, fringes with ferruginous tip. Hind wing and fringes greyish. Underside without central dot in fore wing. 4.1mm".

Ecology.— Flight period and hostplant unknown.

Distribution.— **Puerto Rico.**

Tribus Pterophorini Bigot, Gibeaux, Nel & Picard, 1998

Pterophorini Bigot, Gibeaux, Nel & Picard, 1998: 296.

Patagonophorus Gielis, 1991.

Patagonophorus Gielis, 1991: 70.— Type species: *Patagonophorus murinus* Gielis, 1991, by original designation and monotypy.

Description.— Head appressedly scaled. Palpi short, as long as eye-diameter, appressedly scaled.

Fore wing cleft from 7/10, both lobes without terminal margin; second lobe extremely narrow. R1 short, before base of cleft. R2 and R3 absent. R4 and R5 fused. AN1, ill-developed.

Hind wing cleft very deep. SC and R separate. CU2 separating from M3 in between bases of both clefts.

Male genitalia.— See type species.

Female genitalia.— See type species.

Remarks.— This genus has less primitive characteristics than those found in the Nearctic genus *Singularia* Arenberger, although more primitive than those in the genera group *Pterophorus*. For differences with allied genera see keys in the first part of this paper.

Patagonophorus murinus Gielis, 1991
(figs 152, 289, 403)

Patagonophorus murinus Gielis, 1991: 71.

Material.— Holotype ♂: **Argentina**, Rio Negro, San Carlos de Bariloche, Nirihuau 30.xii.1978 (Mision Cientifica Danesa), gent CG 4116, wing venation CG 4132 (ZMUC). Paratypes: 1 ♂, 2 ♀♀, **Argentina**, Neuquen, San Martin de los Andes, Quilquihue, 750 m, 15-26.xi.1981 (Gentili), gent CG 4117 (ZMUC); 6 ♂♂, **Argentina**, Rio Negro, Norquinco, at light, 21.i-18.ii.1961 (Topal) (ZMUC, CG).

Diagnosis.— The species is recognized by its slender shape, grey-brown colour and its very narrow second lobe of the fore wing. In male genitalia the asymmetrical saccular processes and in female genitalia the antrum are characteristic.

Description.— Male, female. Wingspan 15-18,5 mm. Head appressedly scaled brown-grey. Antennae half wing length, ringed pale and dark grey-brown. Palpi as long as eye diameter, brown-grey, appressedly scaled. Thorax brown-grey. Abdomen pale grey-brown, dorsally with small dark brown longitudinal line and laterally dark brown, pronounced line. Hind legs with two pairs of spurs of equal length.

Fore wings cleft from 7/10, brown-grey mixed with white scales. At 1/4 of dorsum indistinct brown spot. Dorsal margin of both lobes with row of dark brown scales, in first lobe alternated with white scales. Fringes grey, white before apex of costa of first lobe. Underside dark brown.

Hind wings grey-brown. Fringes brown-grey. Underside grey-brown. Venous scales black, in single row. In basal half of row these scales project anterad and are densely implanted, in outer half of row scales project posterad and are implanted more separately.

Male genitalia.— Valvae symmetrical in structure, but basally localized saccular processes are asymmetrical. Left valve with semicircular process and in right valve two

slightly curved ones. Distal half of sacculus symmetrical. Uncus stout. Tegumen bilobate. Juxta asymmetrical, rather slender. Vinculum semicircular and wide. Aedeagus slightly curved, conical.

Female genitalia.— Antrum consists of almost rectangular, sclerotized plate, with ostium before middle. Ductus bursae slender, almost straight. Bursa copulatrix simple, with two longitudinally, ill-sclerotized, asymmetrical signa. Ductus seminalis originates beside ductus bursae. Papilles anales well-developed. Apophyses anteriores absent. Apophyses posteriores two and a half times papilles anales.

Ecology.— The moth flies from half November till half February. Hostplant unknown.

Distribution.— **Argentina:** Rio Negro, Neuquen; **Chile:** Bio-Bio.

Chocophorus Gielis & Matthews, 1994.

Chocophorus Gielis & Matthews, 1994: 161.— Type species: *Alucita leptochorda* Meyrick, 1913, by original designation.

Diagnosis.— The genus is characterized by dark brown colour of fore wings and blocked white markings on wings and in fringes. Fore wing venation is extremely reduced to Sc, short R₂ (present in *leptochorda*, not in *alternaria*), R₄, M₃ and faint indication of An. This pattern is not met in any other genus. The related genus *Singularia* Arenberger still has Cu₂ and two An veins. In *Patagonophorus* Gielis both an R₂ and Cu₂ vein are present.

Description.— Head appressedly scaled. Frons smooth, rounded. Palpi length just over eye-diameter. Antennae filiform, shortly ciliated.

Fore wings cleft from 2/3; dark brown with white markings on wing and in fringes. Wing venation: Sc, R₂ (not in all species), R₄, M₃ and reduced An.

Hind wings deeply cleft, with single row of venous scales.

Male genitalia.— Asymmetrical with a tendency to symmetry.

Female genitalia.— Ostium with sclerotized lamina ante-vaginalis. Ductus bursae slender. Ductus seminalis originates from junction between ductus bursae and bursa copulatrix. Bursa copulatrix vesicular, with single, almost linear signum.

Ecology.— Hostplant record for *C. alternaria* (Zeller) is *Echium plantagineum* Linnaeus.

Distribution.— **South America**, as far north as Guatemala and El Salvador.

Chocophorus alternaria (Zeller, 1874)
(figs 153A, 153B, 153C, 290, 404)

Aciptilia alternaria Zeller, 1874: 447.

Material.— Holotype ♂: **Chile**, Valparaiso, xi (Mathew), (BMNH) [examined]. Paratype ♀: data as holotype, (BMNH) [examined].

Diagnosis.— *C. alternarius* is a distinct South American plume moth, recognized by its characteristic checkered fringe pattern in fore wing.

Description.— Male, female. Wingspan 13-21 mm. Head appressedly scaled, pale grey and brown-grey. Palpi short, curved along face. Second segment roughly scaled, third segment small. Antennae pale grey to pale brown-grey; shortly ciliated. Thorax pale brown-grey. Abdomen pale brown-grey, with three longitudinal brown lines on upperside. First segment brownish. Underside pale brown-grey.

Fore wing cleft from 1/2, pale grey. Indistinct pale brown-grey scaling with increasing intensity toward base of cleft. Dark brown spots at dorsum at 1/3 and 1/2, and at costa above base of cleft. End of cell with indistinct group of dark brown scales. Dark brown and white scales along dorsal margin of first lobe. Fringes along costal margin of first lobe alternating dark brown and pale grey, with dark parts above base of cleft, in middle and near apex. Dorsal fringes of first lobe grey-brown. Costal fringes of second lobe with two alternating dark brown and grey-white parts, anal region dark. Along dorsal margin dark and light fringes in pattern reverse to costal margin; anal section small, dark. Underside dark brown, with distinct fringe pattern as above.

Hind wing in basal half brown-grey, towards termen gradually more brown. Fringes in all lobes near base grey, towards termen brown. Underside brown-grey. Venous scales black, in single row, extending into second lobe.

Male genitalia.— Genitalia symmetrical. Valvae trapezoid-shaped. Sacculus small, progressing into dorsal process as long as sacculus. Uncus slender, moderate. Tegumen bilobate, triangular. Juxta moderate. Vinculum curved, narrow. Aedeagus hooked in basal 1/3. No cornutus.

Female genitalia.— Antrum funnel-like, progressing into slender and almost straight ductus bursae. Bursa copulatrix vesicular. Signum simple, in shape of an extended "}" (brace). Apophyses anteriores absent. Apophyses posteriores two and a half times papillae anales.

Ecology.— The moth flies from October to February. Hostplants: *Echium plantagineum* L., *Echium vulgare* L., *Malus sylvestris* Mill.

Distribution.— **Argentina:** Chubut, Neuquen, Rio Negro, Santa Cruz, Buenos Aires, Jujuy; **Chile:** Aconcagua, Antofagasta, Atacama, Bio Bio, Concepcion, Coquimbo, Curiaco, Nuble, Osorno, Valparaiso, Santiago; **Ecuador:** Guachayacu.

Chocophorus carabayus (Arenberger, 1990)
(figs 154, 291, 405)

Pterophorus carabayus Arenberger 1990: 128.

Material.— Holotype ♂: **Peru**, Carabaya, Oconeque, 2135 m, dry season, vii.1904 (G. Ockenden), gent BM 18613 (BMNH). Paratype 1 ♀: **Peru**, Carabaya, Agualani, 2750 m, dry season, 1.x.1905 (Ockenden), gent Ar 3567 (BMNH) [examined].

Diagnosis.— This species is characterized by dark chocolate to grey-brown colour of fore wing, alternated with bright white transverse patches and by wide white transverse field in first lobe of fore wing.

Description.— Male female. Wingspan 15-19 mm. Head appressedly scaled, grey-white mixed pale ferruginous. Some erect scales at collar. Face grey-brown. Area between base of antennae bright white. Palpi protruding grey-brown. Antennae

grey-brown, shortly ciliated. Thorax and tegulae pale ferruginous-white with dorsal and lateral pale ferruginous longitudinal lines. These lines continue on metathorax and abdomen. Hind legs grey-white with dark brown ring just before first spur pair and terminally on tibia. Tarsal segments basally white, distally dark brown. Both spur pairs of unequal length. Spurs of first pair slightly longer than distal pair.

Fore wings cleft from middle, dark chocolate grey-brown. Wing base with numerous longitudinal white lines converging into single spot. Transverse band at one third of wing, complete. Dark brown spot before base of cleft continues into both lobes as single grey-brown line to both apices. These grey-brown lines are margined white costally and dorsally. Central half of first lobe shining white. Fringes grey-brown, interrupted, white at region of anal angle of both lobes, at costa of first lobe and opposite dorsum and costa of second lobe; some white fringe hairs at base of cleft and at dorsum of second lobe opposite base of cleft. Underside dark brown with white scales, centrally at costa of first and isolated in second lobe.

Hind wings dark ferruginous-brown, slightly mixed ochreous-brown in first lobe basal half. Fringes grey-brown; white dashes at anal regions of first and second lobe and at apex of third lobe. Underside dark brown, slightly paler in the third lobe. Venous scales black, in a single row.

Male genitalia.— Valvae symmetrical, asymmetrical small saccular process, slightly larger in right valve. Uncus stout, curved at tip. Tegumen moderately arched. Juxta asymmetrical, moderately developed. Vinculum arched, without pronounced saccus. Aedeagus slightly curved, without cornutus.

Female genitalia.— Ostium funnel-shaped. Antrum slightly asymmetrical, left laterally positioned. Ductus bursae slender, progressing in vesicular bursa copulatrix. Ductus seminalis originates at junction of ductus bursae and bursa copulatrix. Lamina ante-vaginalis poorly developed. Lamina post-vaginalis well developed, arch-like, sclerotized process. Apophyses anteriores slender, as long as papillae anales. Apophyses posteriores well developed, 2 × papillae anales.

Ecology.— Moth flies in January, March, July, September and October. Hostplant unknown.

Distribution.— **Argentina:** Tucuman; **Ecuador:** Pichincha; **Peru:** Carabaya.

Chocophorus leptochorda (Meyrick, 1913)
(figs 155, 292, 406)

Alucita leptochorda Meyrick, 1913: 111.

Alucita trichogramma Walsingham, 1915: 439.

Material.— Holotype of *Alucita leptochorda* Meyrick, ♀: **Ecuador**, Quevado, (19)11 (R.), gent BM 17999 (BMNH) [examined].

Holotype of *Alucita trichogramma* Walsingham, ♀: **Costa Rica**, Juan Viñas, 750-1050 m, v.1906 (Schaus), gent BM 17989 (BMNH) [examined].

Diagnosis.— Left valve in basal 1/3 rectangular, indented and widened again; distally gradually narrowing. Left sacculus with small thorn-like process. Right valve distally with two asymmetrical processes, ventral larger and bigger than dorsal process.

Description.— Male, female. Wingspan 12-25 mm. Head appressedly scaled. Vertex, collar and face mixed grey-white and dark brown scales. Palpi grey-white, just over eye-diameter. Antennae grey-brown, shortly ciliated. Thorax, tegulae and metathorax olive-brown and grey-white mixed. Hind legs ringed grey-white and dark brown. Proximal pair of spurs of unequal length, distal pair of spurs of equal length.

Fore wings cleft from 1/2, dark brown. Basal 1/4 with six small longitudinal white lines, followed by white transverse band. This band followed by dark brown segment reaching up to 1/3 of first lobes and toward apex of second lobe. Apex of first lobe brown. Fringes blocked brown and white. Underside chocolate-brown, paler in both lobes toward apex.

Hind wings brown-grey. Fringes brown-grey. At dorsum of first and second lobe subterminal white dash, also at apex of third lobe. Underside dark brown, paler toward apex of all lobes. In fringes at base of cleft between first and second lobe, some black scales. Venous scales black, in single row.

Male genitalia.— Valvae asymmetrical. Left valve in basal 1/3 rectangular, indented and widened again; distally gradually narrowing. Left sacculus with small thorn-like process. Right valve distally with two asymmetrical processes, ventral larger and bigger than dorsal process. Uncus stout, bent ventrally with a large dorsal process, which resembles socius. Tegumen vesicular, wide. Vinculum wide, arched. Juxta asymmetrical, large, with slender long arm and stout, almost triangular arm. Aedeagus curved, small, conical.

Female genitalia.— Antrum curved, narrow with excavated ostium. Ductus bursae narrow, slender. Bursa copulatrix vesicular. Signum in shape of sclerotized ridge, longitudinal into bursa. Ductus seminalis originating near junction between ductus bursae and bursa copulatrix. Lamina ante-vaginalis asymmetrical ridge along ostium. Apophyses anteriores absent. Apophyses posteriores 2 × the papillae anales.

Ecology.— The moth flies in February and May. Hostplant unknown.

Distribution.— **Costa Rica:** Juan Viñas, Palo Verde, Volcan Irazu. **Ecuador:** Quevado; **Venezuela:** Aragua.

Chocophorus mayaensis spec. nov.
(figs 156, 293, 407)

Material.— Holotype ♂: **Costa Rica**, Cartago, Tapanti, 1200-1700 m, 20.viii-15.ix.1999 (V.O. Becker), gent CG 4839 (Becker 110098). Paratypes: 1 ♂, same locality and data (CG); 5 ♂♂, 2 ♀♀, same locality, 1500 m, 30-31.viii.2000 (V.O. Becker), gent CG 4837, 4838 (V.O. Becker 6790, CG); 1 ♂, **Costa Rica**, Puntarenas, Res Biol Monteverde, Est La Casona, 1520 m, i.1992 (N Obando), gent CG 3787 (Inbio); 1 ♀, **Costa Rica**, Volcan Irazu, NW slope, 2200 m, no date (Tattenbach), gent CG 5586 (ZMB).

Diagnosis.— Externally this species cannot be separated from *C. solisi*, which is of bigger size than this species; examination of the genital structures is needed.

Description.— Male, female. Wingspan 26 mm. Head appressedly scaled, pale brown-grey, between base of antennae pale grey. Palpi as long as eye-diameter; pale brown-grey, near tip more brownish tinged. Thorax grey-brown with four longitudinal narrow greyish lines. Tegulae brown-grey. Legs pale grey-brown, with spur pairs of unequal length, median spurs a little longer than lateral spurs.

Fore wings cleft from middle; dark grey-brown. Markings whitish: in basal wing half six longitudinal, narrow lines of which costal two reach base of cleft in first lobe; discal spot, obliquely preceded by dorsal spot; costal spot at middle of first lobe, which continues as longitudinal line towards apex; narrow longitudinal spot along mid dorsum of both lobes. Fringes dark grey-brown with white dashes: two at dorsum of first and second lobe, and dash at costa of second lobe between white dashes of first lobe. Underside dark brown, with single white basal line and white line in tip of first lobe as above.

Hind wings and fringes dark grey-brown. Underside grey-brown. Venous scales in single row, black.

Male genitalia.— Left valve wide and longer than right. Sacculus well-developed and ending in narrow spine. Right valve small, with a small central saccular hub. Uncus stout, spoon-shaped. Socius small, hooked. Tegumen bilobate. Vinculum arched. Aedeagus semicircular, narrow, with small coecum.

Female genitalia.— Ostium left lateral positioned, excavated. Antrum tube-like, narrow, 3 × longer than wide. Ductus bursae long and slender, with two twists. At junction between ductus bursae and bursa copulatrix double sclerite. Bursa copulatrix vesicular, with signum consisting of longitudinal sclerotized ridge and adjacent spiculae. Apophyses anteriores left laterally as single small development. Apophyses posteriores 3 × papillae anales.

Ecology.— The moth flies in January, August and September, at altitudes between 1500 and 2200 meters. Hostplant unknown.

Distribution.— **Costa Rica:** Cartago, Puntarenas, Volcan Irazu.

Etymology.— The species is named after the Maya people, living in the region.

Chocophorus solisi Gielis & Matthews, 1994
(figs 157, 408)

Chocophorus solisi Gielis & Matthews, 1994: 164.

Material.— Holotype ♀: **El Salvador**, Cerro Verde, 6.viii.1967 (O.S. Flint Jr.), gent CG 3356 (USNM).

Diagnosis.— This species is characterized by its large size and chocolate brown colour of the markings.

Description.— Female. Wingspan 32 mm. Head appressedly scaled. Head and collar with some erect filiform scales. Vertex pale brown. Face pale grey-brown. Area between base of antennae ferruginous-white. Palpi slender, curved up, as long as eye-diameter. First segment ferruginous-white with drooping scales. Top of third segment brownish. Antennae dark brown with some pale brown scales, pectinate. Thorax dark brown with double central and lateral white longitudinal line. Tegulae and centro-caudal part of thorax ferruginous pale brown. Metathorax ferruginous pale brown with two dorsal lines centrally as on thorax. Legs pale ferruginous-brown, with longitudinal ochreous lines of scales. Hind legs with two pairs of spurs, both pairs of unequal length.

Fore wings cleft from 2/3, pale to dark chocolate brown, interrupted by ferruginous parts. The paler parts consist of a series of thin parallel lines at basal quarter of wing; incomplete transverse band at one third; and transverse band at center of first lobe. Longitudinal pale line from base of wing up to apex of first lobe and similar incomplete

line in second lobe. These lines are margined by dark brown scales, especially on dorsal margin of this line. Pale scales around base of cleft as well as at dorsum of second lobe. Fringes dark brown with ferruginous-white dash at anal region of first lobe, centrally at dorsum of first lobe and opposite at costa of second lobe, at base of cleft, at anal region of second lobe, and opposite base of cleft at dorsum of second lobe. Underside dark brown with pale markings as above in first and second lobe.

Hind wings ferruginous-brown. Fringes ferruginous dark brown, mixed with ferruginous-white scales at basal half of dorsum of third lobe. Underside dark brown, at third lobe mixed with whitish scales. Venous scales dark brown, in single row.

Male genitalia.— Unknown.

Female genitalia.— Ostium centrally positioned, with a slightly irregular shape, indented centrally. Antrum gradually progressing into narrowing ductus bursae. Ductus seminalis originates near bursa copulatrix. Bursa copulatrix vesicular, some spiculae present on surface. Signum single, in shape of longitudinal sclerotized ridge, with delicate lateral projections. Apophyses anteriores absent. Lamina ante-vaginalis well developed, slightly excavated. Apophyses posteriores well developed, 3 × papillae anales.

Ecology.— The moth flies in August. Hostplant unknown.

Distribution.— **El Salvador**.

Chocophorus venedictoffi Gielis & Matthews, 1994
(figs 158, 294, 409)

Chocophorus venedictoffi Gielis & Matthews, 1994: 167.

Material.— Holotype ♂: **Ecuador**, Pichincha, Rd Quito-Chiriboga km 40, 2480 m, 22.iii.1982 (N. Venedictoff), gent CG 3361 (AME/MGCL). Paratype 1 ♀: **Ecuador**, Pichincha, Rd Quito-Lapalma km 79, 1650 m, 25.iii.1982 (N. Venedictoff), gent CG 3360 (AME/MGCL).

Diagnosis.— This species is characterized by the dark brown colour and the almost complete absence of white markings in the first lobe of the fore wing.

Description.— Male, female. Wingspan 18-20 mm. Head appressedly scaled, mixed grey-white and dark brown. Face dark brown, slightly paler between antennae. Palpi slender, protruding slightly over eye-diameter; collar grey-brown. Antennae grey-brown, shortly ciliated. Thorax dark brown with faint white-brown longitudinal lines, two at dorsum and one laterally. Thoracic lines continue along metathorax and abdomen. Hind legs dark brown, slightly paler at proximal parts of tibiae and tarsal segments, as well as at tibial segment directly beyond base of first spur pair. Hind legs with two spur pairs, both pairs of unequal length.

Fore wings cleft from 2/3, dark chocolate brown with ferruginous-white faint lines at base of wing. An indistinct, slightly oblique ferruginous-white transverse marking at one third of wing length. This marking continues as narrow white line in first lobe. Scattered white scales at costa and dorsum of both lobes. Fringes dark brown, mixed with long white fringe scales at anal region of both lobes, center of first lobe dorsum and costa of opposite part of second lobe, at base of cleft, and just beyond base of cleft at dorsum of second lobe. Underside dark brown with some isolated white scales near apex of first lobe.

Hind wings dark brown, one third of lobe slightly paler. Fringes dark brown with faint pale dashes at center of dorsum of first and second lobe and at one third of dorsum of third lobe. Underside dark brown. Venous scales black, in single row.

Male genitalia.— Left valve slightly wider than right valve. Tip of valvae progressing into spine-like process. Uncus short, broad and curved. Tegumen arched. Anellus arms with asymmetrical processes. Vinculum arched, progressing into a blunt saccus. Aedeagus slender, curved and long. No cornutus.

Female genitalia.— Ostium slightly excavated, left laterally positioned. Antrum gradually narrowing, 3 × longer than wide. Ductus bursae slender. Bursa copulatrix vesicular with longitudinal ridge-like signum with lateral projections. Ductus seminalis originating from junction between ductus bursae and bursa copulatrix. Lamina ante-vaginalis curved, slightly pronounced. Lamina post-vaginalis as poorly sclerotized trapezoid ridge. Apophyses anteriores absent. Apophyses posteriores 2 × papillae analogues.

Ecology.— The moth flies in March. Hostplant unknown.

Distribution.— **Ecuador:** Pichincha.

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References

- Arenberger, E., 1990a. Zur Kenntnis der neotropischen Pterophorinae.— SHILAP, Madrid 18: 127-131.
Arenberger, E., 1990e. Beitrag zur Kenntnis der Pterophoriden Mittelamerikas, 1. Beitrag.— SHILAP, Madrid 18: 201-206.
Arenberger, E. & Bond, K., 1995. Die Pterophoridae der Aufsammlungen von H. Sturm in Kolombien.— SHILAP, Madrid 23: 465-468.

- Arenberger, E. & Wojtusiak, J., 2001. Pterophoridae aus Venezuela.— *Quadrifina* 4: 65-76.
- Barnes, W. & Lindsey, A.W., 1921. The Pterophoridae of America, north of Mexico.— *Contribution Natural History Lepidoptera North America* 4: 280-483.
- Berg, C., 1885. *Quindecim Lepidoptera Nova faunae Reipublicae Argentinae et Uruguayensis*.— *Anales Sociedad Cientifica Argentina* 19: 283-285.
- Bigot, L. & Etienne, J., 2009. Les Pterophoridae de l'île de la Guadeloupe.— *Bulletin de la Société Entomologique de France* 114: 463-467.
- Bigot, L., Gibeaux, C., Nel, J. & Picard, J., 1998. Réflexions sur la classification des Ptérophores français Utilité et utilisation de notion de section.— *Alexanor* 20: 287-302.
- Bourquin, F., 1940. Contribución al estudio de la metamorfosis de dos lepidópteros argentinos.— *Revista de Entomología, Rio Janeiro* 11: 809-820.
- Cápuse, I., 1987. Un nouveau sclérite dans l'armature génitale mâle chez un ptérophoride du Venezuela (*Paravinculia bolivari* n. g., n. sp.).— *Fauna Hipogea y Hemiedafica de Venezuela y de otros Paises de América del Sur* 1 (18): 183-187.
- Comstock, J.A., 1937. Miscellaneous notes on western Lepidoptera.— *Bulletin of the Southern California Academy of Sciences* 36: 111-124.
- Dufrane, A., 1960. Microlépidoptères de la faune Belge (9e note).— *Bulletin Institute Scientific Naturelle Belgique* 36: 5-16.
- Dyar, H.G., 1903. List of lepidoptera taken at Williams, Arizona, by Messrs. Schwarz and Barbar.— 1. Papilionoidea, Sphingoidea, Bombycoidea, Tineoidea (in part).— *Proceedings Entomological Society Washington* 5: 228.
- Felder, R. & Rogenhofer, A.F., 1875. Atlas der Heterocera. In: *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857-1859. Zoology* 2 (2): plate 140.
- Fernald, C.H., 1891. Pterophoridae in Smith, J.B., *List of the Lepidoptera of Boreal America*. American Entomological Society, Philadelphia. 124 pp.
- Fernald, C.H., 1893. New North American microlepidoptera.— *Canadian Entomologist* 25: 94-96.
- Fernald, C.H., 1898. The Pterophoridae of North America.— *Hatch Experimental Station Massachusetts Agriculture College*: 1-83. Boston.
- Fish, C., 1881. Pterophoridae.— *Canadian Entomologist* 13: 70-74, 140-143.
- Fletcher, T.B., 1940. A new South American Plume Moth (Lep., Aluc.).— *Proceedings Royal Entomological Society London (B)* 9: 83-84.
- Gibeaux, C., 1986. *Oidaematophorus nigrofuscus* n. sp. (Lep., Pter.).— *Nouvelle Revue Entomologique (N.S.)* 3: 45-46.
- Gielis, C., 1991. Neotropical Pterophoridae 5. The Pterophoridae of Socorro Island.— *Phegea* 19: 21-23.
- Gielis, C., 1991. A taxonomic review of the Pterophoridae from Argentina and Chile.— *Zoologische Verhandelingen, Leiden* 269: 1-164.
- Gielis, C., 1992. Neotropical Pterophoridae 6: The *Oidaematophorus ochracealis* complex.— *Phegea* 20: 81-94.
- Gielis, C., 1996. Neotropical Pterophoridae 12: New species.— SHILAP, Madrid 24: 81-110.
- Gielis, C., 1999. Neotropical Pterophoridae 16: New Pterophoridae from Costa Rica.— SHILAP, Madrid 27: 305-317.
- Gielis, C., 2003. World catalogue of Insects, 4: Pterophoroidea & Alucitoidea.— pp. 198. Apollo Books, Stenstrup.
- Gielis, C., 2006. Review of the Neotropical species of the family Pterophoridae, part I: Ochyroticinae, Deuterocopinae, Pterophorinae (Platyptiliini, Exelastini, Oxyptilini).— *Zoologische Mededelingen, Leiden* 80: 1-290.
- Gielis, C. & Matthews, D.L., 1994. Neotropical Pterophoridae 9: *Chocophorus*, a new neotropical genus.— *Entomologische Berichten, Amsterdam* 54: 161-170.
- Grinnell, F., 1908. Notes on the Pterophoridae or plume-moths of Southern California, with descriptions of new species.— *Canadian Entomologist* 19: 313-321.
- Grossbeck, J.A., 1917. Insects of Florida. IV, Lepidoptera.— *Bulletin American Museum Natural History*. 37: 134-137.
- Hübner, J., 1796-1834. *Sammlung Europaeische Schmetterlinge*. 1-78 pp. Augsburg.

- Landry, B. & Gielis, C., 1992. A synopsis of the Pterophoridae of the Galapagos Islands, Ecuador.— *Zoologische Verhandelingen*, Leiden 276: 1-42.
- Landry, B., Roque-Abelo, L. & Matthews, D.L., 2004. Supplemental additions to the Pterophoridae of the Galapagos Islands, with description of a new species of *Adaina*.— *Mitteilungen Schweizerischen Entomologischen Gesellschaft* 77: 289-310.
- Linnaeus, C., 1758. *Systema Naturae, Pars Lepidoptera*: 1-824 pp. Ed. X. Laurentii Salvii, Holmiae.
- Matthews, D.L., 1989. The plume moths of Florida. MS Thesis. University of Florida, Gainesville. 347 pp.
- Matthews, D.L. & Lott, T.A., 2005. Larval hostplants of the Pterophoridae.— *Memoirs American Entomological Institute* 76: 1-324.
- Matthews, D.L. & Maharajh, B.V., 2009. *Adaina primulacea* Meyrick, 1929: A gall-inducing Plume Moth of Siam Weed from South Florida and the Neotropics.— *Tropical Lepidoptera Research* 19: 64-70.
- McDunnough, J., 1938. Notes on certain of Walsingham's species of *Oidaematophorus* with descriptions of new species.— *Canadian Entomologist* 70: 128-132.
- Meyrick, E., 1908 (dated 1907). Notes and descriptions of Pterophoridae and Orneodidae.— *Transactions Entomological Society London* 1907: 471-511.
- Meyrick, E., 1913. Descriptions of South American micro-lepidoptera.— *Transactions Entomological Society London* 1913: 170.
- Meyrick, E., 1913. Exotic Microlepidoptera 1: 97-128.
- Meyrick, E., 1921. Exotic Microlepidoptera 2: 385-416.
- Meyrick, E., 1921. Exotic Microlepidoptera 2: 417-448.
- Meyrick, E., 1926. Exotic Microlepidoptera 3: 289-320.
- Meyrick, E., 1926. Microlepidoptera from the Galapagos Islands and Rapa.— *Transactions Entomological Society London* 74: 276.
- Meyrick, E., 1929 (dated 31 December 1928). The Micro-Lepidoptera of the "St. George" Expedition.— *Transactions Entomological Society London* 76: 489-521.
- Meyrick, E., 1930. Exotic Microlepidoptera 3: 545-576.
- Meyrick, E., 1930. Ergebnisse einer zoologischen Sammelreise nach Brasilien, insbesondere in das Amazonasgebiet, ausgeführt von Dr. H. Zerny.— *Annalen Naturhistorischen Museums Wien* 44: 223-268.
- Meyrick, E., 1931. Microlepidoptera from South Chile and Argentina.— *Anales Museo Nacional Historia Natural Buenos Aires* 36: 377-415.
- Meyrick, E., 1931. Reports of an expedition to Brazil and Paraguay in 1926-27: Microlepidoptera.— *Journal Linnaean Society London* 37: 277-284.
- Meyrick, E., 1931. Die Lepidopteren der Deutschen Gran-Chaco Expedition 1925-26 mit Berücksichtigung der Sammelergebnisse von Professor Hosseus in der Sierra de Cordoba. III. Pterophoridae-Tineidae.— *Mitteilungen Münchener Entomologischen Gesellschaft* 21: 37-40.
- Meyrick, E., 1932. Exotic Microlepidoptera 4: 225-256.
- Meyrick, E., 1932. Exotic Microlepidoptera 4: 321-352.
- Möschler, H.B., 1890. Die Lepidopteren-Fauna der Insel Porto Rico.— *Abhandlungen Senckenbergischen Naturforschenden Gesellschaft*, Frankfurt 16: 39-160.
- Murtfeldt, M.E., 1880. New plume moths.— *American Entomologist* 3 (N.S.): 235-236.
- Packard, A.S., 1874 (1873). Catalogue of the Pyralidae of California, with descriptions of new Californian Pterophoridae.— *Annals Lyceum Natural History New York* 10: 257-267.
- Philippi, R.A., 1864. Beschreibung einiger neuer Chilenischer Schmetterlinge.— *Linnaea Entomologica*. 13: 296-297.
- Powell, J.A. & Chemsak, J.A., 1994. Additional data on the geographic distribution and adult activity of the diurnal, mimetic plume moth, *Oidaematophorus chamelei* (Pterophoridae).— *Journal Lepidoptera Society* 48: 71-73.
- Sepp, J., 1855. *De Vlinders van Suriname*, III. 311-312, plate 144. Amsterdam.
- Tutt, J.W., 1905. Types of the genera of the Agdistid, Alucitid and Orneodid plume moths.— *Entomologist's Record Journal Variation* 17: 34-37.
- Walker, F., 1864. List of the specimens of lepidopterous insects in the collection of the British Museum 30. Lepidoptera Heterocera: pp. 926-953. London.

- Wallengren, H.D.J., 1862 (dated 1859). Skandinaviens Fjädermott.— Kungliga Svenska Vetenskapsakademiens Handlingar 3 (7): 1-25.
- Walsingham, M.A., 1880. Pterophoridae of California and Oregon. i-xvi, 1-66 pp. London.
- Walsingham, M.A., 1892 (dated 1891). On the micro-lepidoptera of the West Indies.— Proceedings Zoological Society London 1892: 492- 542.
- Walsingham, M.A., 1897. Revision of the West-Indian microlepidoptera, with descriptions of new species.— Proceedings Zoological Society London 1897: 54-61.
- Walsingham, M.A., 1915. Insecta. Lepidoptera-Heterocera. 4. Tineina, Pterophorina, Orneodina, and Pyralidina and Hepialina (part.): i-xii, 1-482 pp. In: Biologia Centrali-Americanana. Leiden.
- Wolcott, H.G., 1951 (dated 1948). The Insects of Puerto Rico.— Journal of Agriculture University Puerto Rico 32: 705-707.
- Yano, K. & Heppner, J.B., 1983. Description of Hamakua Pamakani Plume Moth from Hawaii (Lep., Pter.).— Proceedings Hawaii Entomological Society 24: 335-341.
- Zeller, P.C., 1872-1875. Beiträge zur Kenntnis der nordamerikanischen Nachtfalter, besonders der Mikro-lepidopteren, I-III.— Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft 22: 447-566; 23: 201-334; 24: 207-360, 3 plates.
- Zeller, P.C., 1874. Lepidoptera der Westküste Amerika's.— Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft 24: 423-448, plate 12.
- Zeller, P.C., 1877. Exotische Microlepidoptera.— Horae Societatis Entomologicae Rossicae. 13: 460-486, plate 6.

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Fig. 3. *Hellinsia chamelei* (Gielis, 1992). Costa Rica, Guanacaste, Playa Tamarindo, 14.vi.1986 (Chem-sak, ao) (CG).



Fig. 4. *H. elhacha* Gielis, 1999. Paratype. Costa Rica, Guanacaste, Est Murcielago, A.C.G., 100 m, 9-19.ii.1994 (C. Cano), gent CG 3879 (CG).



Fig. 5. *H. ochracealis* (Walker, 1864). Brazil, PA, Capitao Poco, 25-31.i.1984 (V.O. Becker) (CG).



Fig. 6. *H. paraochracealis* (Gielis, 1992). Brazil, Distrito Federal, Planaltina, 1000 m, vii.1983 (V.O. Becker) (CG).



Fig. 7. *H. spiculibursa* Gielis, 1996. Holotype. Venezuela, San Estevan nr Puerto Caballo, vi-vii.1877 (Hahnel de Sagan), gent CG 5040 (BMNH).



Fig. 8. *H. homodactylus* (Walker, 1864). Canada, Newfoundland, Pasadena, 1.viii.2000 (J.R. Grehan & C.A. Violette) (CG).



Fig. 9. *H. mollis* (Walsingham, 1915). Holotype. Guatemala, Cerro Zumil, 1220-1525 m, no date 1880 (G.C. Champion), gent BM 18147 (BMNH).



Fig. 10. *H. paccha* spec. nov. Paratypes. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1290 m, 21.X.2002 (C. & F.K. Gielis & V. Pelz) (CG).



Fig. 11. *H. angulofuscus* (Gielis, 1991). Paratype. Paraguay, Asuncion, 15-30.vi.1905 (Babarcy), C4102 (CG).



Fig. 12. *H. nodipes* (Zeller, 1877). Ecuador, Azuay, PN Cajas, Laguna Llaviuco, 3225 m, 12.x.2002 (C. & F.K. Gielis) (CG).



Fig. 13. *H. pelospilus* (Zeller, 1877). Holotype. (Peru), Chanchamayo, no date (Thamm), gent Ar. (MNHU)



Fig. 14. *H. praealtus* (Walsingham, 1915). Holotype. Guatemala, Totonicapam, 2600-3100 m, viii.1880 (G.C.), gent BM 18152 (BMNH).



Fig. 15. *H. puruha* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, Proaño - Inapula, CREA- Domono, 1100 m, 23-24.vi.1999 (V. Pelz), gent CG 4511 (CG).



Fig. 16. *H. emmorus* (Walsingham, 1915). Holotype. Mexico, Vera Cruz, Orizaba, xii.1887 (F.D. Goodman & O. Salvin), gent BM 18160 (BMNH).



Fig. 17. *H. nauarches* (Meyrick, 1930). Bolivia, Songo Valley, Cuticicho, 3700 m, 4.xii.1953 (W. Forster), gent CG 5671 (CG).



Fig. 18. *H. orellanai* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20.xi.1989 (N. Venedictoff), gent CG 5948 (AME/MGCL).



Fig. 19. *H. paleaceus* (Zeller, 1873). USA, Kansas, Clark Co, Clark st Lake Park, e.l. 10.viii.1990 (C. Gielis) (CG).



Fig. 20. *H. pseudobarbata* Gielis, 1999. Holotype. Costa Rica, Puntarenas, A.C. Amistad, Buenos Aires, Sector Altamira, 10 km SW del Cerro Billey, 1400 m, x.1991 (M. Segura), gent CG 3891 (Inbio).



Fig. 21. *H. spermatias* (Meyrick, 1908). Paraguay, Paraguari, Sapucay, 16.iv.1994 (U. Drechsel) (CG).



Fig. 22. *H. sucrei* spec. nov. Holotype. Ecuador, Carchi, El Angel +12,5 km, 3500 m, 12.i.1985 (N. Venedictoff), gent CG 5931 (AME/MGCL).



Fig. 23. *H. beneficus* (Yano & Heppner, 1983). Hawai'i Island, Hawai'i Island, Volcana, 1160 m, 12.vii.1967 (F.G. Howarth) (CG).



Fig. 24. *H. canari* spec. nov. Paratype. Ecuador, Morona-Santiago, Macas, Orillas del Rio Upano, 1000 m, 17.iv.1998 (V. Pelz) (CG).



Fig. 25. *H. oxyntes* (Meyrick, 1908). Lectotype. Brasil, São Paulo, (19)07 (R), gent BM 18713 (BMNH).



Fig. 26. *H. hoguei* Gielis, 1996. Paratype. Mexico, Mexico, La Marquesa, Las Cruces NP, 5-9.vii.1965 (Flint & Ortiz) (CG).



Fig. 27. *H. discors* (Meyrick, 1913). Lectotype. British Guyana, Mallali, i-iii (Parish), gent BM 18694 (BMNH).



Fig. 28. *H. pallens* spec. nov. Paratype. Ecuador, Pichincha, Septimo Paraísa Res, 1300 m, 1°25'S 78°46,6'W, 9.v.2002 (B. Landry), gent CG 4830 (CG).



Fig. 29. *H. scripta* Gielis, 1999. Paratype. Costa Rica, Puntarenas, Res Biol Monteverde, Est La Cañona, 1520 m, vii.1991 (N. Obando), gent CG 3873 (CG).



Fig. 30. *H. agraphodactylus* (Walker, 1864). Holotype. Jamaica, no date (Gosse), gent BM 18172 (BMNH).



Fig. 31. *H. epileucus* (Walsingham, 1915). Costa Rica, Monteverde, Puntarenas, 1400 m, 22-24. vii.1990 (S.M. & J. Powell) (CG).



Fig. 32. *H. lenis* (Zeller, 1877). Ecuador, Napo, St Elena - Guacama km 2,7, 1730 m, 14.xii.1984 (N. Venedictoff), gent CG 5939 (CG).



Fig. 33. *H. maulicus* (Gielis, 1991). Chile, O'Higgins, Cachapoal, RN Rio los Cipreses, 40 km E Rancagua, 23.xi.2000 (C. & F.K. Gielis) (CG).



Fig. 34. *H. nigricalcarius* Gielis, 1996. Holotype. Colombia, Sierra del Libano, 1830 m, v.1899 (H.H. Smith), gent CG 5092 (BMNH).



Fig. 35. *H. cajanuma* spec. nov. Holotype. Ecuador, Loja, 10 km SE Loja, PN Podocarpus, Cajanuma Ranger Stt, 2850 m, 8.x.2002 (C. & F.K. Gielis), gent CG 4929 (CG).



Fig. 36. *H. siskaellus* (Gielis, 1991). Chile, Araucania, Malleco, 35 km W Angol, PN Nahuelbuta, Coimallin Camp, 1300 m, 11.i.2001 (Gielis & van der Wolf) (CG).



Fig. 37. *H. solanoi* Gielis, 1999. Holotype. Costa Rica, Limon, P.N. Tortuguero, Est Cuarto Esquinas, 0 m, x.1990 (J. Solano), gent CG 3877 (Inbio).



Fig. 38. *H. cuculla* spec. nov. Paratype. Ecuador, Loja, Rd Loja - Piñas km 58, 2030 m, 21.iv.1982 (N. Venedictoff), gent CG 5950 (CG).



Fig. 39. *H. tetraonipennis* (Walsingham, 1915). Holotype. Guatemala, Cerro Zunil, 1220-1525 m, 1880 (Chapman), gent BM 18148 (BMNH).



Fig. 40. *H. batallonica* Arenberger & Wojtusiak, 2001. Holotype. Venezuela, Parama el Batallon, Quebrada de los Pios, 2950 m, 4.II.1986 (J. Wojtusiak) (J. Wojtusiak).



Fig. 41. *H. betsiae* (Gielis, 1991). Chile, Maule, Talca, 65 km E Talca, RN Altos del Lircay, 16-17. xii.2000 (C. & F.K. Gielis) (CG)



Fig. 42. *H. caras* spec. nov. Paratype. Ecuador, Napo, 5 km W Papallacta, Laguna Papallacta, 3430 m, 0°22'27"S 78°9'50"W, 28.x.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5242 (CG).



Fig. 43. *H. crescents* (Meyrick, 1926). Costa Rica, Cartago, Cerro de la Muerte, Villa Mills, 3100 m, 2.xii.2003 (K. Nishida), gent CG 5471 (CG).



Fig. 44. *H. falsus* (Barnes & Lindsey, 1921). Mexico, Baja California, Laguna Salada, Solton Sea, 25. iii.1967 (Zool Inst Saarland), gent CG 5534 (CG).



Fig. 45. *H. fishii* (Fernald, 1893). USA, Wyoming, Carbon Co, 30 km E Baggs, 9.viii.1990 (C. & F.K. Gielis) (CG).



Fig. 46. *H. inquinatus* (Zeller, 1873). USA, Minnesota, Chisago Co, Wyoming Dunes WMA, 13. vi.1996 (M. Sabourin) (CG).



Fig. 47. *H. monserratae* Arenberger & Bond, 1995. Holotype. Colombia, Parano de Monserate, nr Bogota, 2.ii.1990 (Sturm), gent BM 21123 (BMNH).



Fig. 48. *H. phloeochroa* (Walsingham, 1915). Holotype. Mexico, Guerrero, Amula, 1830 m, viii (H.H. Smith), gent BM 18156 (BMNH).



Fig. 49. *H. pizarroi* spec. nov. Holotype. Ecuador, Moreno-Santiago, Gualaceo - Limon km 36, 2900 m, 15.ii.1983 (N. Venedictoff), gent CG 5924 (AME/MGCL).



Fig. 50. *H. ruminahuii* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 40, 2480 m, 22.iii.1982 (N. Venedictoff), gent CG 5940 (AME/MGCL).



Fig. 51. *H. surinamensis* (Sepp, 1855). Paraguay, Paraguari, Sapucay, 7.vi.1996 (U. Drechsel) (CG).



Fig. 52. *H. conjunctus* (Zeller, 1877). Holotype. Colombia, Bogota, n.d. (V. Nolcken), gent BM 18704 (BMNH).



Fig. 53. *H. magnus* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20.xi.1984 (N. Venedictoff), gent CG 5928 (AME/MGCL).



Fig. 54. *H. paramoi* Arenberger & Wojtusiak. Paratype. Brazil, São Paulo, Est. Biol. Doracea, nr Salesopolis, 850 m, 27.ix.1971 (E.G. & E.A. Munroe), gent CG 6192 (CNC).



Fig. 55. *H. devriesi* (B. Landry & Gielis, 1992). Martinique, Fort de France, 23.i.1995 (F. Deknuydt), gent MHNG 3249 (MHNG).



Fig. 56. *H. glochinias* (Meyrick, 1908). Lectotype. Brazil, Petropolis, 07 (R.) (BMNH).



Fig. 57. *H. argutus* (Meyrick, 1926). Ecuador, Carchi, El Angel, 3500 m, 16.i.1985 (N. Venedictoff) (AME/MGCL).



Fig. 58. *H. balanotes* (Meyrick, 1908). USA, Texas, Brownsville, 20.i.1937 (T.N. Freeman) (CG).



Fig. 59. *H. fissuralba* Gielis, 1996. Holotype. Mexico, Morelos, 12 Mi E Cuernavaca, 4300', 14. viii.1954 (J.G. Chillcott), gent CG 6113 (CNC).



Fig. 60. *H. fusciciliatus* (Zeller, 1877). Costa Rica, Monteverde, 7.IV.1998 (H. Hendriksen), gent CG 4652 (CG).



Fig. 61. *H. monteverda* Gielis, 1999. Holotype. Costa Rica, Punta, R.B. Monteverde, 1520 m, x.1993 (N. Obando), gent CG 3876 (Inbio).



Fig. 62. *H. quitus* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, 1000 m, 11-23. xii.1997 (V. Pelz), gent CG 4508 (CG).



Fig. 63. *H. obandoi* Gielis, 1999. Holotype. Costa Rica, Puntarenas, Estación La Casona, 1250 m, viii.1993 (N.G. Obando), gent CG 3874 (Inbio).



Fig. 64. *H. sublatus* (Walsingham, 1915). Holotype. Mexico, Guerrero, Amula, 1830 m, vii.18(..) (H.H. Smith) (BMNH).



Fig. 65. *H. tinctus* (Walsingham, 1915). Holotype. Mexico, Guerrero, Amula, 1830 m, viii-ix (H.H. Smith) (BMNH).



Fig. 66. *H. hololeucus* (Zeller, 1874). Chile, Maule, Caquenes, 15 km S Curanipe, 50 m, 29.xi.2000 (C. & F.K. Gielis) (CG).



Fig. 67. *H. phlegmaticus* (Walsingham, 1915). Holotype. Mexico, Vera Cruz, Jalapa, no date (M. Trujillo), gent BM 18153 (BMNH).



Fig. 68. *H. postnigrata* spec. nov. Holotype. Ecuador, Pichincha, Septimo Paraíso Res, 0°01'S 78°47'W, 1300 m, 10.v.2002 (B. Landry & L. Roque), gent CG 4833 (Mus. Genève).



Fig. 69. *H. palmatus* (Meyrick, 1908). Lectotype. Brazil, São Paulo, (19)07, (R.), gent BM 18864 (BMNH).



Fig. 70. *H. montezerpae* Arenberger & Wojtusiak, 2001. Holotype. Venezuela, Cordillera de Mérida, Merida, Monte Zerpa, 3250 m, 13.II.1996 (J. Wojtusiak) (J. Wojtusiak).



Fig. 71. *H. grandis* (Fish, 1881). USA, California, Petaluma, 25.viii.1938 (E.C. Johnston) (CG).



Fig. 72. *H. huayna* spec. nov. Paratype. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1290 m, 26.ix.2002, (C. & F.K. Gielis & V. Pelz), (CG).



Fig. 73. *H. nephogenes* (Meyrick, 1926). Ecuador, Galapagos Islands, Isla Isabéla, Puerto Villamil, 2.iii.1989 (B. Landry) (CG).



Fig. 74. *H. benalcazari* spec. nov. Holotype. Ecuador, Napo, Puente Azuela, 1560 m, 11.iv.1985 (N. Venedictoff), gent CG 4365 (AME/MGCL).



Fig. 75. *H. calais* (Meyrick, 1930). Holotype. Brazil, Pernambuco, Serra do Bernade, no date (Paravincini), gent BM 18679 (BMNH).



Fig. 76. *H. longifrons* (Walsingham, 1915). USA, Arizona, Pima Co, Madera Canyon, 1450 m, 23.v.1997 (H.W. van der Wolf) (CG).



Fig. 77. *H. papallacta* spec. nov. Holotype. Ecuador, Napo, Papallacta +10 km, 2750 m, 11.xii.1984 (N. Venedictoff), gent CG 4368 (AME/MGCL).



Fig. 78. *H. basalis* (Möschler, 1890). Puerto Rico, 7 km S Ciales, 950 m, iv-v.1969 (W. Plath), gent CG 6418 (CG).



Fig. 79. *H. barbatus* Gielis, 1996. Ecuador, Napo, 15 km SE Cosanga, Cocodrilo, 1850 m, 30.ix.2002 (C. & F.K. Gielis) (CG).



Fig. 80. *H. cervicalis* (Meyrick, 1932). Holotype. Bolivia, Rio Songo, 750 m, gent CG 6324 (NMW).



Fig. 81. *H. ochricostatus* (Zeller, 1877). Ecuador, Azuay, PN Cajas, Laguna Llaviuco, 3225 m, 5.x.2002 (C. & F.K. Gielis) (CG).



Fig. 82. *H. nivalis* (Meyrick, 1908). Lectotype. Jamaica, New Castle, (19)07 (R.), gent BM 18184 (BMNH).



Fig. 83. *H. shyri* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, Proaño - Inapula, CREA - Domono, 1100 m, 20-23.iv.1998 (V. Pelz), gent CG 4509 (CG).



Fig. 84. *H. delospilus* (Meyrick, 1921). Ecuador, Morona-Santiago, Macas, 1000 m, 11-23.xii.1997 (V. Pelz) (CG).



Fig. 85. *H. ignifugax* (Walsingham, 1915). A. Pale form: Holotype. Guatemala, Baja Vera Paz, San Geronimo, 885 m, 1879-1880 (G.C. Champion) (BMNH); B. Dark form: Paratype. Guatemala, Totonicapam, 2600-3200 m, viii.1880 (G.C. Champion), gent CG 5086 (BMNH)





Fig. 86. *H. glaphyrottes* (Meyrick, 1908). Paraguay, Gualra, Meljarego, 23.vi.1994 (U. Drechsel) (CG).



Fig. 87. *H. stadias* (Meyrick, 1908). Argentina, Salta, San Lorenzo, 4.iv.1955 (Förster), gent CG 5656 (ZSM).



Fig. 88. *H. mallecoicus* (Gielis, 1991). Chile, O'Higgins, Cachapoal, RN Rio los Cipreses, 40 km E Rancagua, 1200 m, 13.ii.2001 (Schouten & van der Wolf) (CG).



Fig. 89. *H. paraglochinias* Gielis, 1996. Ecuador, Pichincha, Rd. Quito - Chiriboga km 40, 2480 m, 28.iii.1982 (N. Venedictoff) (CG).



Fig. 90. *H. scribarius* (Meyrick, 1926). Ecuador, Napo, Cosanga - Tena km 6,5, 2200 m, 22.xii.1984 (N. Venedictoff), gent CG 5938 (AME/MGCL).



Fig. 91. *H. cristobalis* (B. Landry & Gielis). Ecuador, Galapagos Islands, Isla Isabéla, Volcan Darwin, 17.v.1992 (B. Landry) (CG).



Fig. 92. *H. fissuripuncta* Gielis, 1999. Paratype. Costa Rica, Guanacasta, 9 km S Sta Cecilia, Est Pitilla, 700 m, iv.1994, gent CG 3870 (CG).



Fig. 93. *H. grandaevus* (Meyrick, 1931). Chile, Los Lagos, Valdivia, 12 km NE Los Lagos, 5.xii.2000 (C. & F.K. Gielis) (CG).



Fig. 94. *H. obscuricilia* Arenberger & Wojtusiak. Costa Rica, San Jose, PN Chirippo, Llano Bonito, 2500 m, 23.vi.2006 (K. Nishida), gent CG 5472 (CG).



Fig. 95. *H. praenigratus* (Meyrick, 1921). Ecuador, Napo, Puente Azuela, 11.iv.1985 (N. Venedictoff) (CG).



Fig. 96. *H. fumiventris* (Zeller, 1877). Ecuador, Napo, 10 km SSE Cosanga, 2180 m, 23.x.2002 (C. & F.K. Gielis) (CG).



Fig. 97. *H. tupaci* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, 1100 m, 11-23.xii.1997 (V. Pelz), gent CG 4516 (CG).



Fig. 98. *H. malesanus* (Meyrick, 1921). Ecuador, Napo, 12 km SSE Cosanga, 2120 m, 24.x.2002 (C. & F.K. Gielis) (CG).



Fig. 99. *H. aguilerae* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20.xii.1984 (N. Venedictoff), gent CG 5920 (AME/MGCL).



Fig. 100. *H. alfaroi* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, Gral. Proaño, Rio Jurumbaino, 1100 m, 14-15.iv.1998 (V. Pelz), gent CG 4513 (CG).



Fig. 101. *H. angela* spec. nov. Holotype. Ecuador, Carchi, El Angel +12,5 km, 3500 m, 12.i.1985 (N. Venedictoff), gent CG 5937 (AME/MGCL).



Fig. 102. *H. bogotanus* (Felder & Rogenhofer, 1875). Colombia, Bogota (BMNH).



Fig. 103. *H. coquimboicus* (Gielis, 1991). Holotype. Chile, Coquimbo, Nague, 11 km N Las Vilos, 20 m, 4-5.xi.1981 (D. & M. Davis), gent CG 6065 (USNM).



Fig. 104. *H. fuscotransversa* Gielis, 1996. Holotype. Peru, Carabaya, Oconeque, 2150 m, dry season, vii.(19)04 (G. Ockenden), gent CG 5042 (BMNH).



Fig. 105. *H. hebrus* (Meyrick, 1932). Holotype. Costa Rica, Orosi, 1525 m, no date, gent CG 6323 (NMW).



Fig. 106. *H. investis* Gielis, 1999. Holotype. Costa Rica, Cartago, Ref Nac Fauna Silv Tapanti, 1150 m, iv.1992 (G. Mora), gent CG 3893 (Inbio).



Fig. 107. *H. lumbaquia* spec. nov. Paratype without abdomen. Ecuador, Napo, Lumbaqui - Texaco, 850 m, 8.III.1975 (N. Venedictoff) (CG).

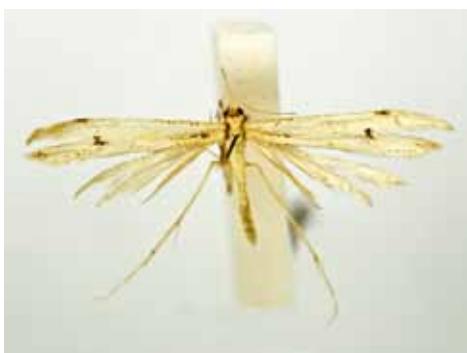


Fig. 108. *H. maldonadoica* spec. nov. Holotype. Ecuador, Carchi, Rd Maldonado -63,5 Km, 2850 m, 16.i.1985 (N. Venedictoff), gent CG 5941 (AME/MGCL).



Fig. 109. *H. milleri* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 27, 3180 m, 20.iii.19982 (N. Venedictoff), gent CG 5953 (AME/MGCL).



Fig. 110. *H. montufari* spec. nov. Holotype. Ecuador, Carchi, des. El Carmelo km 15, 3250 m, 7.i.1983 (N. Venedictoff), gent CG 5947 (AME/MGCL).



Fig. 111. *H. morenoi* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, 1000 m, 11-23.xii.1997 (V. Pelz), gent CG 4515 (CG).



Fig. 112. *H. ossipellis* (Walsingham, 1897). Holotype. Dominican Rep., Puerto Plato, 15.v.1894, (BMNH).



Fig. 113. *H. pichincha* spec. nov. Holotype. Ecuador, Pichincha, Quito - Chiriboga km 33, 2650 m, 20.xi.1985 (N. Venedictoff), gent CG 5933 (AME/MGCL).



Fig. 114. *H. socorroica* (Gielis, 1991). Holotype. Mexico, Socorro Is., Revillagigedo Arch., 405 m, 6.vi.1977 (Hogue & Evans, sta. 2), gent CG 6104 (LACM).



Fig. 115. *H. tepidus* (Meyrick, 1922). Holotype. Costa Rica, Vulcan Vazu, 1220 m, 1920 (BMNH).



Fig. 116. *H. urbanus* (Walsingham, 1915). Holotype. Guatemala, Baja Vera Paz, San Gerónimo, 885 m, 1880 (G.C. Chapman), gent BM 18150 (BMNH).



Fig. 117. *H. zetes* (Meyrick, 1930). Ecuador, Morona-Santiago, Macas, 1000 m, 2-8.i.1998 (V. Pelz), gent CG 4512 (CG).



Fig. 118. *Oidaematophorus eupatorii* (Fernald, 1891). USA, Georgia, Murray Co, Chattahoochee NF, E Chatsworth, 2-3.vi.1994 (T.A. Lott & D.L. Matthews) (CG).



Fig. 119. *O. grisescens* (Walsingham, 1880). Canada, British Columbia, Lillooet, Seton Lake, 24.vi.1926 (McDunnough) (CG).



Fig. 120. *O. nigrofusca* Gibeaux, 1986. Holotype. Venezuela, Páramo de Piedras Blancas, 4200 m, 10.ix.1985 (M. Lamotte), gent Gibeaux 2669 (Gibeaux).



Fig. 121. *O. phaceliae* McDunnough, 1938. Mexico, Baja California, Laguna Salada, 7.vii.1967 (Zool. Inst. Saarbruecken), gent CG 5535 (CG).



Fig. 122. *O. pseudotrachyphloeus* spec. nov. Paratype. Peru, Lima, Res Nac de Lachay, 11°21'S 77°21'W, 18.xi.1998 (B. Landry), gent CG 4828 (CG).



Fig. 123. *O. trachyphloeus* (Meyrick, 1926). Costa Rica, Volcan Irazu, NW slope, 2200 m, (S.G. Tatzenbach) (CG).



Fig. 124. *Emmelina aethes* (Walsingham, 1915). Holotype. Mexico, Vera Cruz, Jalapa, 1375 m, 1887 (W. Schaus) (BMNH).



Fig. 125. *E. buscki* (Barnes & Lindsey, 1921). Mexico, Morelos, 12 Mi E Cuernavaca, 1300 m, 14. viii.1954 (J.G. Chillcott), gent CG 6113 (CNC).



Fig. 126. *E. jason* (Meyrick, 1930). Holotype. Brazil, Queluz, no date (P. Germain), gent BM 18862 (BMNH).



Fig. 127. *E. monodactyla* (Linnaeus, 1758). Netherlands, Zuid-Holland, Lexmond, 20.xi.2010 (C. Gielis) (CG).



Fig. 128. *E. suspiciosus* (Meyrick, 1921). Lectotype. Ecuador, Huigra, 1370 m, vi.1914 (Parish), gent BM 18177 (BMNH).



Fig. 129. *Adaina costarica* Gielis, 1992. Paratype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker) (CG).



Fig. 130. *A. simplicius* (Grossbeck, 1917). Paratype. Costa Rica, Turrialba. 600 m, vii.1981 (V.O. Becker), gent CG 6162 (CG).



Fig. 131. *A. excreta* Meyrick, 1930. Argentina, Jujuy, PN Calilegua, 1 km N Mesada las Colmenas, 1100 m, 25.i.1996 (NEENA) (CG).



Fig. 132. *A. parainvida* Gielis, 1992. Paratype. Costa Rica, Turrialba. 600 m, vii.1981 (V.O. Becker) (CG).



Fig. 133. *A. atahualpa* spec. nov. Paratype. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1°24'39"S 78°14'23"W, 1290 m, 26.ix.2002 (C. & F.K. Gielis & V. Pelz) (CG).



Fig. 134. *A. beckeri* Gielis, 1992. Belize, Cayo distr., Pine Ridge mt, Hidden Valley, 15.i.1999 (H. Hendriksen), gent CG 4654 (CG).



Fig. 135. *A. bernardi* Gielis, 1992. Paratype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6160 (CG).



Fig. 136. *A. obscura* Gielis, 1999. Holotype. Costa Rica, Guanacaste, 8 km SW Cuajiniquil, Est Murielago, 100 m, vii.1990 (Curzo Microlep.), gent CG 3889 (Inbio).



Fig. 137. *A. invida* (Meyrick, 1908). Paraguay, Gualra, Calle Florida, 13-16.ii.1993 (U. Drechsel), gent CG.



Fig. 138. *A. primulacea* Meyrick, 1929. Holotype. Panama, Taboga Island, Gulf of Panama, 150 m, 23.ix.(19)24 (St. George Expedn. C. L. Collonette), gent BM 18456 (BMNH).



Fig. 139. *A. everdinae* Gielis, 1991. Argentina, Tucuman, 11 km S Tacanas, 28 WSW Trancas, 800 m, 16-17.xii.1995 (NEENA), gent CG 2875 (CG).



Fig. 140. *A. desolata* Arenberger & Bond, 1995. After Arenberger & Bond, 1995.



Fig. 141. *A. perplexus* (Grossbeck, 1917). Cuba Occ., Matanzas, Varadero, 17.i.1983 (V. Felix) (CG).



Fig. 142. *A. thomae* (Zeller, 1877). British Virgin Islands, Guana Island, 0-80 m, 9-23.vii.1987 (S.E. Miller & V.O. Becker) (CG).



Fig. 143. *A. planaltina* Gielis, 1992. Holotype. Brazil, D(istrato) F(ederal), Planaltina, 1000 m, viii.1983 (V.O. Becker), gent CG 6150 (Becker nr. 41272).



Fig. 144. *A. zephyria* Barnes & Lindsey, 1921. Bolivia, Yungas, Coroico, 1900 m, 14-19.v.1950 (Förster), gent CG 5661 (ZSM).



Fig. 145. *A. bipunctatus* (Möschler, 1890). Brazil, Rio de Janeiro, Marica, Ponta Negra, Barra de Jaconé, 3.iii.1986 (Lewinsohn) (CG).



Fig. 146. *A. hodias* (Meyrick, 1908). Ecuador, Morona-Santiago, Macas, Proaño - Inapula, CREA Domono, 1100 m, 20-23.iv.1998 (V. Pelz) (CG).



Fig. 147. *A. bolivari* Câpuse, 1987. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1°24'39"S 78°14'23"W, 1290 m, 26.ix.2002 (C. & F.K. Gielis & V. Pelz) (CG).



Fig. 148. *A. fuscahodias* Gielis, 1992. Costa Rica, Puntarenas, Monteverde, Est Biol Monteverde, 1550 m, 9.vii.2006 (K. Nishida), gent CG 5473 (CG).

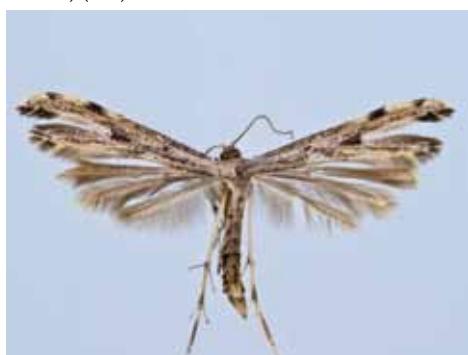


Fig. 149. *A. ambrosiae* (Mürtfeldt, 1880). USA, Texas, Bexar Co, San Antonio, 175 m, 10.ii.1995 (C. Gielis) (CG).



Fig. 150. *A. scalesiae* B. Landry, Roque & Matthews, 2004. Ecuador, Galapagos Islands, Pinta, 400 m, 18.iii.1992 (B. Landry) (CG).



Fig. 151. *A. ipomoeae* Bigot & Etienne, 2009. Puerto Rico, Patillas, viii.1987 (V.O. Becker) (CG).



Fig. 152. *Patagonophorus murinus* Gielis, 1991. Chile, Araucania, Malleco, 35 km SE Lonquimay, 20 km NE Icalma, 1100 m, 3-4.ii.2001 (Schouten & Van der Wolf) (CG).



Fig. 153. *Chocophorus alternaria* (Zeller, 1874). A. Larva. Chile, Bio Bio, 12 km N Chillan, el. *Echium vulgare*, 12.xi.2000 (C. Gielis).



Fig. 153. *Chocophorus alternaria* (Zeller, 1874). B. Pupa. Same locality, el. 16.xii.2000 (CG).



Fig. 153. *Chocophorus alternaria* (Zeller, 1874). C. Imago. Same locality, el. 16.xii.2000 (CG).



Fig. 154. *C. carabayus* (Arenberger, 1990). Argentina, Jujuy, PN Calilegua, La Abra de las Cañas, 1700 m, 6.i.1996 (NEENA) (CG).



Fig. 155. *C. leptochorda* (Meyrick, 1913). Ecuador, Morona-Santiago, Macas, Proaño - Alshi, 5 km SE Alshi, 1700 m, 27.ix-4.x.2000 (V. Pelz) (CG).



Fig. 156. *C. mayaensis* spec. nov. Paratype. Costa Rica, Cartago, Tapanti, 1200-1700 m, 20.viii-15. ix.1999 (V.O. Becker) (CG).



Fig. 157. *C. solisi* Gielis & Matthews, 1994. Holotype. El Salvador, Cerro Verde, 6.viii.1967 (O.S. Flint Jr.), gent CG 3356 (USNM).



Fig. 158. *C. venedictoffi* Gielis & Matthews, 1994. Paratype. Ecuador, Pichincha, Rd Quito - La Palma km 79, 1650 m, 25.iii.1982 (N. Venedictoff), gent CG 3360 (AME/MGCL).



Fig. 159. *Hellinsia chamelei* (Gielis, 1992). Holotype. Mexico, Jalisco, Est. Biol. Chamelei, 8-16. vii.1985 (Chemsak ao), gent CG 6142 (LACM).

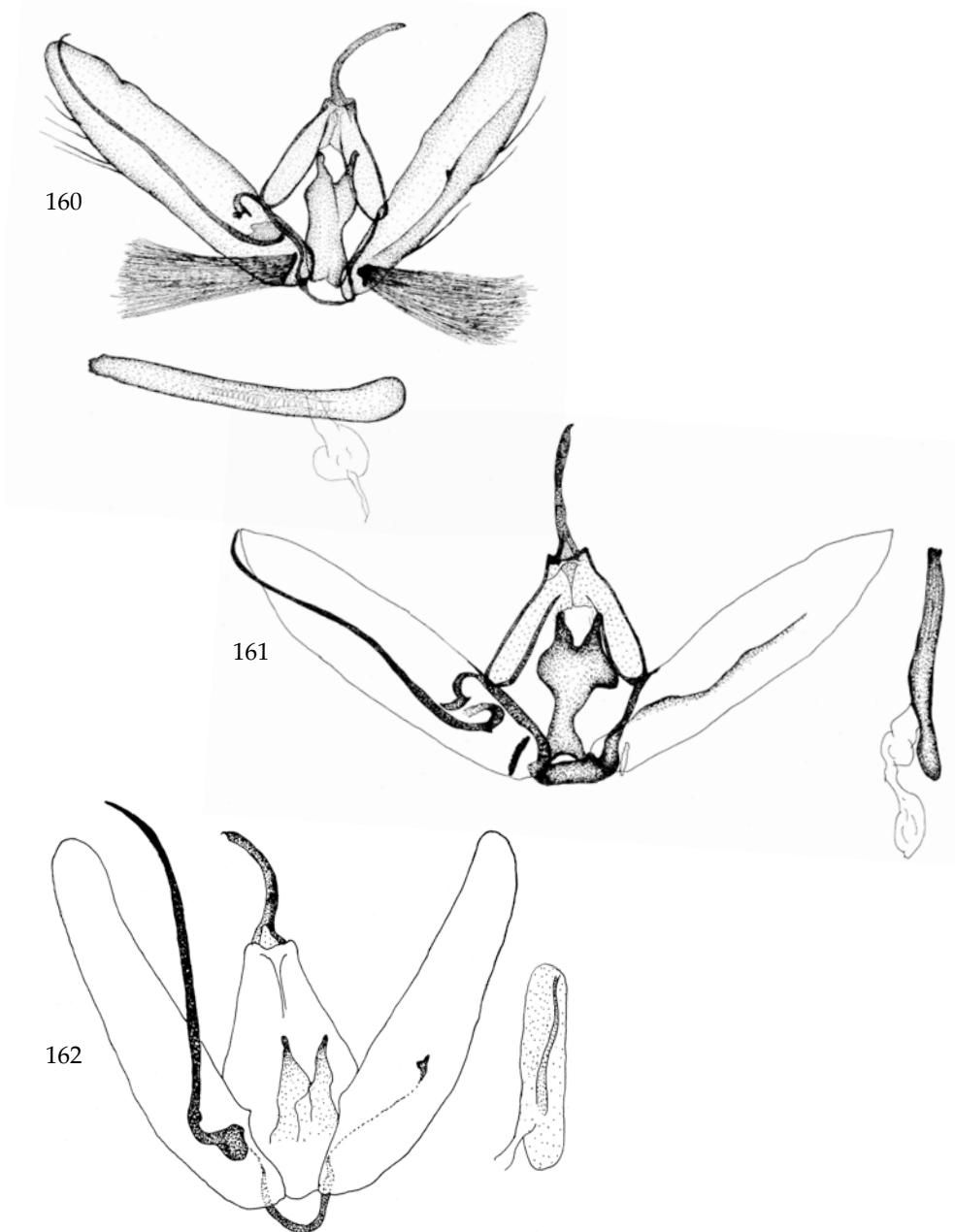


Fig. 160. *H. ochracealis* (Walker, 1864). Brazil, Para, no date (coll. Stainton), gent BM 18190 (BMNH).

Fig. 161. *H. paraochracealis* (Gielis, 1992). Holotype. Brazil, D(istrito) F(eederal), Planaltina, 1000 m, 15.viii.1985 (Becker), gent CG 6140 (Becker nr. 57718).

Fig. 162. *H. powelli* (Gielis, 1996). Holotype. Costa Rica, Guanacaste, Santa Rosa NP Headquarter area, 280 m, 14.vi.1988 (Brown & Powell), gent CG 3499 (UCB).

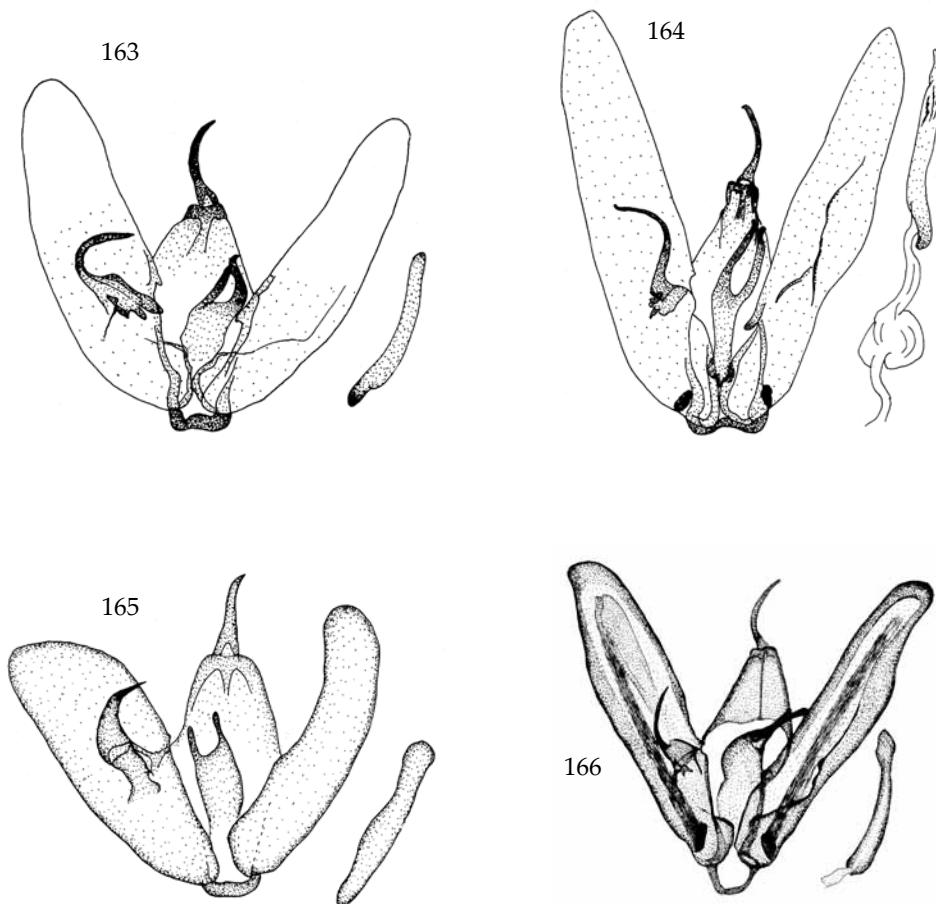


Fig. 163. *H. homodactylus* (Walker, 1864). Canada, Alberta, Sherwood Park, 1-7.viii.1984 (V. Nidek), gent CG 6300 (IT Z).

Fig. 164. *H. mollis* (Walsingham, 1915). Holotype. Guatemala, Cerro Zumil, 1220-1525 m, no date 1880 (G.C. Champion), gent BM 18147 (BMNH).

Fig. 165. *H. paccha* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, Proaño - Alshi, Rio Abanico, 1500 m, 7.i.1998 (V. Pelz), gent CG 4514 (CG).

Fig. 166. *H. angulofuscus* (Gielis, 1991). Holotype. Argentina, Salta, Rosario de la Frontera, Los Banos, 9.iv.1979 (Mis. Cient. Danesa, Sta. 72), gent CG 4103 (ZMUC).

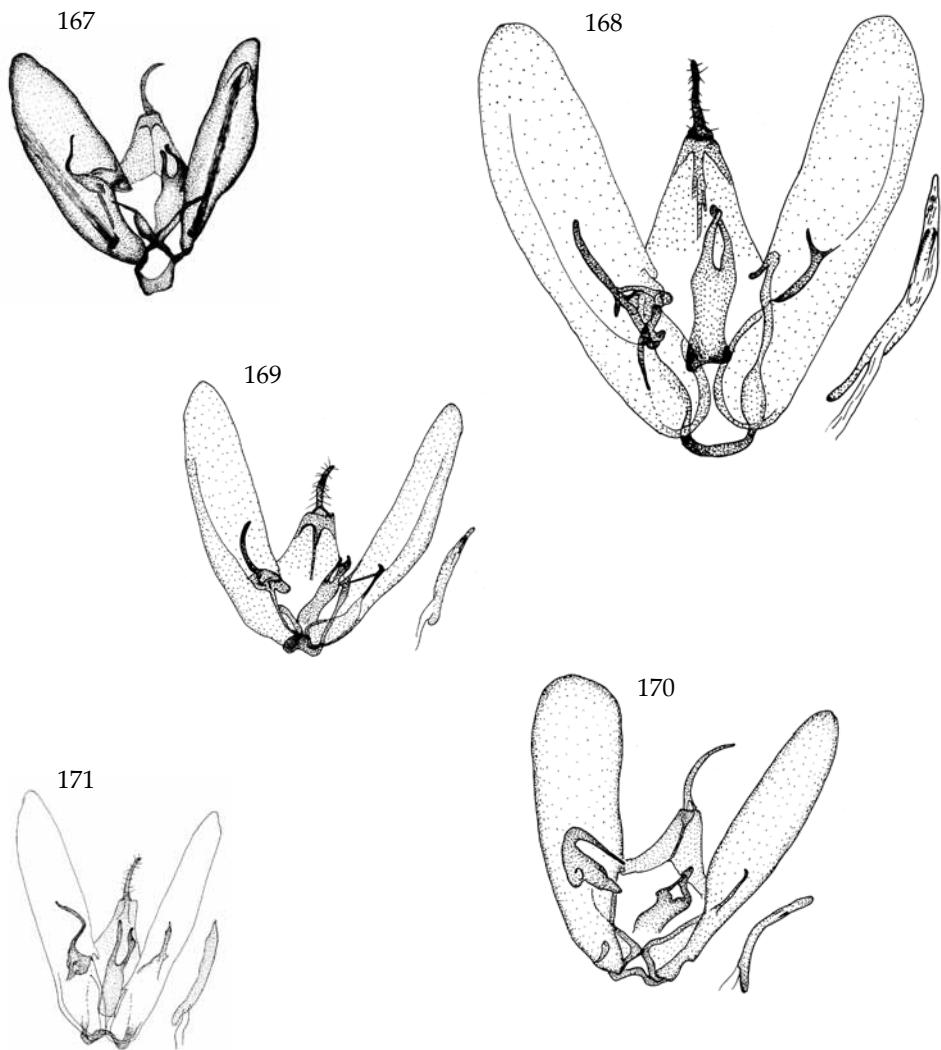


Fig. 167. *H. nodipes* (Zeller, 1877). Holotype. Colombia, Bogota, no date (V. Nolcken), gent BM 14579 (BMNH).

Fig. 168. *H. pelospilus* (Zeller, 1877). Lectotype of *H. salticola* (Meyrick, 1913): Peru, Chanchamayo, gent BM 18708 (BMNH).

Fig. 169. *H. praealtus* (Walsingham, 1915). Holotype. Guatemala, Totonicapam, 2600-3100 m, viii.1880 (G.C.), gent BM 18152 (BMNH).

Fig. 170. *H. puruha* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, Proaño - Inapula, CREA-Domono, 1100 m, 23-24.vi.1999 (V. Pelz), gent CG 4511 (CG).

Fig. 171. *H. emmorus* (Walsingham, 1915). Holotype. Mexico, Vera Cruz, Orizaba, xii.1887 (F.D. Goodman & O. Salvin), gent BM 18160 (BMNH).

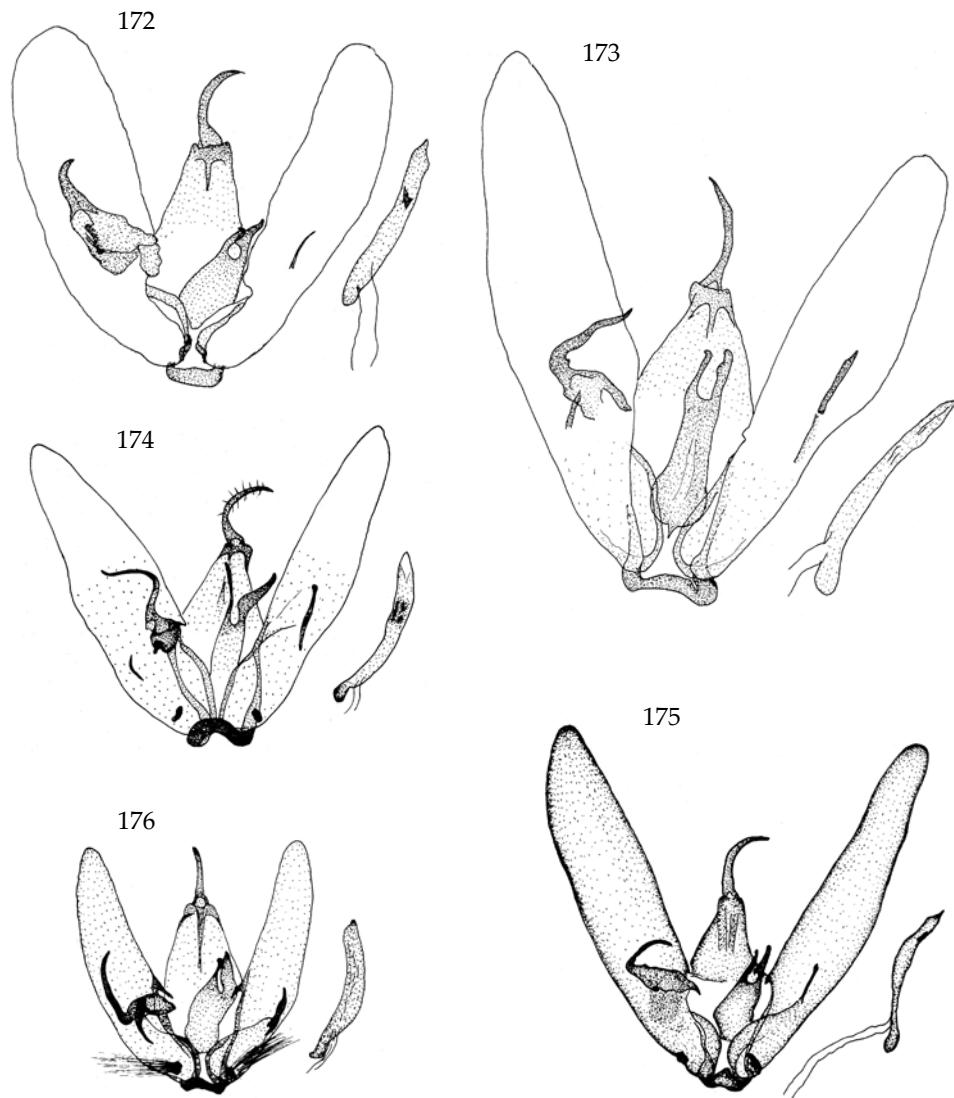


Fig. 172. *H. nauarches* (Meyrick, 1930). Bolivia, Songo valley, Cuticucho, 3700 m, 30.xi.1953 (Förster), gent CG 5666 (ZSM).

Fig. 173. *H. orellanai* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20.xi.1989 (N. Venedictoff), gent CG 5948 (AME/MGCL).

Fig. 174. *H. paleaceus* (Zeller, 1873). USA, Kansas, Clark Co, Clark State Lake Prk, 26.vii.1990, el. 14. viii.1990 (C. Gielis), gent CG 2282 (CG).

Fig. 175. *H. pseudobarbata* Gielis, 1999. Holotype. Costa Rica, Puntarenas, A.C. Amistad, Buenos Aires, Sector Altamira, 10 km SW del Cerro Billey, 1400 m, x-1991 (M. Segura), gent CG 3891 (Inbio).

Fig. 176. *H. spermatias* (Meyrick, 1908). Lectotype. Brazil, Sao Paulo, no date, gent BM 18712 (BMNH).

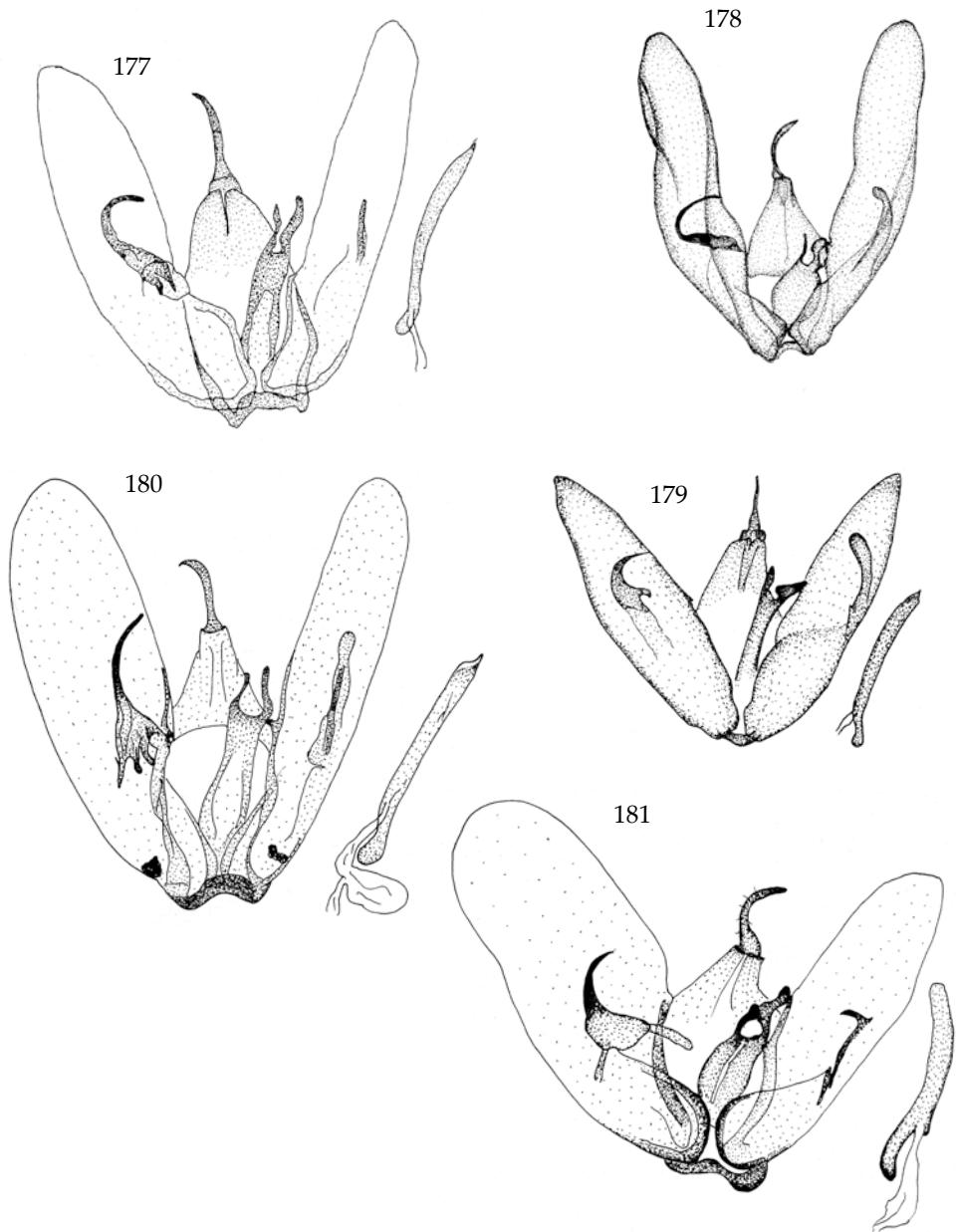


Fig. 177. *H. sucrei* spec. nov. Holotype. Ecuador, Carchi, El Angel +12,5 km, 3500 m, 12.i.1985 (N. Venedictoff), gent CG 5931 (AME/MGCL).

Fig. 178. *H. beneficus* (Yano & Heppner, 1983). Hawai'i Islands, Oahu, gent BM 14649 (BMNH).

Fig. 179. *H. canari* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, Orillas del Rio Upano, 1000 m, 17.iv.1998 (V. Pelz), gent CG 4510 (CG).

Fig. 180. *H. oxyntes* (Meyrick, 1908). Lectotype. Brazil, Sao Paulo, (19)07 (R), gent BM 18713 (BMNH).

Fig. 181. *H. hoguei* Gielis, 1996. Paratype. Mexico, Mexico, no date (R. Muller), gent CG 3347 (USNM).

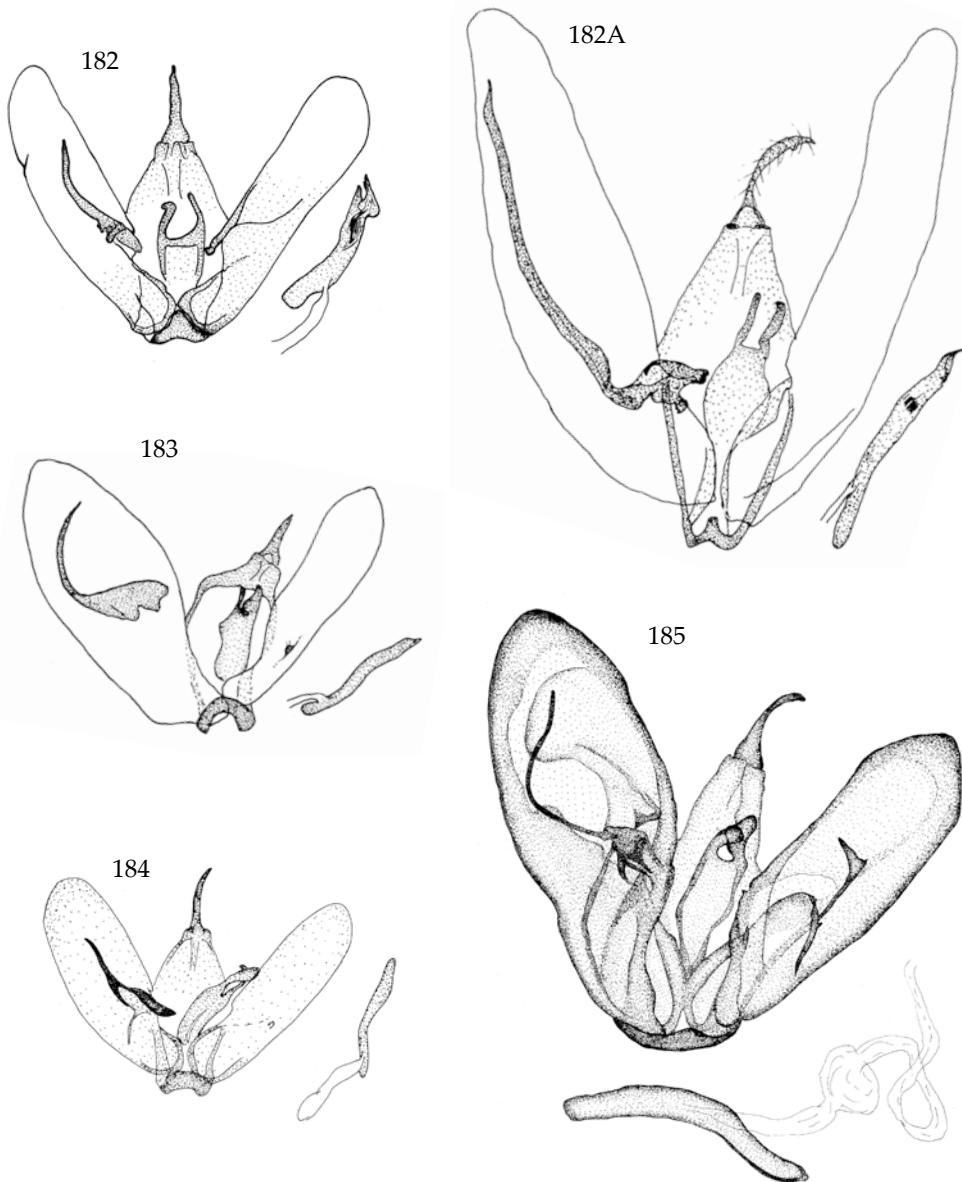


Fig. 182. *H. discors* (Meyrick, 1913). Lectotype. British Guyana, Mallali, i-iii (Parish), gent BM 18694 (BMNH).

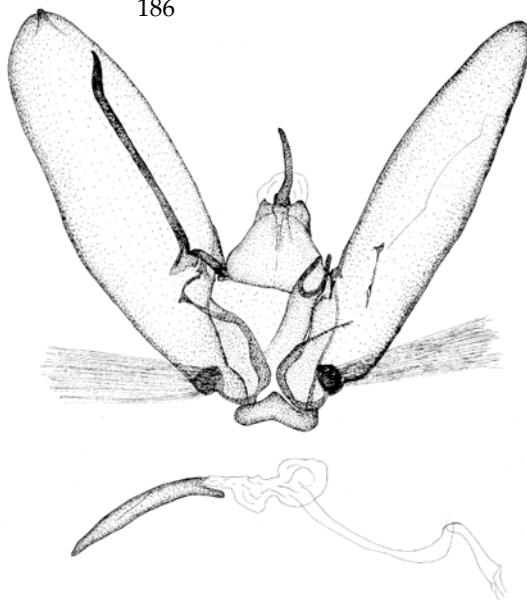
Fig. 182A. *H. hebrus* (Meyrick, 1932). Costa Rica, Puntarenas, Monteverde, Monteverde Stt, 1538 m, 9.vi.2008 (K. Nishida), gent CG 6427 (CG).

Fig. 183. *H. pallens* spec. nov. Holotype. Ecuador, Pichincha, Septimo Paraiso Res., 1300 m, 10.v.2002 (B. Landry), gent CG 4831 (MHNG).

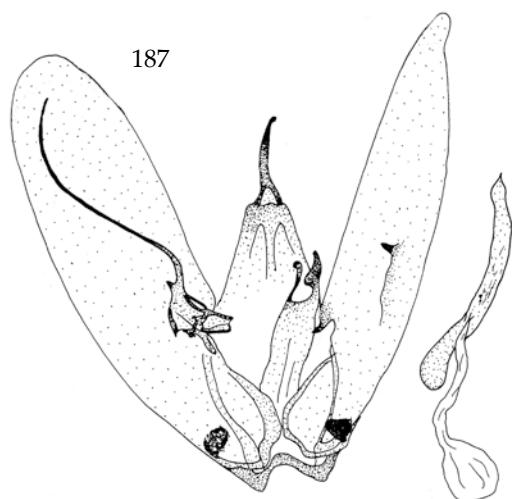
Fig. 184. *H. scripta* Gielis, 1999. Holotype. Costa Rica, Puntarenas, Res Biol Monteverde, Est La Casona, 1520 m, ii.1992 (N. Obando), gent CG 3872 (Inbio).

Fig. 185. *H. agraphodactylus* (Walker, 1864). Holotype. Jamaica, no date (Gosse), gent BM 18172 (BMNH).

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Fig. 186. *H. epileucus* (Walsingham, 1915). Holotype. Mexico, Tabasco, Teapa, iii (H.H. Smith), gent BM 18145 (BMNH).

Fig. 187. *H. lenis* (Zeller, 1877). Holotype. Colombia, Bogota, no date (V. Nolcken), gent BM 18164 (BMNH).

Fig. 188. *H. mauleicus* (Gielis, 1991). Holotype. Chile, Maule, Rio Teno, 40 km E Curico, 800 m, 25-27. xi.1981 (D.R. Davis), gent CG 6056 (USNM).

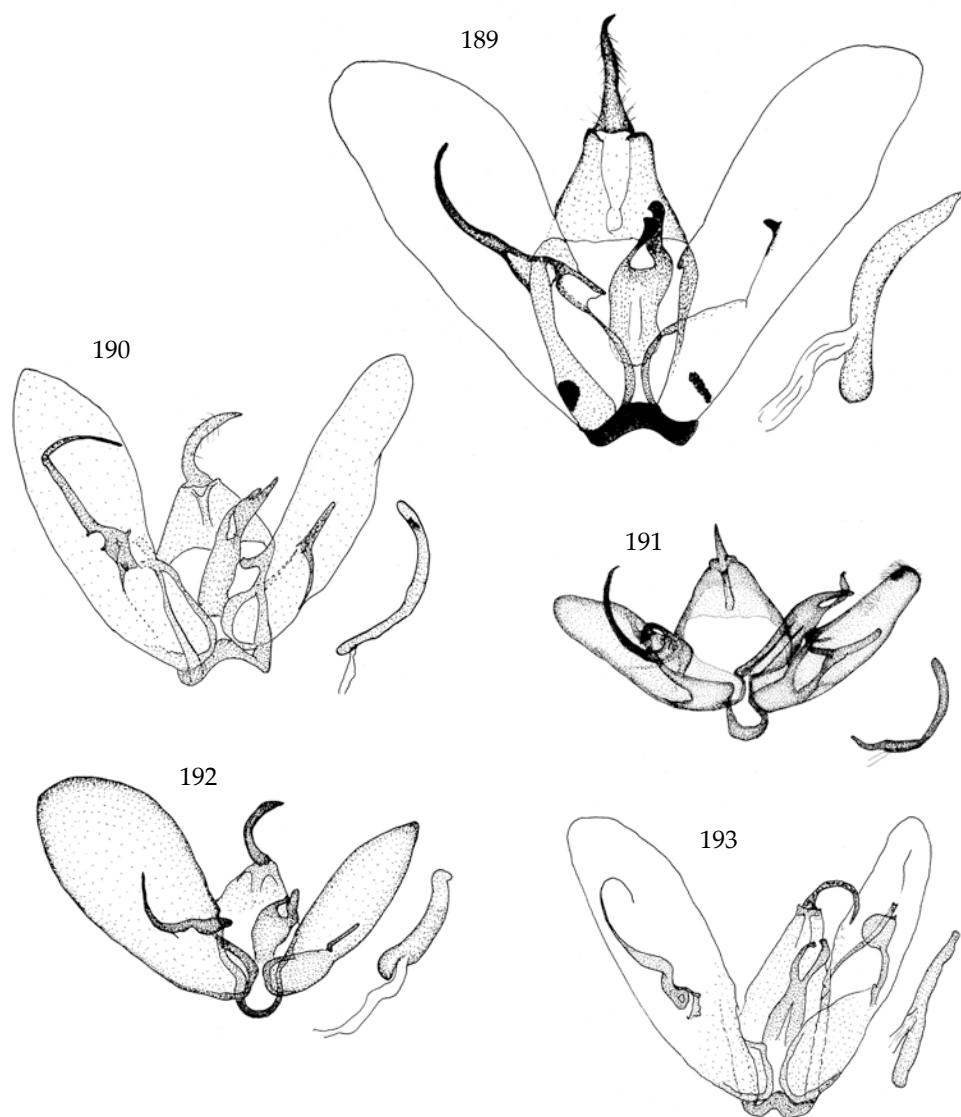


Fig. 189. *H. nigricalcarius* Gielis, 1996. Holotype. Colombia, Sierra del Libano, 1830 m, v.1899 (H.H. Smith), gent CG 5092 (BMNH).

Fig. 190. *H. cajanuma* spec. nov. Holotype. Ecuador, Loja, 10 km SE Loja, PN Podocarpus, Cajanuma Ranger Stt, 2850 m, 8.x.2002 (C. & F.K. Gielis), gent CG 4929 (CG).

Fig. 191. *H. siskaellus* (Gielis, 1991). Holotype. Argentina, Rio Negro, San Carlos de Bariloche, Colonia Suiza, 800 m, 29-30.xii.1981 (Nielsen & Karsholt), gent CG 4126 (ZMUC).

Fig. 192. *H. solanoi* Gielis, 1999. Holotype. Costa Rica, Limon, PN Tortuguero, Est Cuarto Esquinzo, 0 m, x.1990 (J. Solano), gent CG 3877 (Inbio).

Fig. 193. *H. cuculla* spec. nov. Holotype. Ecuador, Loja, Rd Loja - Piñas km 58, 2030 m, 21.iv.1982 (N. Venedictoff), gent CG 5951 (AME/MGCL).

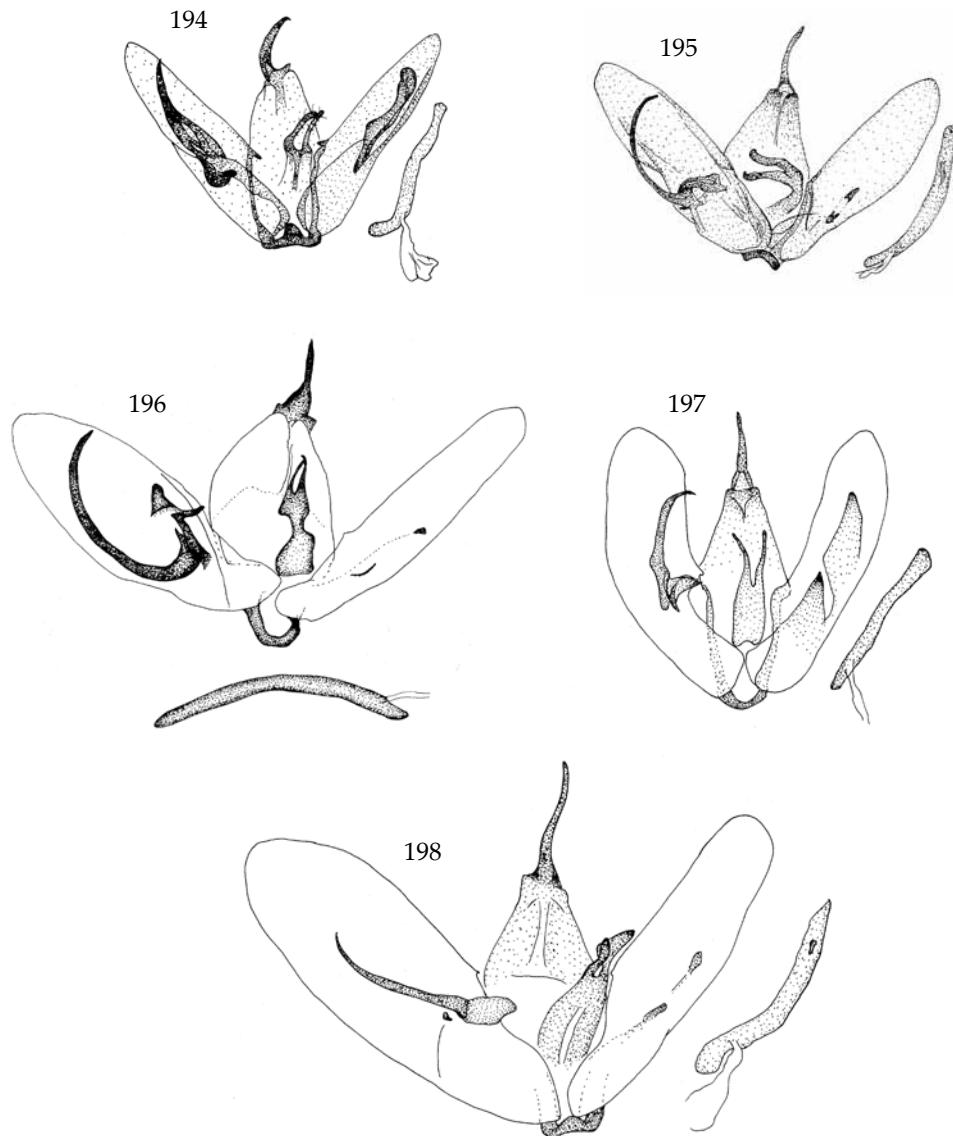


Fig. 194. *H. tetraonipennis* (Walsingham, 1915). Holotype. Guatemala, Cerro Zunil, 1220-1525 m, 1880 (Chapman), gent BM 18148 (BMNH).

Fig. 195. *H. batallonica* Arenberger & Wojtusiak, 2001. Holotype. Venezuela, Paramo El Batallon, Quebrada de los Rios, 2950 m, 4.iii.1996 (J. Wojtusiak), gent Ar 4208 (Wojtusiak).

Fig. 196. *H. betsiae* (Gielis, 1991). Holotype. Chile, Curico, Buchen, 20 km E. Potrero Grande, 1300 m, 11.i.1955 (Peña), gent CG 6045 (CNC).

Fig. 197. *H. caras* spec. nov. Paratype. Ecuador, Napo, 5 km W Papillacta, Laguna Papallacta, 3430 m, 28.x.2002 (C. & F.K. Gielis), gent CG 5242 (CG).

Fig. 198. *H. crescents* (Meyrick, 1926). BRAZIL, Sao Paolo, Santos, iii.1913 (E.D. Jonesgent CG 5045 (BMNH)).

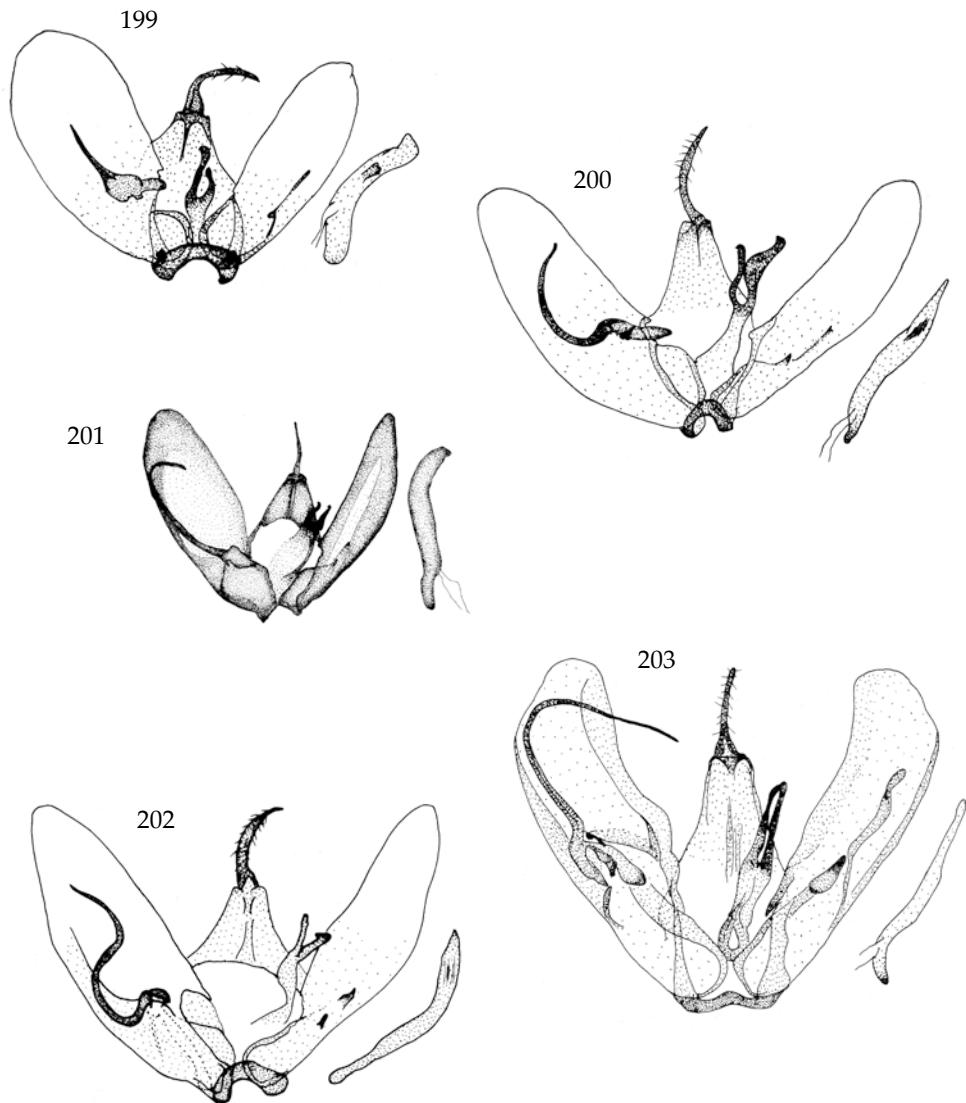


Fig. 199. *H. falsus* (Barnes & Lindsey, 1921). Holotype. U.S.A., Arizona, Tucson, no date, gent USNM 658-539 (USNM).

Fig. 200. *H. fishii* (Fernald, 1893). USA, California, San Bernardino Co, Upper Santa Ana River, 26.vii.1946 (G.H. & J.L. Sperry), gent CG 3339 (USNM).

Fig. 201. *H. inquinatus* (Zeller, 1873). USA, Texas, Brazos Co, College Station, 30.iv.1981 (R.S. Peigler), gent CG 4070 (ZMUC).

Fig. 202. *H. monserratae* Arenberger & Bond, 1995. Holotype. Colombia, Parano de Monserate, nr Bogota, 2.ii.1990 (Sturm), gent BM 21123 (BMNH).

Fig. 203. *H. phloeochroa* (Walsingham, 1915). Holotype. Mexico, Guerrero, Amula, 1830 m, viii (H.H. Smith), gent BM 18156 (BMNH).

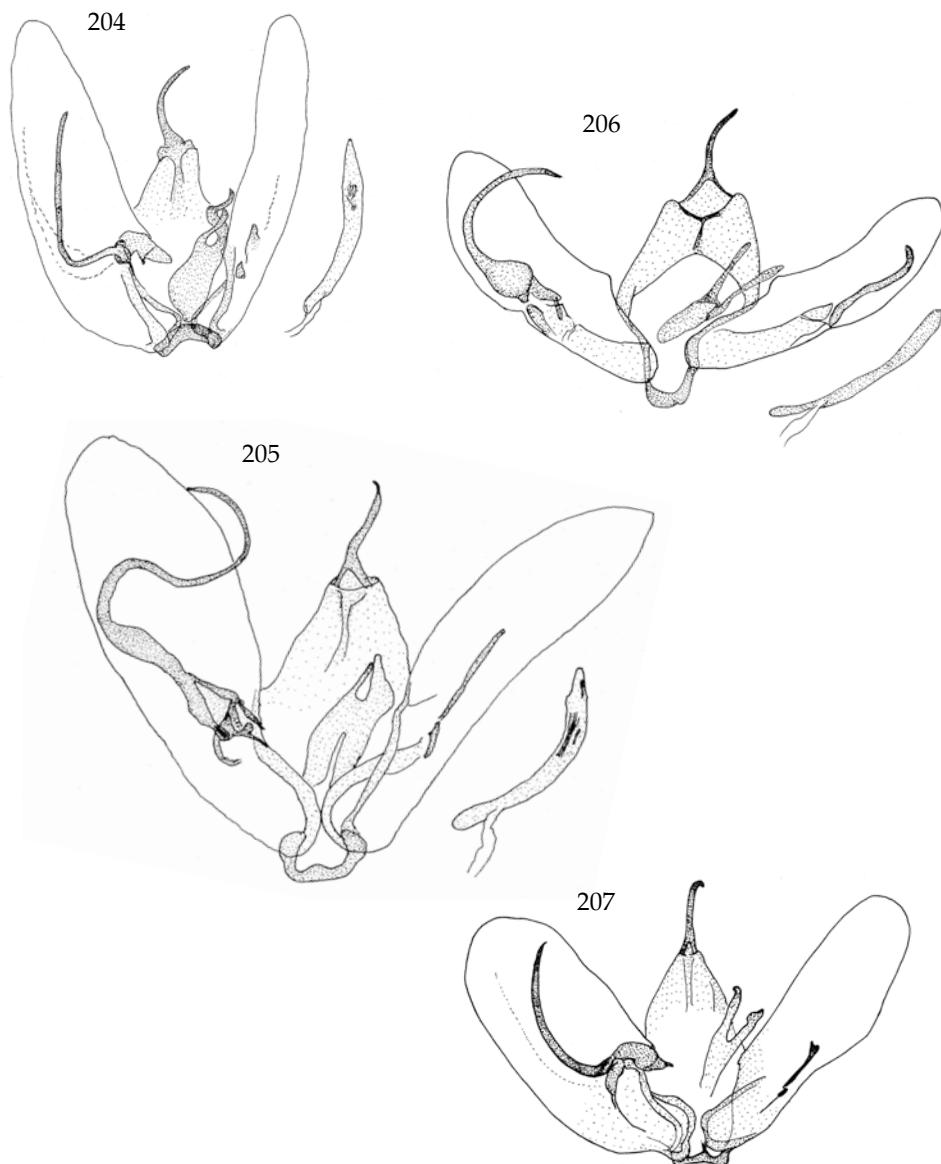


Fig. 204. *H. pizarroi* spec. nov. Holotype. Ecuador, Morona San., Gualeceo Limón km 36, 2900 m, 15. ii.1983 (N. Venedictoff), gent CG 5924 (AME/MGCL).

Fig. 205. *H. ruminahuii* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 40, 2480 m, 22.iii.1982 (N. Venedictoff), gent CG 5940 (AME/MGCL).

Fig. 206. *H. surinamensis* (Sepp, 1855). Paraguay, Gualra, Zorilla, 16-20.x.1992 (U. Drechsel), gent CG 2474 (CG).

Fig. 207. *H. conjunctus* (Zeller, 1877). Holotype. Colombia, Bogota, n.d. (V. Nolcken), gent BM 18704 (BMNH).

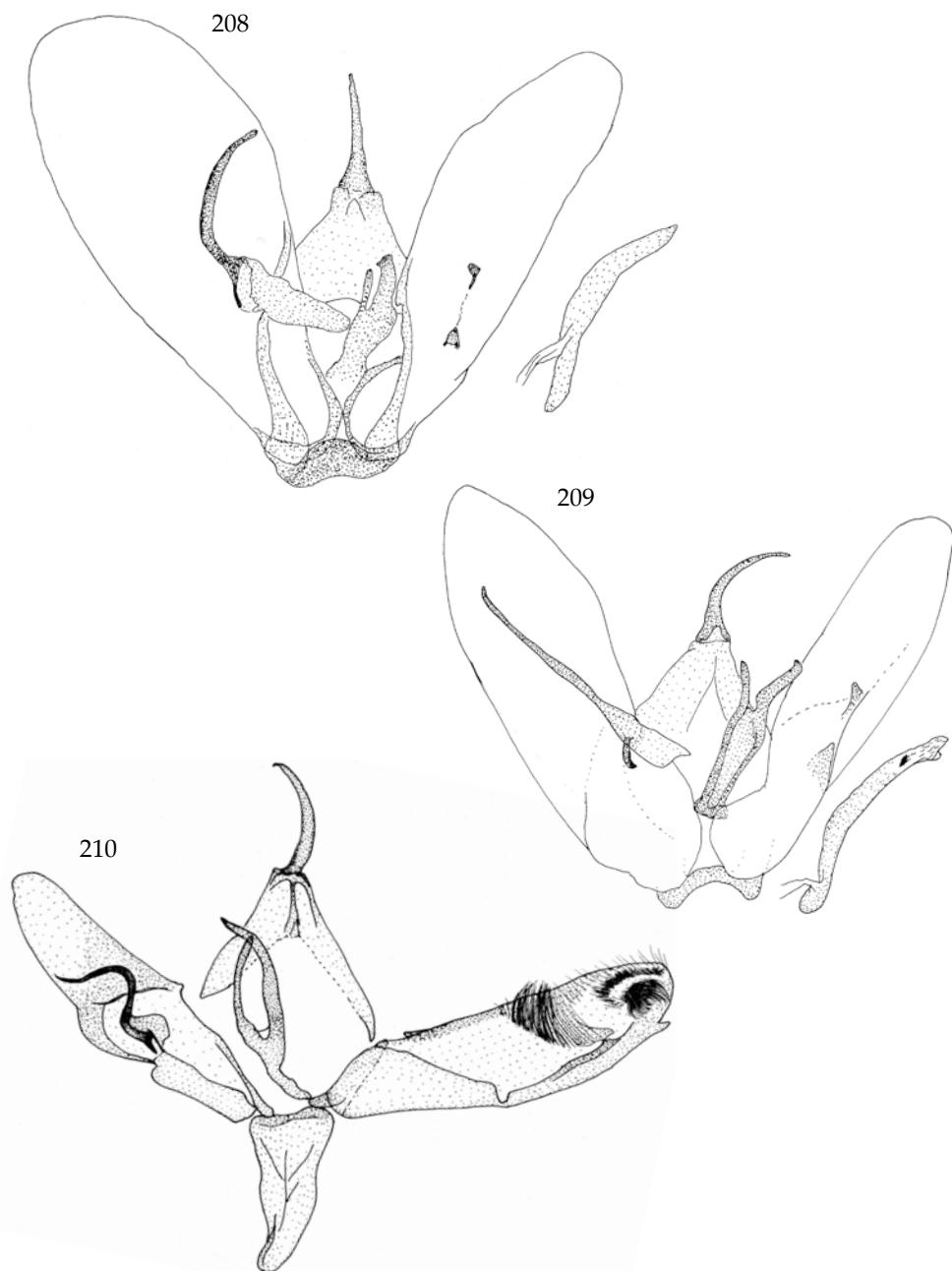


Fig. 208. *H. magnus* spec. nov. Paratype. Ecuador, Napo, Rd. Cosanga - Tena km 10, 2230 m, 16.i.1983 (N. Venedictoff), gent CG 5927 (CG).

Fig. 209. *H. paramoi* Arenberger & Wojtusiak, 2001. Paratype. Brazil, Sao Paulo, Est Biol Doraceia, nr Salesopolis, 850 m, 27.ix.1971 (E.G. & E.A. Munroe), gent CG 6192 (CNC).

Fig. 210. *H. devriesi* (B. Landry & Gielis, 1992). After B. Landry & Gielis (1992).

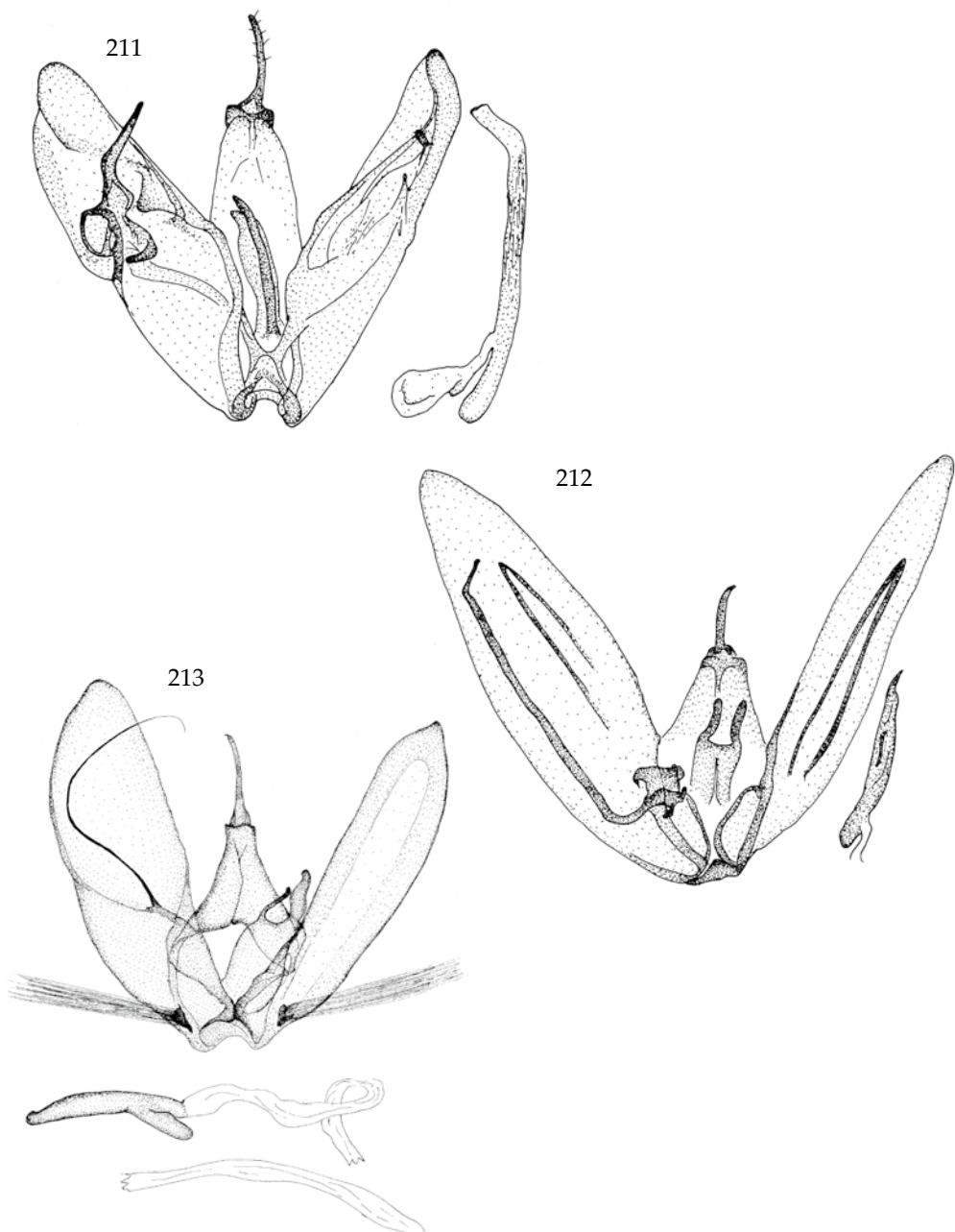


Fig. 211. *H. glochinias* (Meyrick, 1908). Lectotype. Brazil, Petropolis, 07 (R.), gent BM 18710 (BMNH).

Fig. 212. *H. argutus* (Meyrick, 1926). Holotype of *O. chionoptla* T.B. Fletcher. Colombia, Sierra de Libano, 1830 m, v.1899 (H.H. Smith), gent BM 18159 (BMNH).

Fig. 213. *H. balanotes* (Meyrick, 1908). Holotype. USA, Florida, Titusville, viii.(18)94, gent BM 10183 (BMNH).

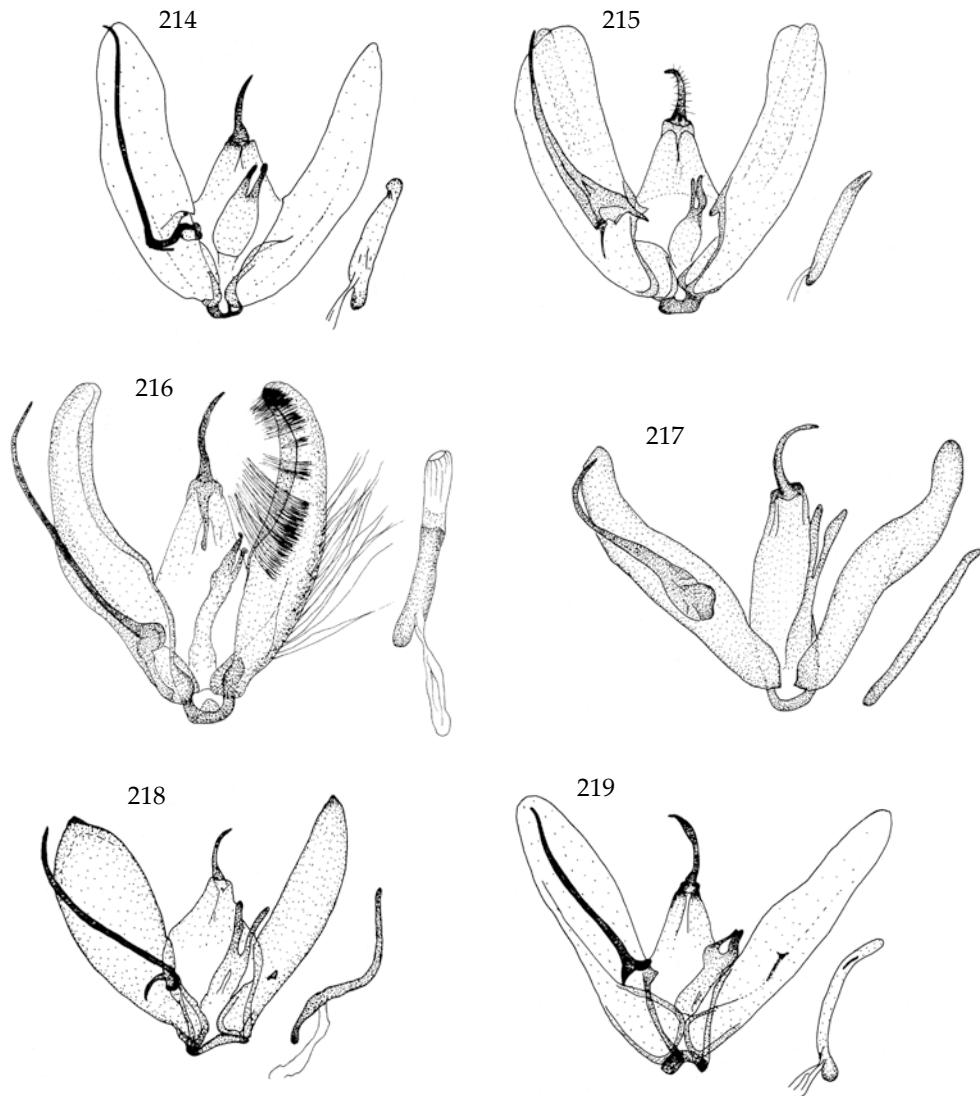


Fig. 214. *H. fissuralba* Gielis, 1996. Holotype. Peru, Carabaya, Oconeque, 2145 m, dry season, vii.(19)04 (G. Ockenden), gent CG 5046 (BMNH).

Fig. 215. *H. fusciliatus* (Zeller, 1877). Venezuela, Arague, Geremba, 2050 m, 24.x.1992 (P. Rouche), gent CG 2775 (J. Wojtusiak).

Fig. 216. *H. monteverda* Gielis, 1999. Holotype. Costa Rica, Punta, R.B. Monteverde, 1520 m, x.1993 (N. Obando), gent CG 3876 (Inbio).

Fig. 217. *H. quitus* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, 1000 m, 11-23.xii.1997 (V. Pelz), gent CG 4508 (CG).

Fig. 218. *H. obandoi* Gielis, 1999. Holotype. Costa Rica, Puntarenas, Estación La Casona, 1250 m, viii.1993 (N.G. Obando), gent CG 3874 (Inbio).

Fig. 219. *H. costalba* Gielis, 1996. Holotype. Peru, Cuzco, 18.viii.1973 (B.V. Ridout), gent CG 5084 (BMNH).

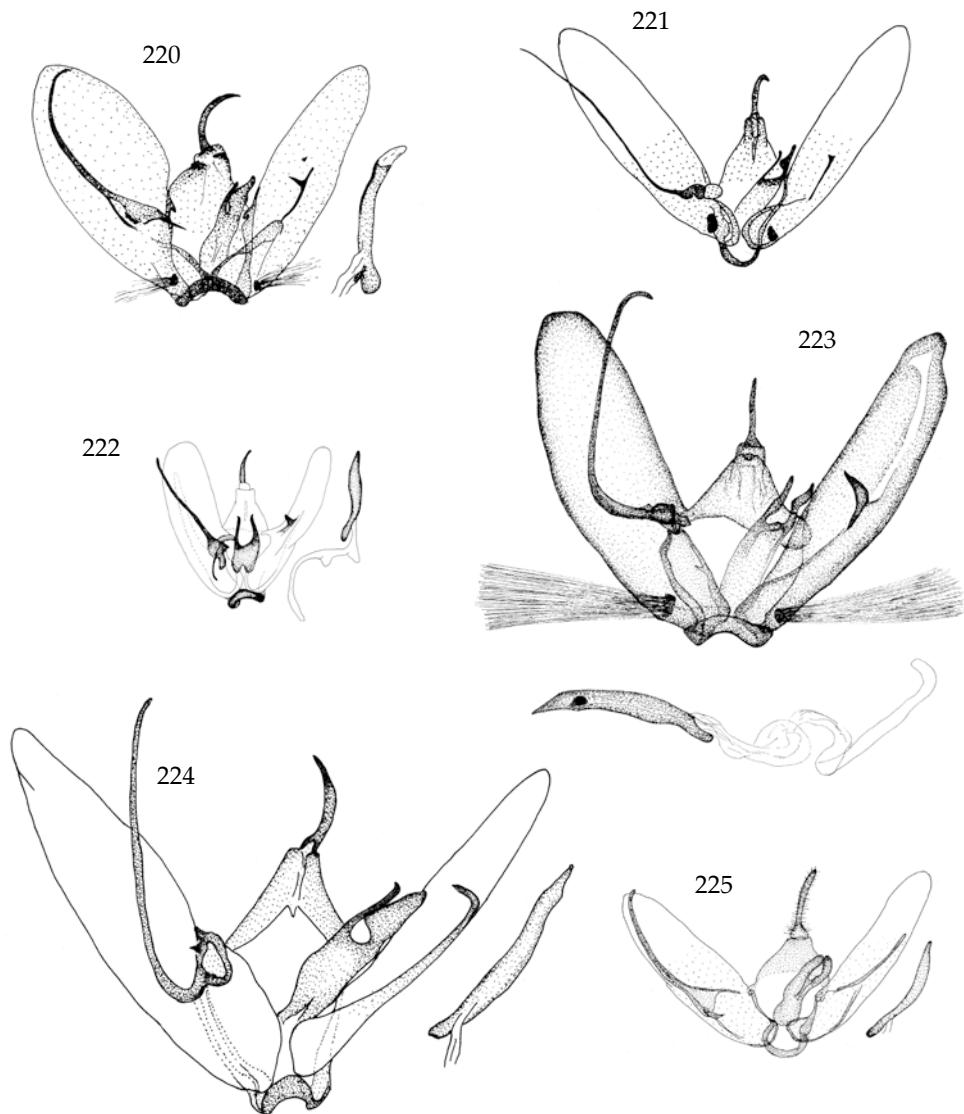


Fig. 220. *H. sublatus* (Walsingham, 1915). Mexico, 16 km E Toluca, 2725 m, 31.vii.1954 (Chillcott), gent CG 6110 (CNC).

Fig. 221. *H. tinctus* (Walsingham, 1915). USA, Arizona, Sta Rita Mts., Madera Canyon, 1450 m, 23. viii.1959 (R.W. Hodges), gent USNM Pyr 167 (USNM).

Fig. 222. *H. hololeucus* (Zeller, 1874). Holotype. Chile, Valparaiso, xi, gent BM 18168 (BMNH).

Fig. 223. *H. phlegmaticus* (Walsingham, 1915). Holotype *Pterophorus correptus* Walsingham. Mexico, Vera Cruz, Orizaba, xii.1887 (F.D. Goodman), gent BM 18155 (BMNH).

Fig. 224. *H. postnigrata* spec. nov. Holotype. Ecuador, Pichincha, Septimo Paraísa Res, 1300 m, 1°25'S 78°46,6'W, 10.v.2002 (B. Landry), gent 4833 (Mus Genève).

Fig. 225. *H. palmatus* (Meyrick, 1908). Lectotype. Brazil, São Paulo, (19)07, (R.), gent BM 18864 (BMNH).

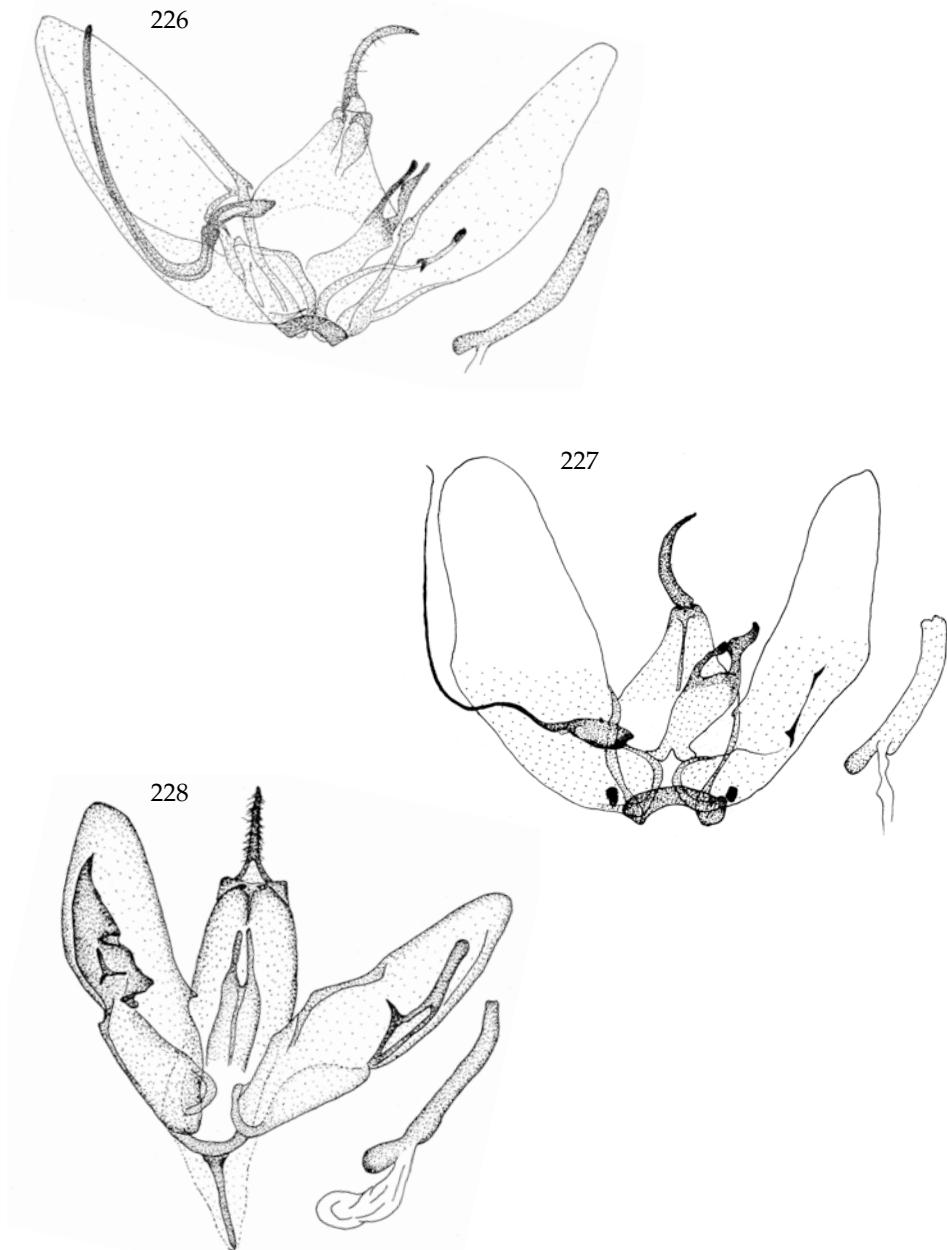


Fig. 226. *H. montezerpae* Arenberger & Wojtusiak, 2001. Holotype. Venezuela, Cordillera de Merida, Merida, Monte Zerpa, 3250 m, 13.ii.1996 (J. Wojtusiak), gent Ar 4055 (Wojtusiak).

Fig. 227. *H. grandis* (Fish, 1881). U.S.A., California, Anthony Chabot Reg. Park, Oakland, 6.v.1994 (M.A. de Groot), gent CG 3590 (ITZ).

Fig. 228. *H. huayna* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, Preano-Alshi, 5 km SE Alshi, 1700m, 23.ix-4.x.2000 (V. Pelz), gent CG 4539 (CG).

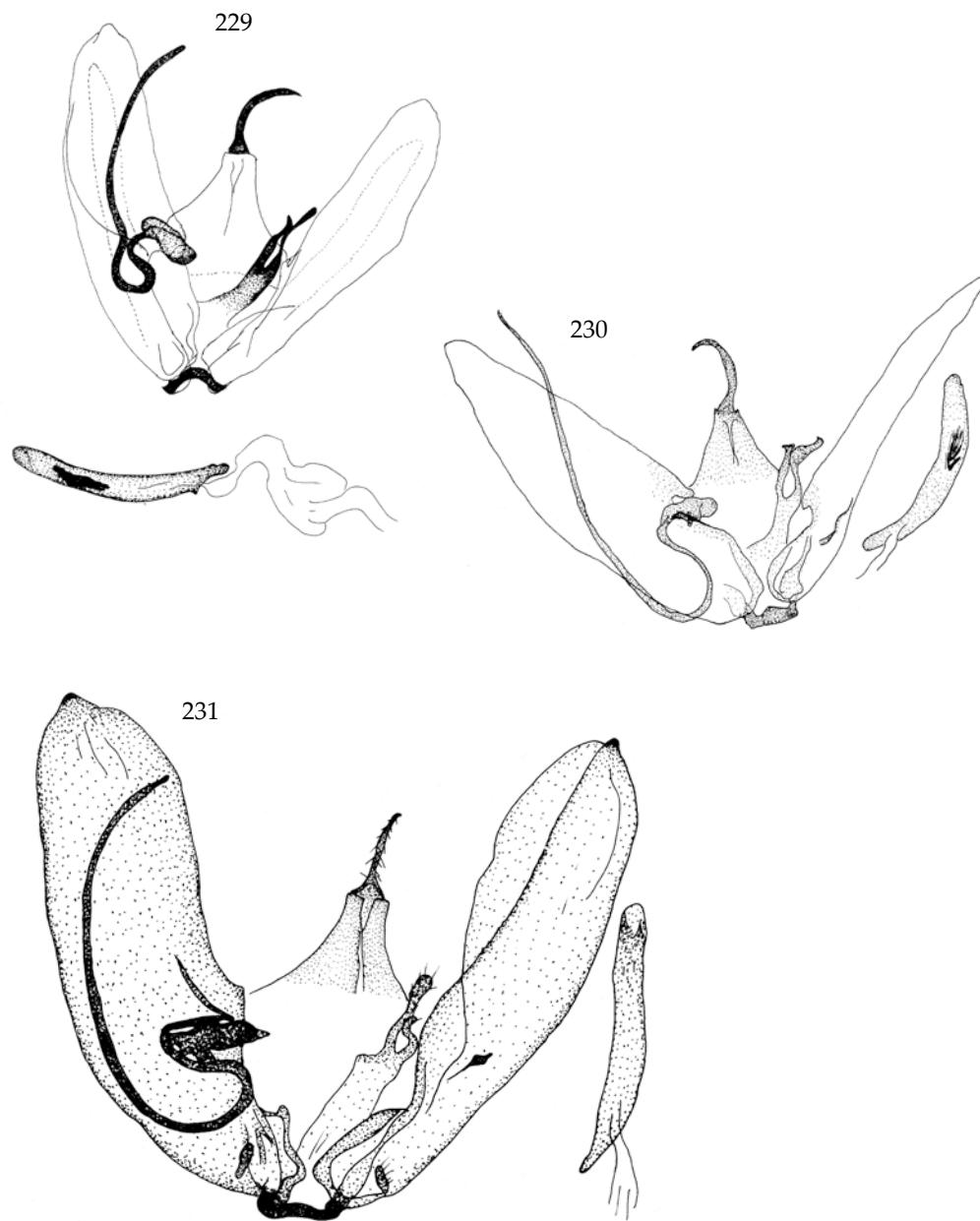
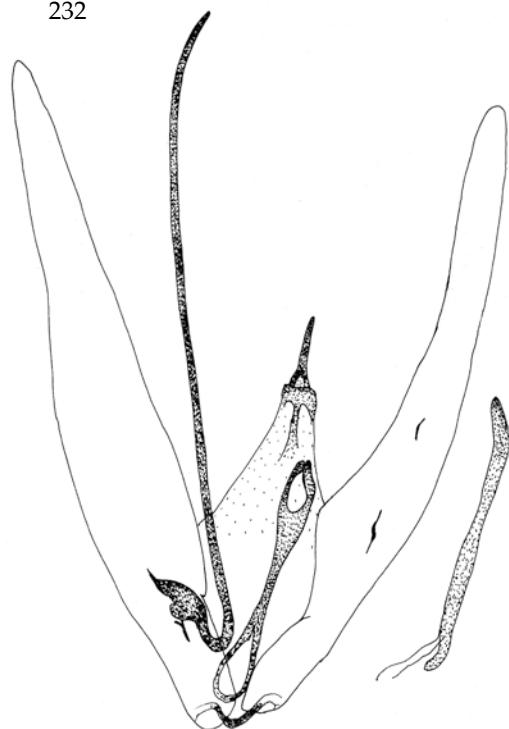


Fig. 229. *H. nephogenes* (Meyrick, 1926). Paratype. Galapagos, Charles Island, sea level, at light, 30.vii. (19)24 (St. George Expdn. C. L. Collenette), gent BM 18449 (BMNH).

Fig. 230. *H. benalcazari* spec. nov. Holotype. Ecuador, Napo, Puente Azuela, 1560 m, 11.IV.1985 (N. Venedictoff), gent CG 4365 (AME/MGCL).

Fig. 231. *H. calais* (Meyrick, 1930). Holotype. Brazil, Pernambuco, Serra do Bernade, no date (Paravicini), gent BM 18679 (BMNH).

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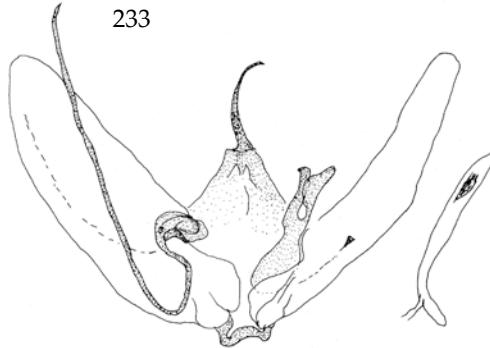


Fig. 232. *H. longifrons* (Walsingham, 1915). Mexico, Hidalgo, Guanajuato, 19 mi E Dolores, 6.ix.1970 (E.M. & J.L. Fisher), gent CG 6330 (LACM).

Fig. 233. *H. papallacta* spec. nov. Holotype. Ecuador, Napo, Papallacta +10 km, 2750 m, 11.xii.1984 (N. Venedictoff), gent CG 4368 (AME/MGCL).

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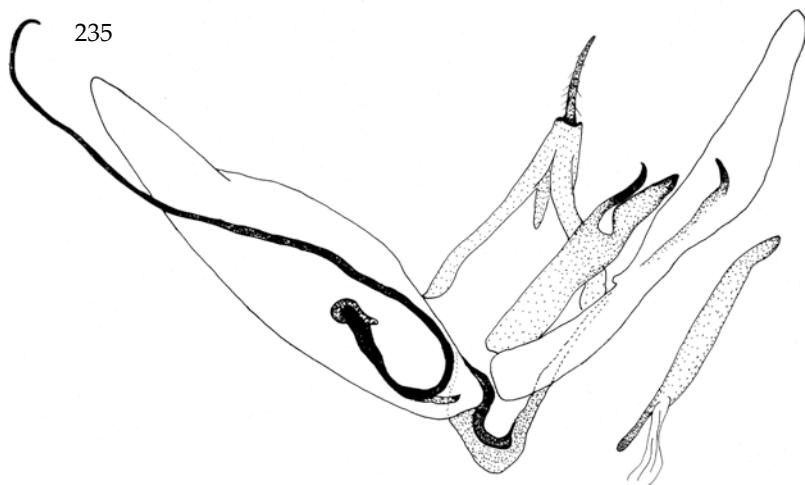


Fig. 234. *H. basalis* (Möschler, 1890). Puerto Rico, 7 km S Ciales, 1080 m, iv-v.1969 (W. Plath), gent CG 6418 (CG).

Fig. 235. *H. barbatus* Gielis, 1996. Paratype. Colombia, Sierra del Libano, 1830 m, v.1899 (H.H. Smith), gent CG 5091 (BMNH, Wlshm nr. 68858).

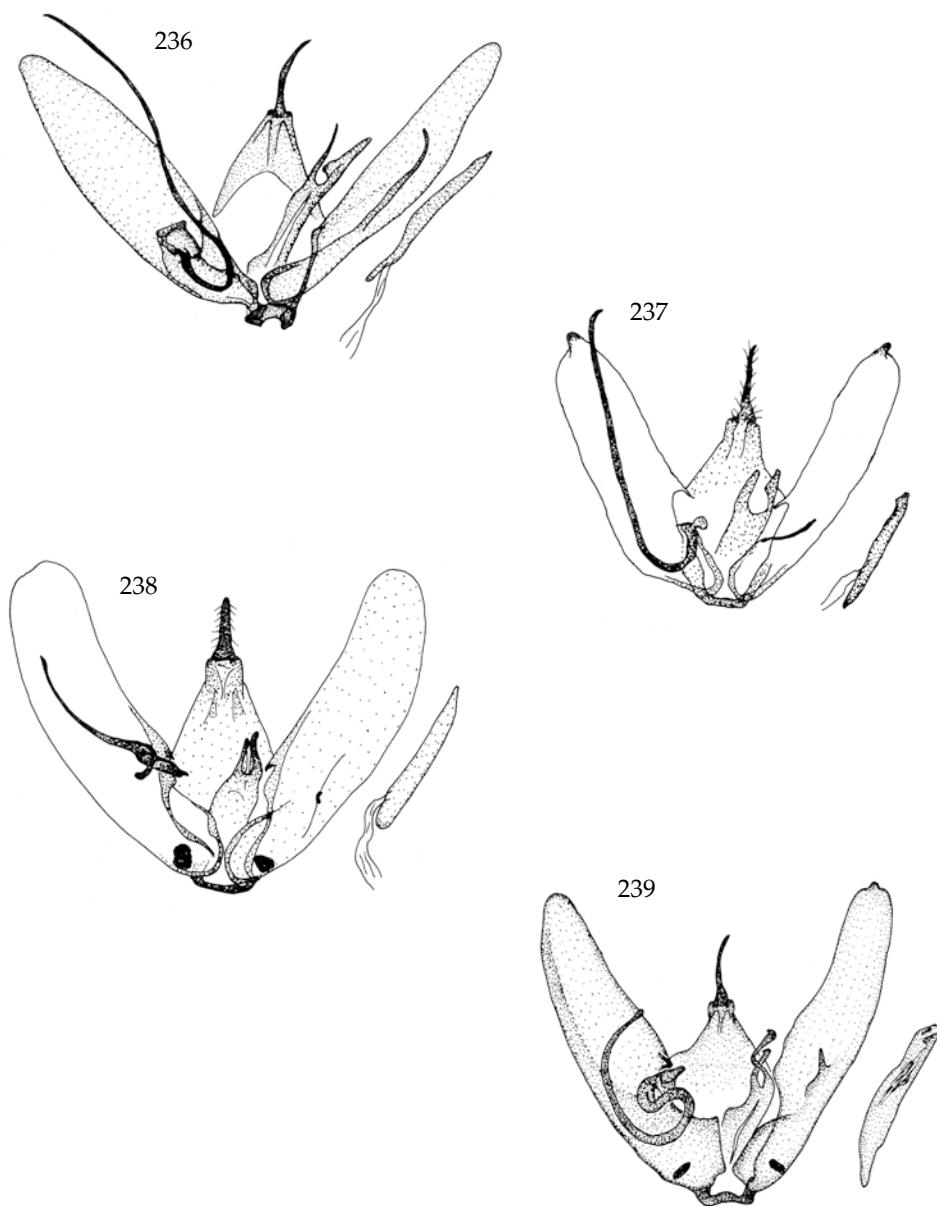


Fig. 236. *H. cervicalis* (Meyrick, 1932). Holotype. Bolivia, Rio Songo, 750 m, gent CG 6324 (NMW).

Fig. 237. *H. ochricostatus* (Zeller, 1877). Ecuador, Azuay, PN Cajas, Laguna Llaviuco, 3225 m, 5.x.2002 (C. & F.K. Gielis & V. Pelz), gent CG 6420 (CG).

Fig. 238. *H. nivalis* (Meyrick, 1908). Lectotype. Jamaica, New Castle, (19)07 (R.), gent BM 18184 (BMNH).

Fig. 239. *H. shyri* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, Proaño - Inapula, CREA - Domono, 1100 m, 20-23.iv.1998 (V. Pelz), gent CG 4509 (CG).

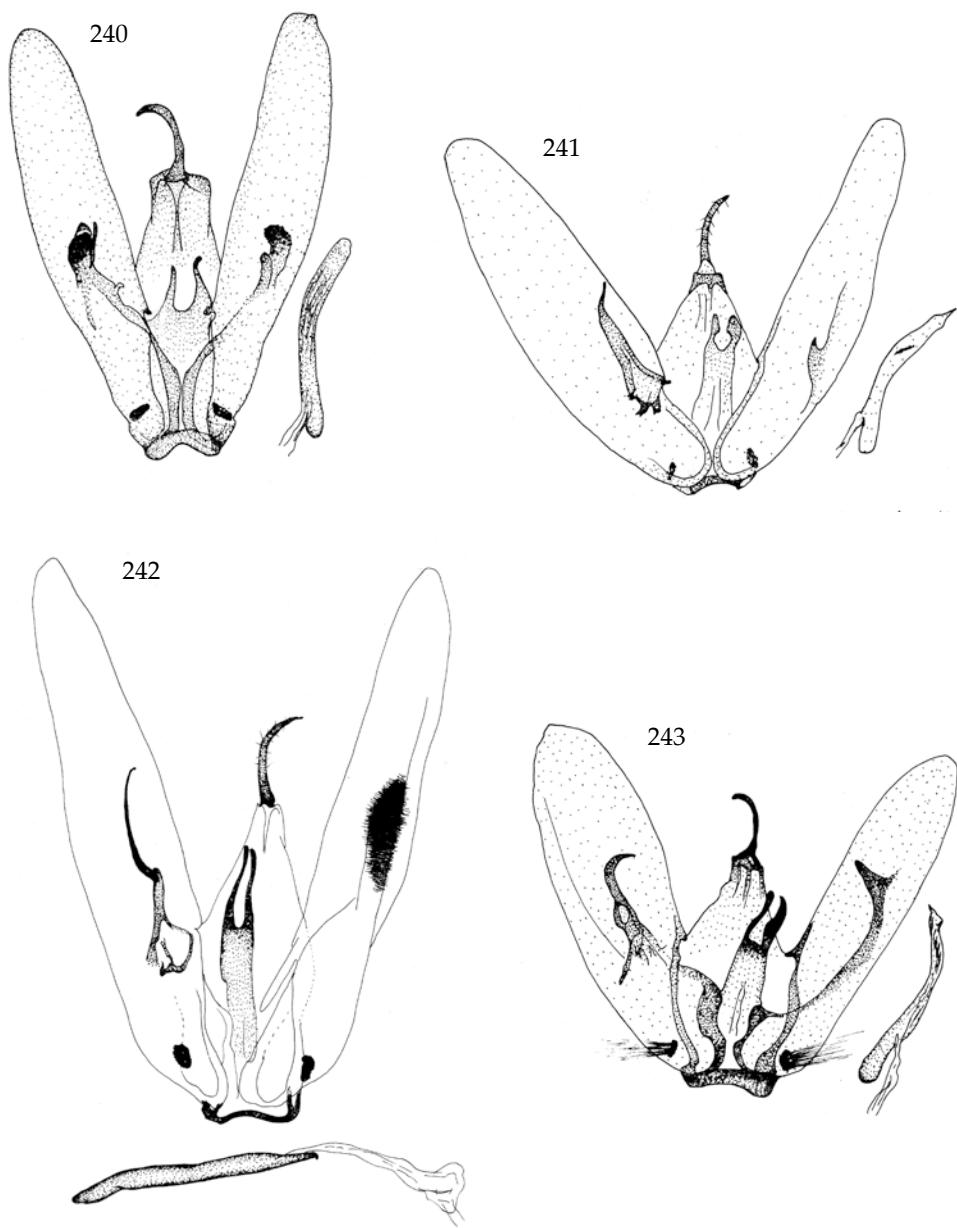


Fig. 240. *H. delospilus* (Meyrick, 1921). Lectotype. Peru, Jurimaguas, Iquitos, iii-v (Parish), gent BM 18715 (BMNH).

Fig. 241. *H. ignifugax* (Walsingham, 1915). Paratype. Guatemala, Totanicapam, 2600-3050 m, viii.1880 G.C. Champion, gent CG 5086 (BMNH, Wlshm nr. 65438).

Fig. 242. *H. glaphyrottes* (Meyrick, 1908). Lectotype. Brazil, Sao Paulo, (19)07 (R.), gent BM 18445 (BMNH).

Fig. 243. *H. stadias* (Meyrick, 1908). Lectotype. Brazil, Petropolis, (19)07 (R.), gent BM 18711 (BMNH).

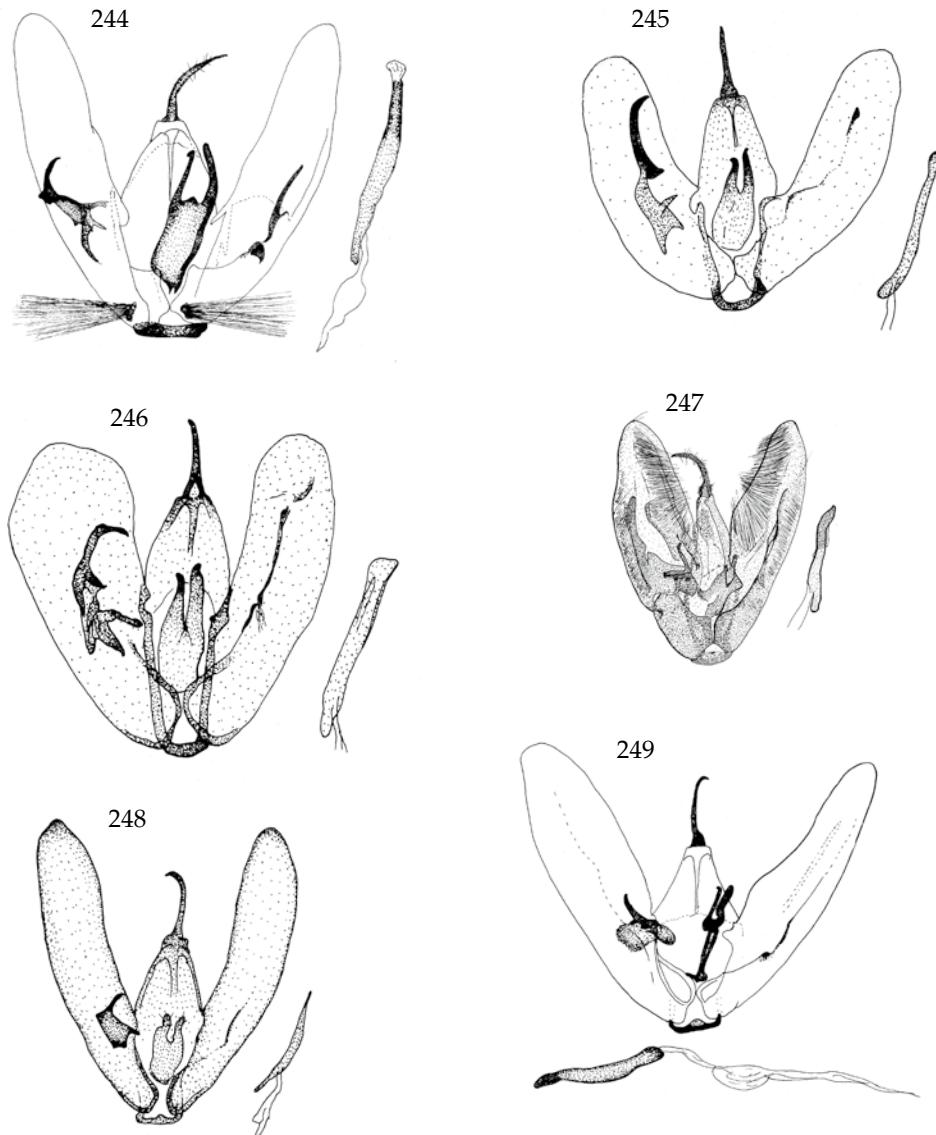


Fig. 244. *H. mallecoicus* (Gielis, 1991). Holotype. Chile, Linares, Puente Malcho nr. Longavi River, 600 m, 13-15.i.1979 (Davis & Akerbergs), pep. CG 6066 (USNM).

Fig. 245. *H. paraglochinias* Gielis, 1996. Holotype. Peru. Cuzco, Pillahuata, 2600 m, 14-18.viii.1982 (M. Matthews & M. Packer), gent CG 5039 (BMNH).

Fig. 246. *H. scribarius* (Meyrick, 1926). Holotype. Colombia, Mt. Tolima, 3810 m, xii, gent BM 18709 (BMNH).

Fig. 247. *H. cristobalis* (B. Landry & Gielis). After B. Landry & Gielis (1992).

Fig. 248. *H. fissuripuncta* Gielis, 1999. Holotype. Costa Rica, Guanacasta, 9 km S Sta Cecilia, Est Pitilla, 700 m, iii-1994 (C. Moraga), gent CG 3869 (Inbio).

Fig. 249. *H. grandaevus* (Meyrick, 1931). Holotype. Chile, Llanquihue, Peulla, 12-13.xii.1926 (Edwards), gent BM 18446 (BMNH).

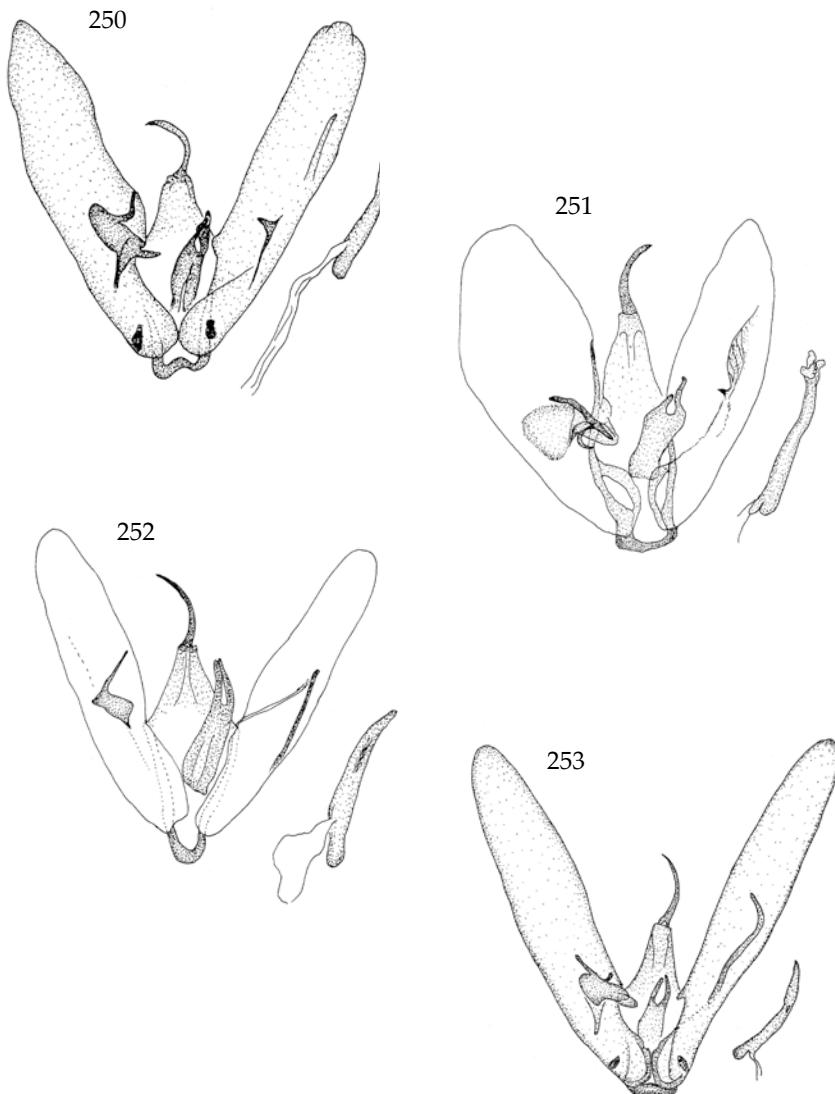


Fig. 250. *H. obscuricilia* Arenberger & Wojtusiak. Costa Rica, San Jose, PN Chirippo, Llano Bonito, 2500 m, 23.vi.2006 (K. Nishida), gent CG 5472 (CG).

Fig. 251. *H. praenigratus* (Meyrick, 1921). Ecuador, Carchi, Rd Maldonado 63,5 km, 2850 m, 16.i.1985 (N. Venedictoff), gent CG 5921 (AME/MGCL).

Fig. 252. *H. fumiventris* (Zeller, 1877). Mexico, Jalisco, Chapala, 20°18'N 103°15'W, *Parthenium hysteroporus* L, 16.xi.1990 (K. Pullen), gent CG 6314 (CG).

Fig. 253. *H. tupaci* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, 1100 m, 11-23.xii.1997 (V. Pelz), gent CG 4516 (CG).

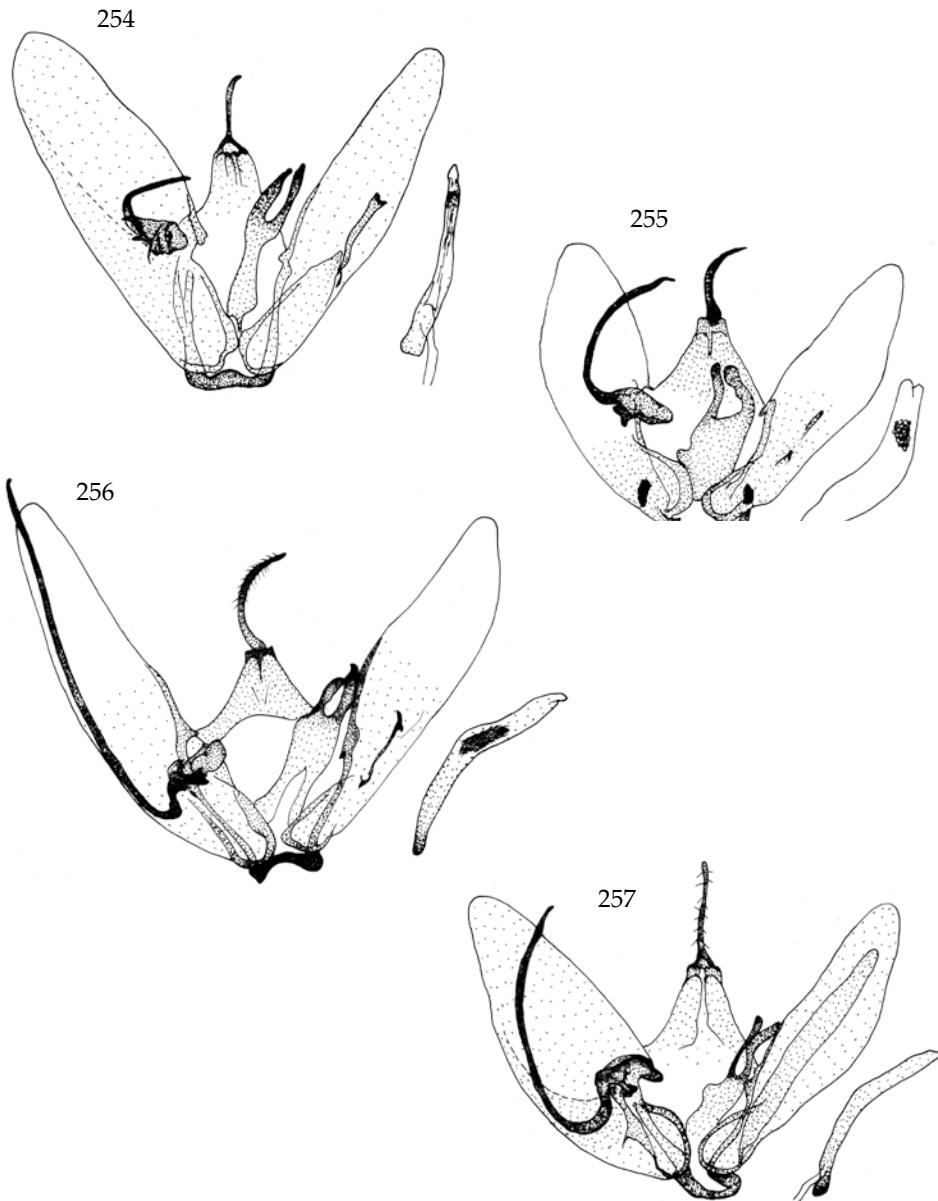


Fig. 254. *H. malesanus* (Meyrick, 1921). Lectotype. Peru, lima, 150 m, viii.1914 (Parish), gent BM 18706 (BMNH).

Fig. 255. *Oidaematophorus eupatorii* (Fernald, 1891). USA, Wisconsin, Burnett Co, 13.vii.2002 (M. Sabourin), gent CG 4746 (CG).

Fig. 256. *O. grisescens* (Walsingham, 1880). U.S.A., gent USNM 72-446 (USNM).

Fig. 257. *O. nigrofuscus* Gibeaux, 1986. Holotype. Venezuela, Páramo de Piedras Blancas, 4200 m, 10. ix.1985 (M. Lamotte), gent Gibeaux 2669 (Gibeaux).

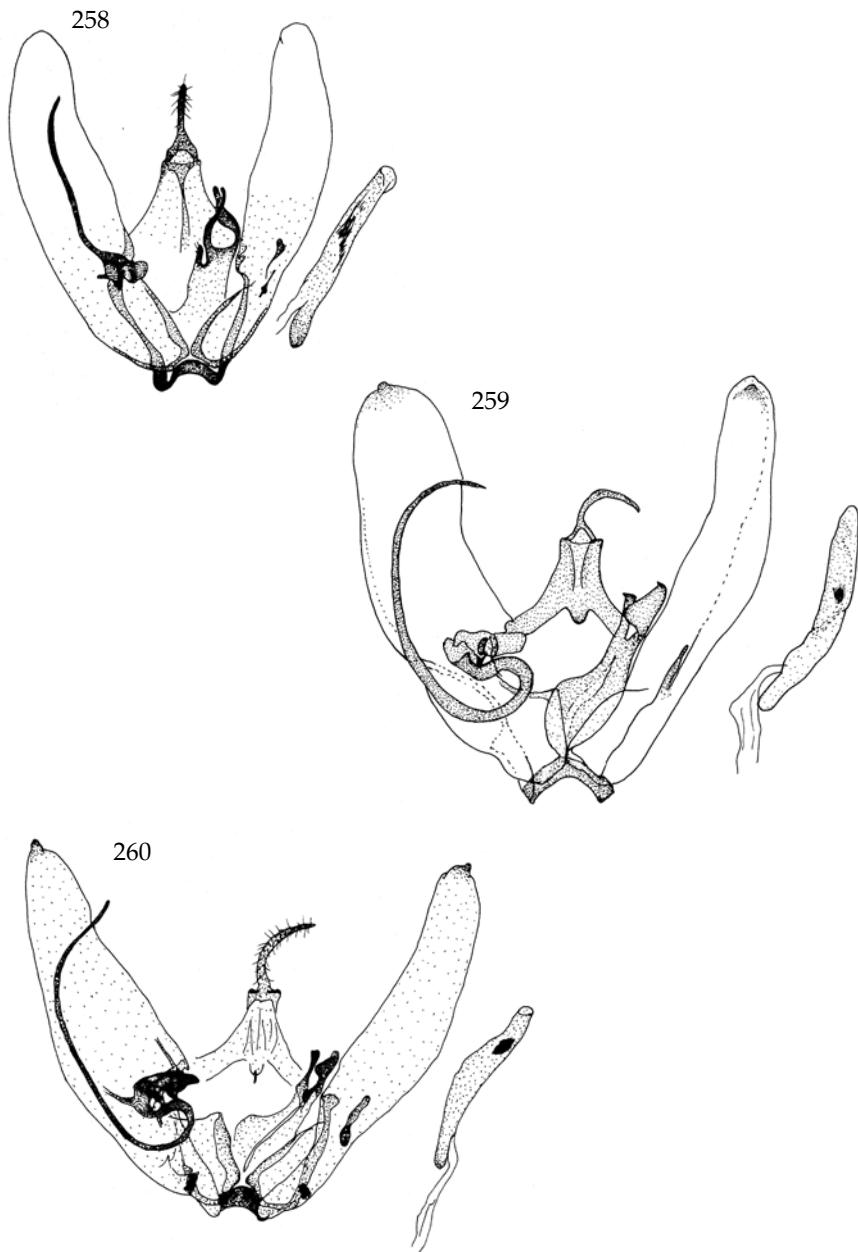


Fig. 258. *O. phaceliae* McDunnough, 1938. Holotype. Canada, Alberta, Waterton Lake, 20.vii.1923 (J. McDunnough), gent CNC MIC 896 (CNC).

Fig. 259. *O. pseudotrachyphloeus* spec. nov. Holotype. Peru, Lima, Res Nec. de Lachay, 11°21'S 77°21'W, 18.xi.1998 (B. Landry), gent CG 4829 (Mus Genève)

Fig. 260. *O. trachyphloeus* (Meyrick, 1926). Costa Rica, Cerro de la Muerta, 3300 m, 23-24.ii.1987 (Lafontaine & Wood), gent CG 2270 (CG).

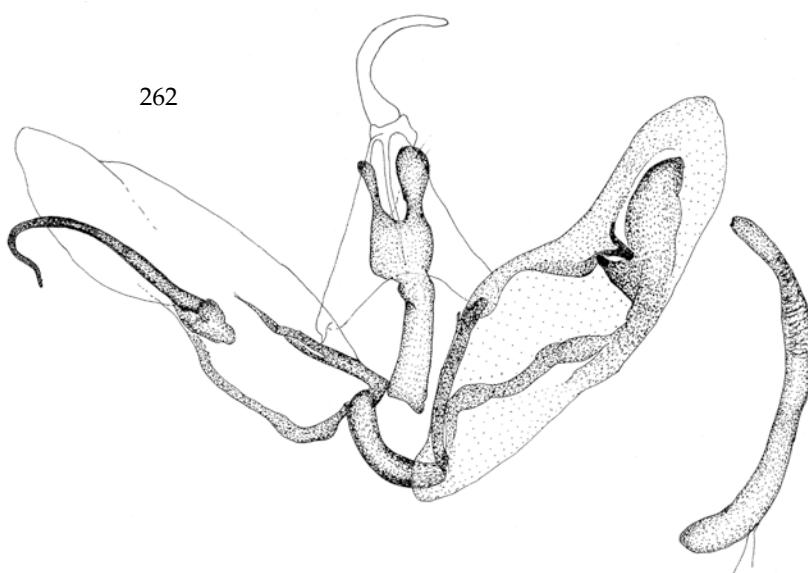
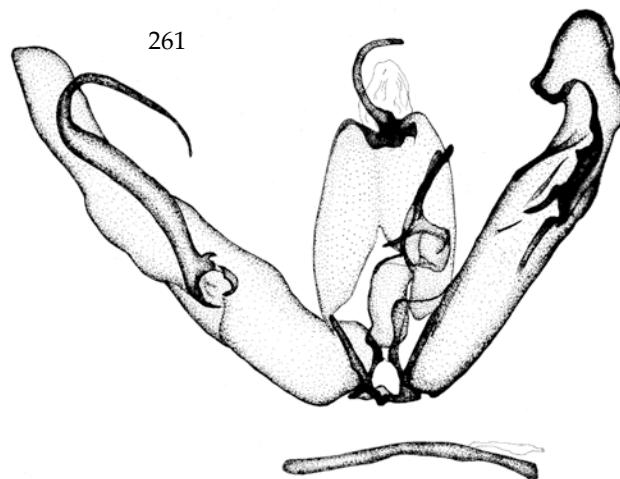


Fig. 261. *Emmelina aethes* (Walsingham, 1915). Paratype. Mexico, Vera Cruz, Atoyac, 1375 m, iv (H.H. Smith), gent BM 18154 (BMNH).

Fig. 262. *E. buscki* (Barnes & Lindsey, 1921). Mexico, Morelos, 19 km E Cuernavaca, 1300 m, 14.viii.1954 (J.G. Chillcott), gent CG 6113 (CNC).

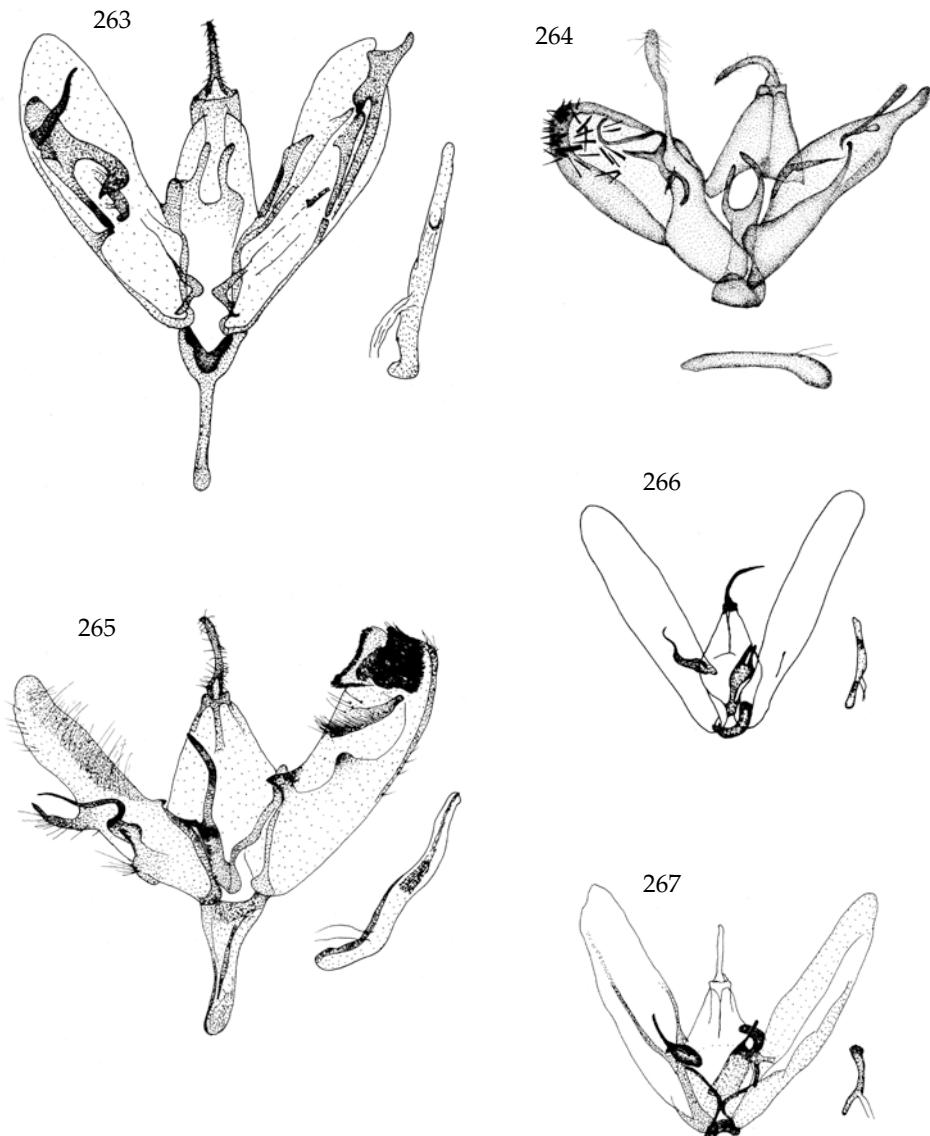


Fig. 263. *E. jason* (Meyrick, 1930). Holotype. Brazil, Queluz, no date (P. Germain), gent BM 18862 (BMNH).

Fig. 264. *E. monodactyla* (Linnaeus, 1758). USA, California, La Jolla, Scripps, 30.iv.1959 (H. Lemche), gent CG 4072 (ZMUC).

Fig. 265. *E. suspiciosus* (Meyrick, 1921). Lectotype. Ecuador, Huigra, 1370 m, vi.1914 (Parish), gent BM 18177 (BMNH).

Fig. 266. *Adaina costarica* Gielis, 1992. Holotype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6155 (Becker nr. 45996).

Fig. 267. *A. simplicius* (Grossbeck, 1917). Lectotype of *A. naiadopa* Meyrick. Paraguay, Makthlawaiga, v.1927 (C. S. C.), gent BM 18433 (BMNH).

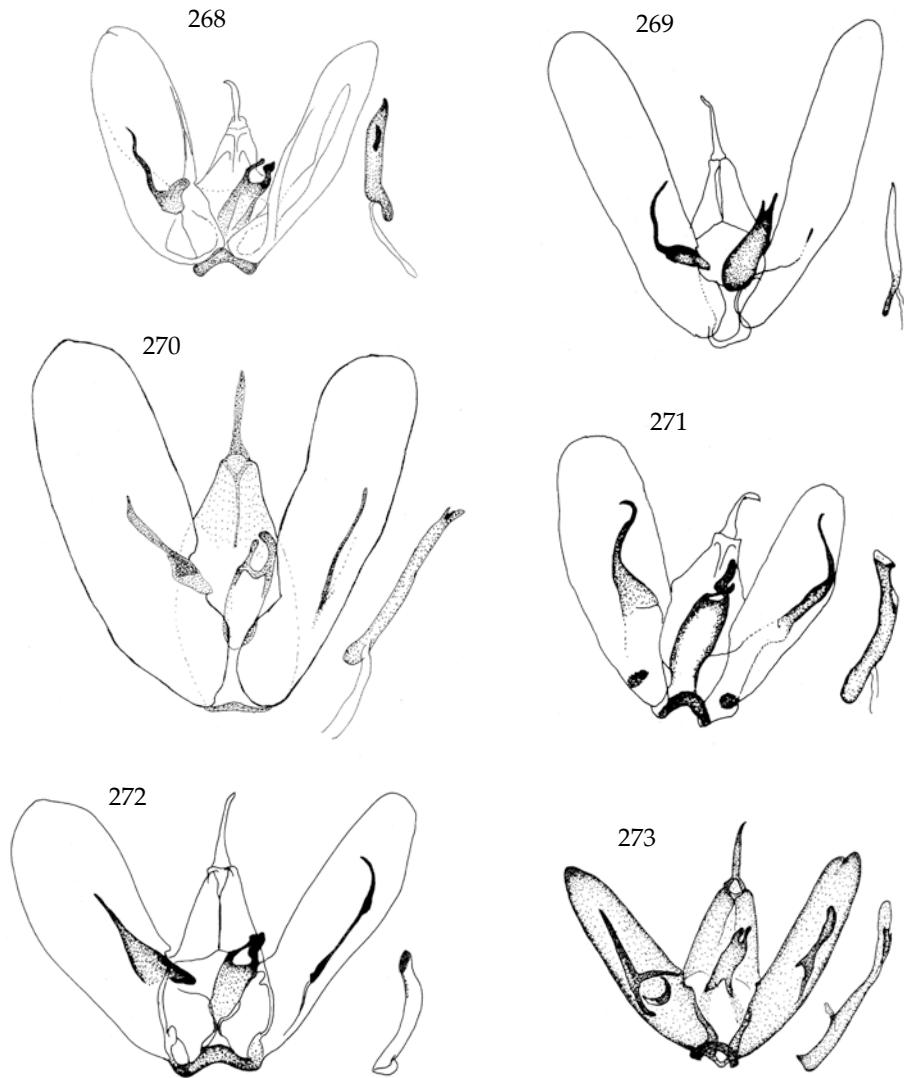


Fig. 268. *A. excreta* Meyrick, 1930. Holotype. Peru, Carabaya, Aguilani, 2755 m, vi.1905 (Ockenden), gent BM 18455 (BMNH).

Fig. 269. *A. parainvida* Gielis, 1992. Holotype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6144 (Becker nr 45995).

Fig. 270. *A. atahualpa* spec. nov. Holotype. Ecuador, Napo, 15 km SE Cosanga, Cocodrilo, 0°38'56"S 77°47'34"W, 1850 m, 7.x.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5251 (CG).

Fig. 271. *A. beckeri* Gielis, 1992. Holotype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6156 (Becker nr. 45996).

Fig. 272. *A. bernardi* Gielis, 1992. Holotype. Costa Rica, Punt. Monteverde, 1200-1700 m, 2-6.xii.1987 (Génier & Bertrand), gent CG 6180 (B. Landry).

Fig. 273. *A. obscura* Gielis, 1999. Holotype. Costa Rica, Guanacaste, 8 km SW Cuajiniquil, Est Murcielago, 100 m, vii.1990 (Curzo Microlep.), gent CG 3889 (Inbio).

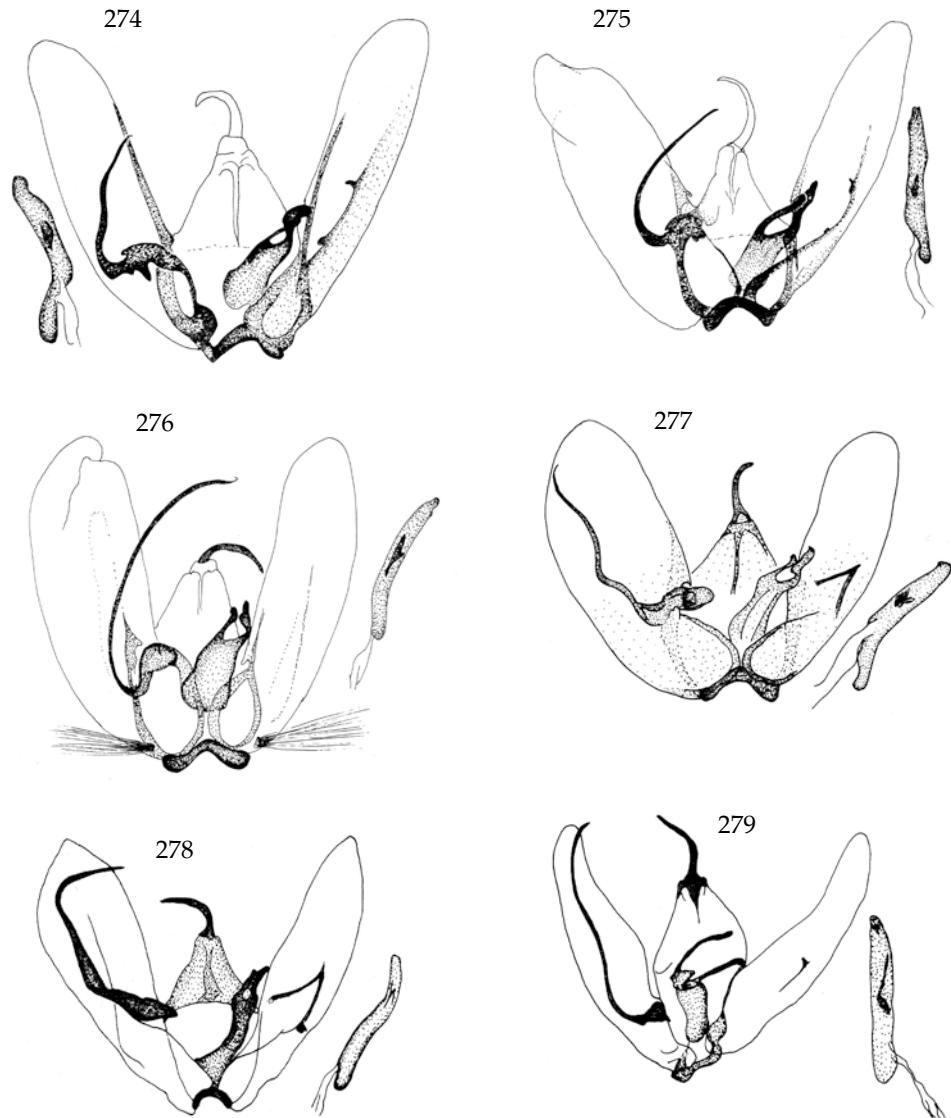


Fig. 274. *A. invida* (Meyrick, 1908). Lectotype. Sao Paulo, (19)07 (R.), gent BM 18459 (BMNH).

Fig. 275. *A. primulacea* Meyrick, 1929. Holotype. Taboga Island, Gulf of Panama, at light, 150 m, 23.ix. (19)24 (St. George Expedn. C. L. Collonette), gent BM 18456 (BMNH).

Fig. 276. *A. everdinae* Gielis, 1991. Holotype. Argentina, Salta, Rosaria de la Frontera, Los Banos, 6.iv.1979 (Mission Cientifica Danesa, sta. 72), gent CG 4176 (ZMUC).

Fig. 277. *A. desolata* Arenberger & Bond, 1995. Holotype. Colombia, Bogota, above National Parque, 2750 m, e.l. *Espeletiopsis corymbosa*, 27.viii.1989 (H. Sturm), gent BM 21122 (BMNH).

Fig. 278. *A. perplexus* (Grossbeck, 1917). Cuba occ., Matanzas, Veradero, 17.i.1983 (V. Felix), gent CG 3591 (V. Felix).

Fig. 279. *A. thomae* (Zeller, 1877). Brazil, GO, Goias, 500 m, 13-15.x.1984 (V.O. Becker), gent CG 6148 (Becker nr 53112).

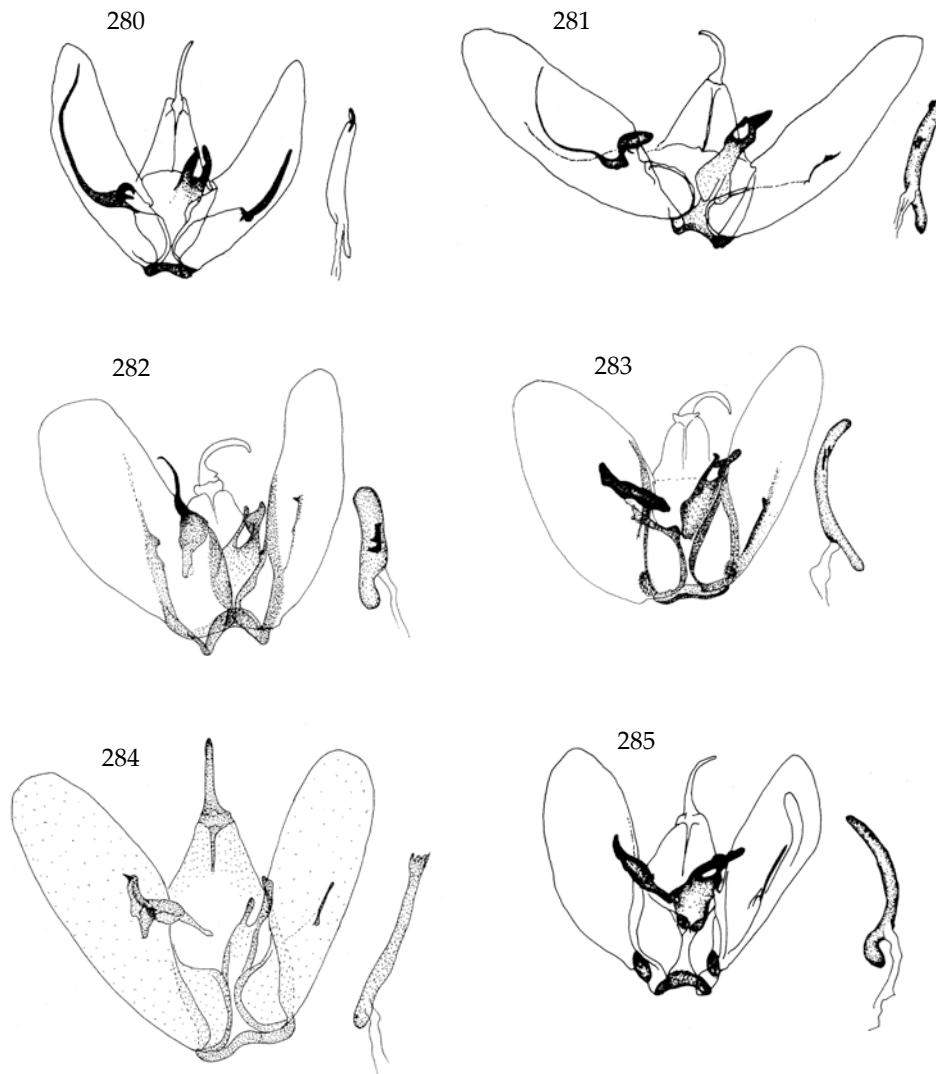


Fig. 280. *A. planaltina* Gielis, 1992. Holotype. Brazil, D(istrito) F(ederal), Planaltina, 1000 m, viii.1983 (V.O. Becker), gent CG 6150 (Becker nr. 41272).

Fig. 281. *A. zephyria* Barnes & Lindsey, 1921. Mexico, Oaxaca, 1.x.1923 (Osborn), gent CG 6136 (Bishop Mus).

Fig. 282. *A. bipunctatus* (Möschler, 1890). Virgin Islands, St Croix, 22.iii.1980 (H.K. Jensen), gent CG 4175 (ZMUC).

Fig. 283. *A. hodias* (Meyrick, 1908). Holotype. Brazil, Sao Paulo, (19)07 (R.), gent BM 18458 (BMNH).

Fig. 284. *A. bolivari* Cäpuse, 1987. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1°24'39"S 78°14'23"W, 1290 m, 26.ix.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5254 (CG).

Fig. 285. *A. fuscahodias* Gielis, 1992. Holotype. Mexico, Vera Cruz, Huatasco, 1300 m, 19-23.viii.1981 (V.O. Becker), gent CG 6147 (Becker nr 44043).

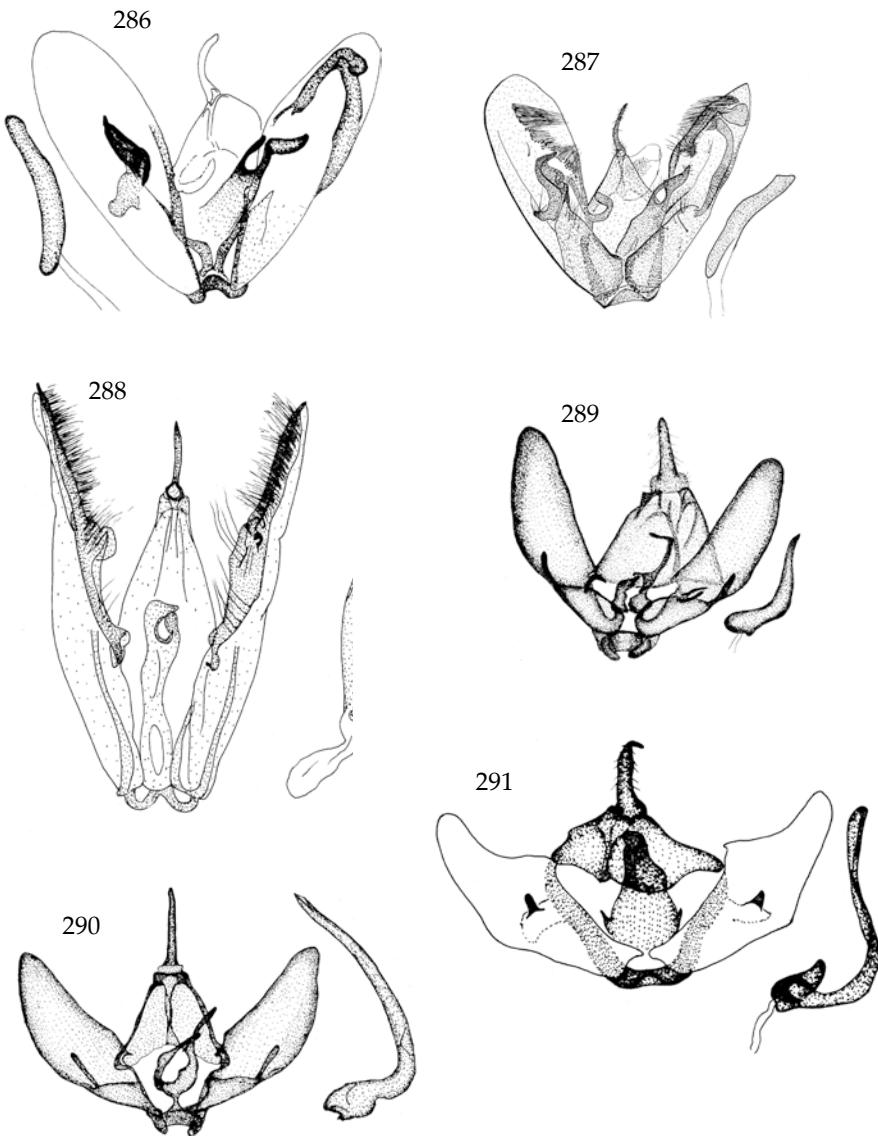


Fig. 286. *A. ambrosiae* (Murtfeldt, 1880). British Virgin Islands, Guana Island, 0-80 m, 9-23.vii.1987 (S.E. Miller & V.O. Becker), gent CG 6132 (BPBM).

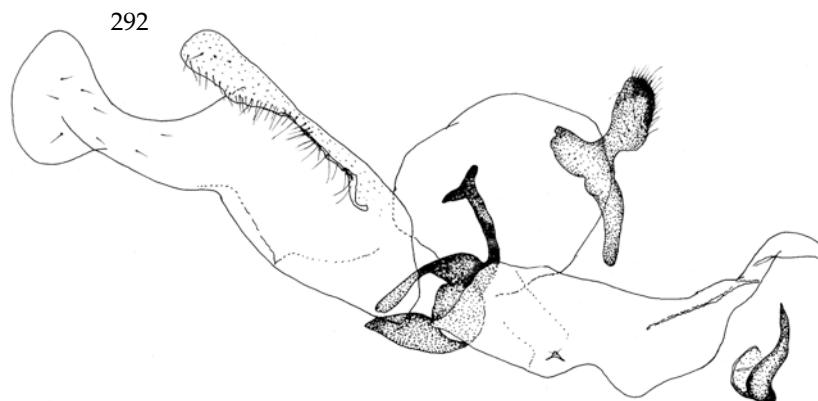
Fig. 287. *A. scalesiae* B. Landry, Roque & Matthews, 2004. After B. Landry & Gielis (1992), misidentified as *A. ambrosiae*.

Fig. 288. *A. ipomoeae* Bigot & Etienne, 2009. Jamaica, Moneague, 20.i.1905, gent CG 3576 (BMNH).

Fig. 289. *Patagonophorus murinus* Gielis, 1991. Holotype. Argentina, Rio Negro, San Carlos de Bariloche, Nirihuau 30.xii.1978 (Mision Cientifica Danesa, sta. 11), gent CG 4116 (ZMUC).

Fig. 290. *Chocophorus alternaria* (Zeller, 1874). Ecuador, Gauchayaeu, ix-x.1926 (Vorbeck), gent CG 4073 (ZMUC).

Fig. 291. *C. carabayus* (Arenberger, 1990). Ecuador, Pichincha, Road Quito - La Palma km 79, 1650 m, 25.iii.1982 (N. Venedictoff), gent CG 3358 (AME/MGCL).



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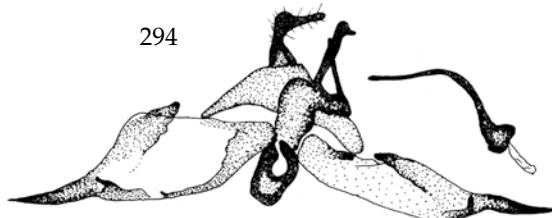


Fig. 292. *C. leptochorda* (Meyrick, 1913). Venezuela, Aragua, Rancho Grande, 1100 m, 21.ii.1972 (Munroe), gent CG 6047 (CNC).

Fig. 293. *C. mayaensis* spec. nov. Paratype. Costa Rica, Puntarenas, Res Biol Monteverde, Est La Casona, 1520 m, i.1992 (N. Obando), gent CG 3787 (Inbio).

Fig. 294. *C. venedictoffi* Gielis & Matthews, 1994. Holotype. Ecuador, Pichincha, Road Quito - Chiriboga km 40, 2480 m, 22.iii.1982 (N. Venedictoff), gent CG 3361 (AME/MGCL).

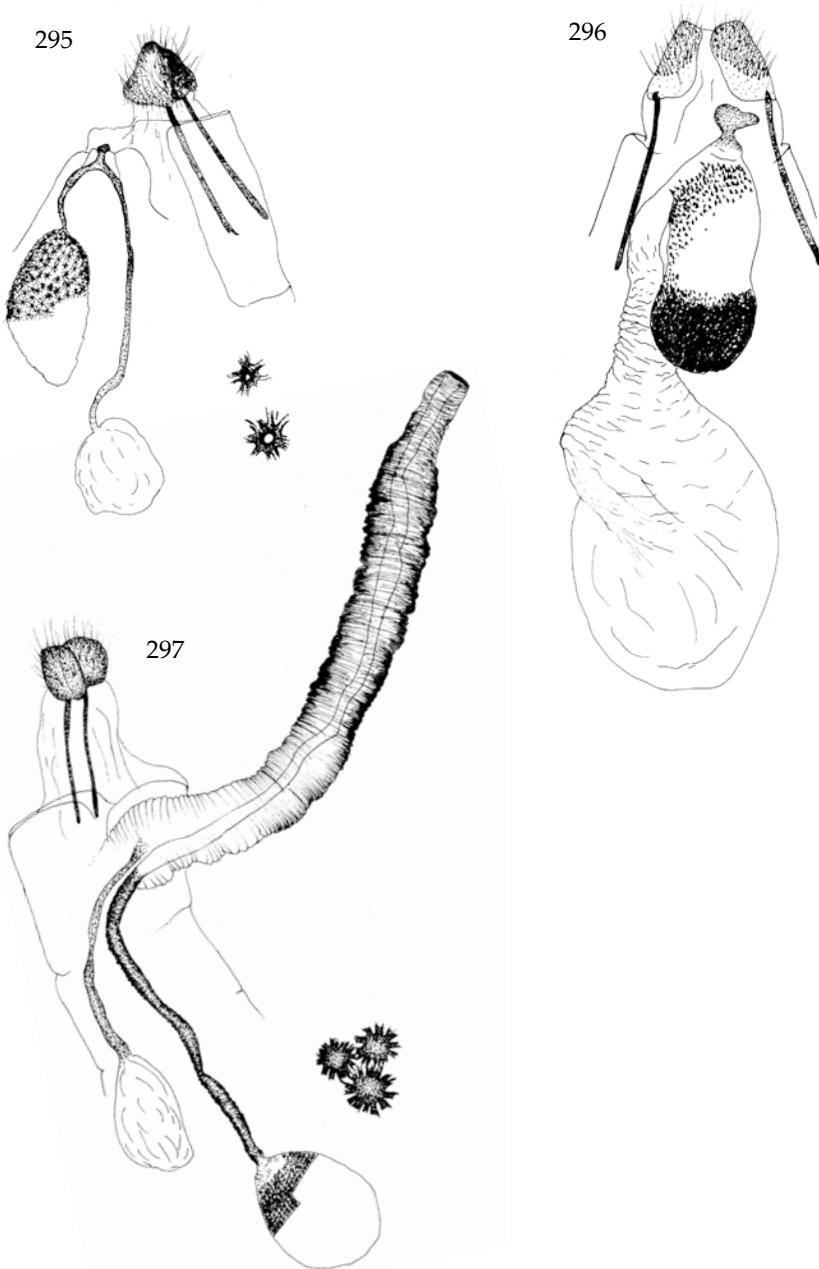


Fig. 295. *Hellinsia chamelai* (Gielis, 1992). Paratype. Mexico, Jalisco, Est. Biol. Chamelai, 8-16.vii.1985 (Chemsak ao), gent CG 6143 (LACM).

Fig. 296. *H. elhacha* Gielis, 1999. Holotype. Costa Rica, Guanacaste, 12 km SE de la Cruz, Cerro el Hacha, 25.vi.1992 (III curso parataxon leg.), gent CG 3861 (Inbio).

Fig. 297. *H. ochracealis* (Walker, 1864). Peru, Pasco, Pan de Azucar, 8.vii.1961 (F.S. Teuxal), gent CG 6154 (LACM).

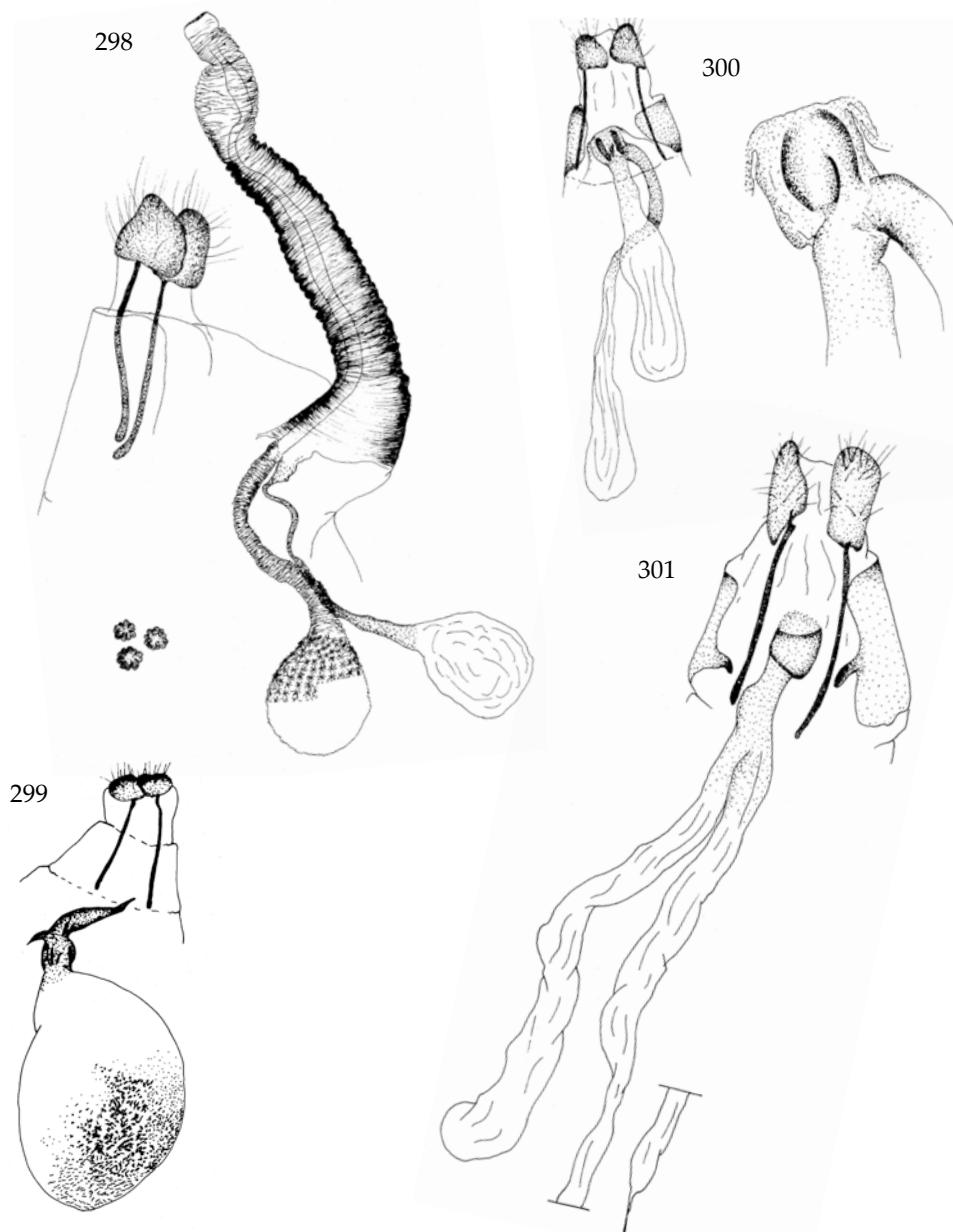


Fig. 298. *H. paraochracealis* (Gielis, 1992). Paratype. Brazil, D(istrito) F(ederal), Planaltina, 1000 m, 15.viii.1985 (Becker), gent CG 6141 (Becker nr. 57718).

Fig. 299. *H. spiculibursa* Gielis, 1996. Holotype. Venezuela, San Estevan près Puerto Caballo, vi-vii.1877 (Hahnel de Sagan), gent CG 5040 (BMNH).

Fig. 300. *H. homodactylus* (Walker, 1864). USA, North Carolina, Buncombe Co, Asheville, 24.vi.1989 (V. Albu), gent CG 3647 (V. Albu).

Fig. 301. *H. mollis* (Walsingham, 1915). Paratype. Guatemala, Zapote, Volcan de Fuego, 610 m, v-vi.1879 (Champion), gent. CG 5088 (BMNH).

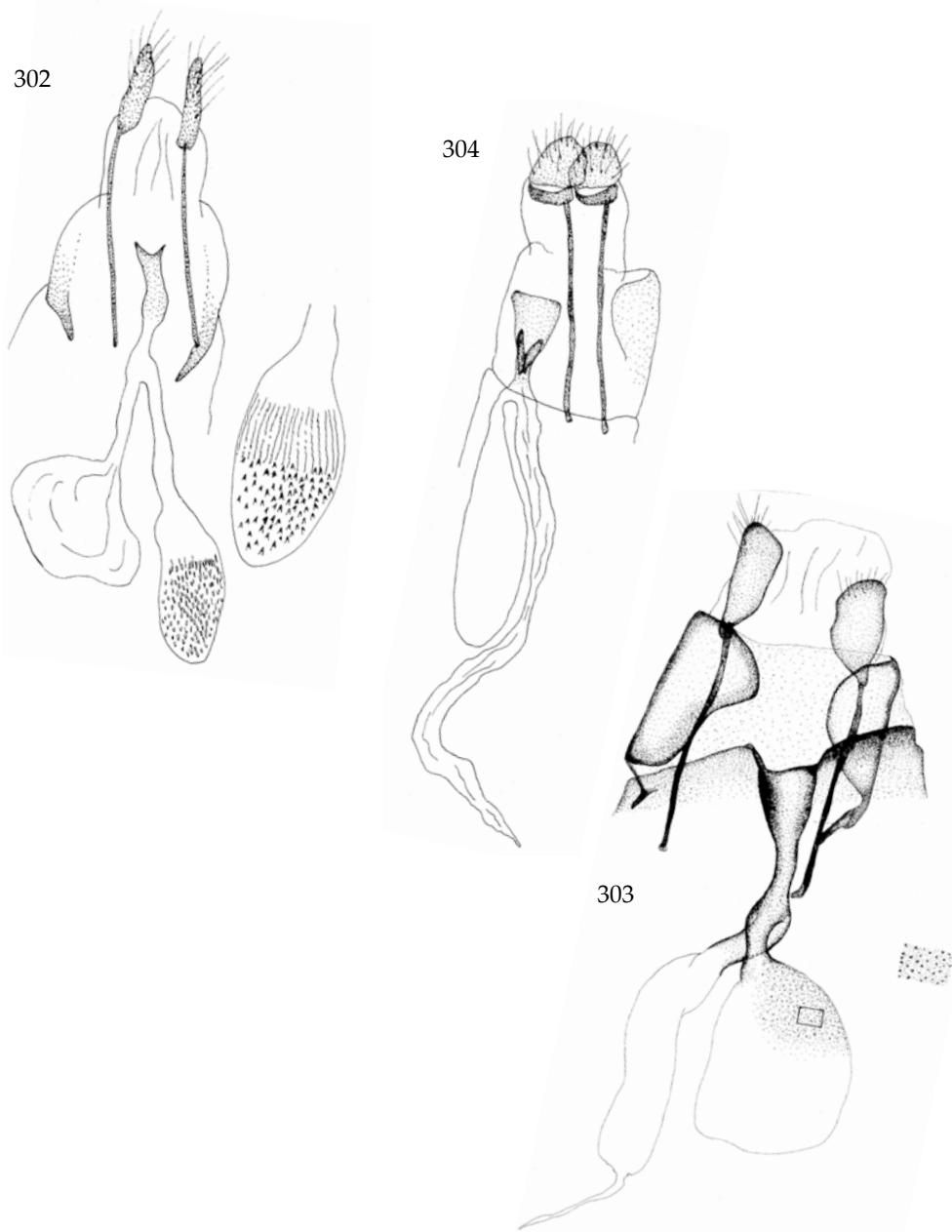


Fig. 302. *H. paccha* spec. nov. Paratype. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1290 m, 26.ix.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5245 (CG).

Fig. 303. *H. angulofuscus* (Gielis, 1991). Paratype. Paraguay, Asuncion, 15-30.vi.1905 (Babarczy), genitalia CG 4102 (ZMUC).

Fig. 304. *H. nodipes* (Zeller, 1877). Costa Rica, Puntarenas, Monteverde, 1400 m, 12-15.vi.1974 (W.A. Harding, ao), gent CG 6329 (LACM).

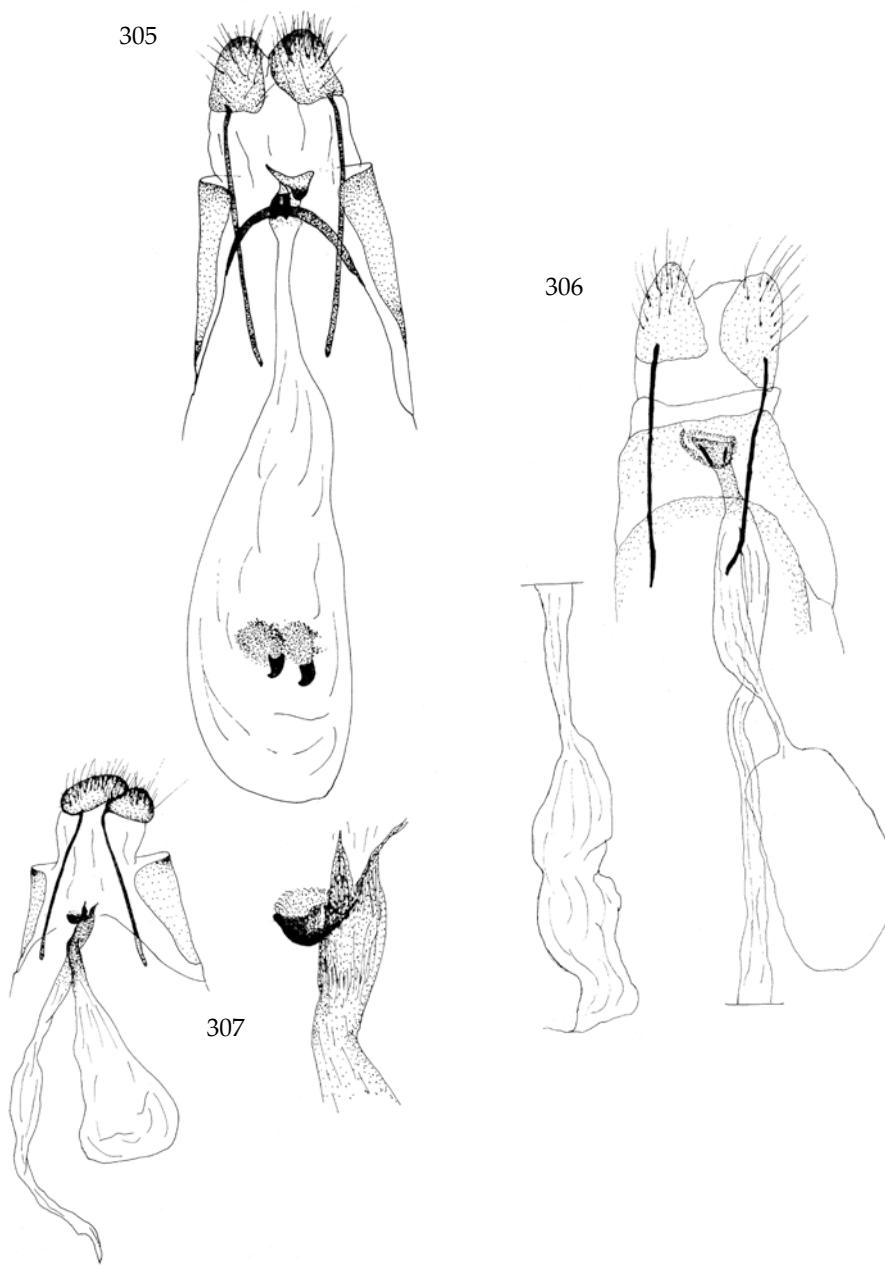


Fig. 305. *H. praealtus* (Walsingham, 1915). Paratype. Guatemala, Alta Vera Paz, Balheu, 1175 m, 3-5. ii.1880 (G.C. Champion), gent BM 17930 (BMNH).

Fig. 306. *H. emmorus* (Walsingham, 1915). Guatemala, Molina Helvetia, no date (G. Brückner), gent CG 5585 (ZMB).

Fig. 307. *H. nauarches* (Meyrick, 1930). Holotype. Peru, Carabaya, Agualani, dry season, 2750 m, vi.1905 (G. Ockenden), gent BM 18454 (BMNH).

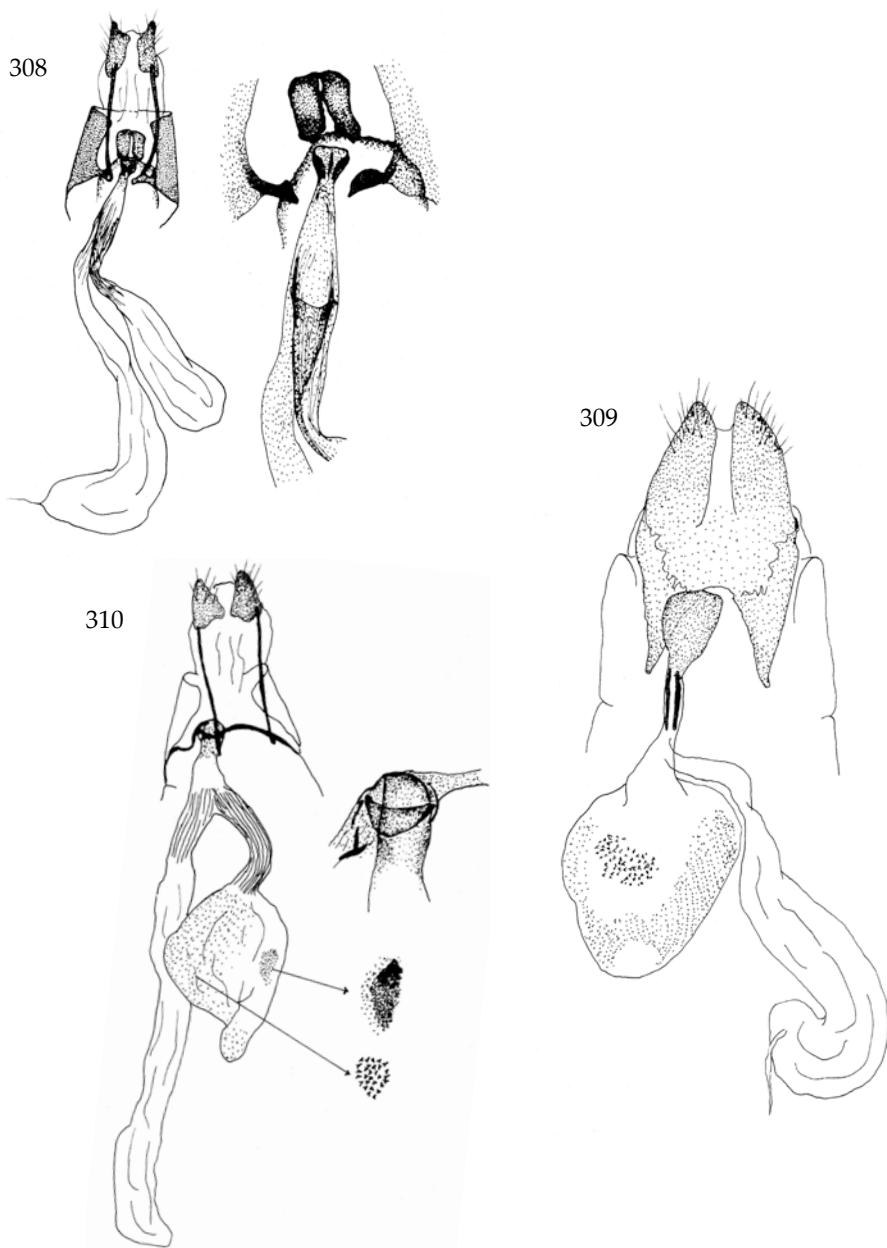


Fig. 308. *H. paleaceus* (Zeller, 1873). USA, Arkansas, Washington Co, Devils Den State Park, 23.vii.1966 (R. Hodges), gent USNM EDC-902 (USNM)

Fig. 309. *H. spermatias* (Meyrick, 1908). Paraguay, Paraguani, Sapucay, 1.v.1994 (U. Drechsel), gent CG 6425 (CG).

Fig. 310. *H. beneficus* (Yano & Heppner, 1983). Hawai'i Islands, Hawai'i Island, at Volcano, 1160 m, 12. vii.1976 (F.C. Howarth), gent CG 6422 (CG).

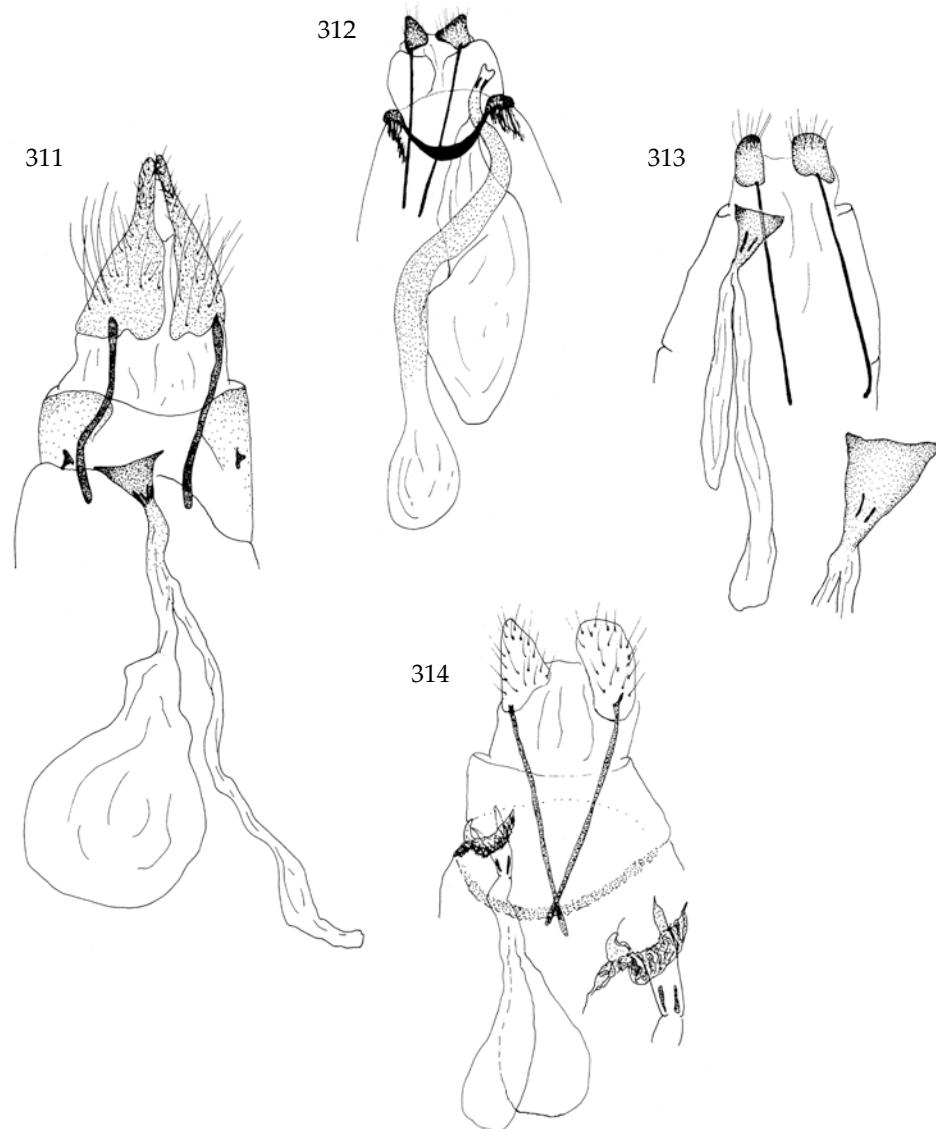


Fig. 311. *H. oxyntes* (Meyrick, 1908). Paralectotype. Brazil, Sao Paulo, (19)07 (R), gent CG 5081 (BMNH).
 Fig. 312. *H. hoguei* Gielis, 1996. Paratype. Mexico, Sinaloa, 1,7 km W El Palmito, 2050 m, 26.viii.1976 (J.P. & R.E. Donahue), gent CG 6249 (LACM).

Fig. 313. *H. pallens* spec. nov. Paratype. Ecuador, Pichincha, Septimo Paraise Res., 1300 m, 10.v.2002 (B. Landry), gent CG 4832 (MNHG).

Fig. 314. *Hellinsia scripta* Gielis, 1999. Paratype. Costa Rica, Puntarenas, Res Biol Monteverde, Est La Casona, 1520 m, ii.1991 (N. Obando), gent CG 3873 (CG).

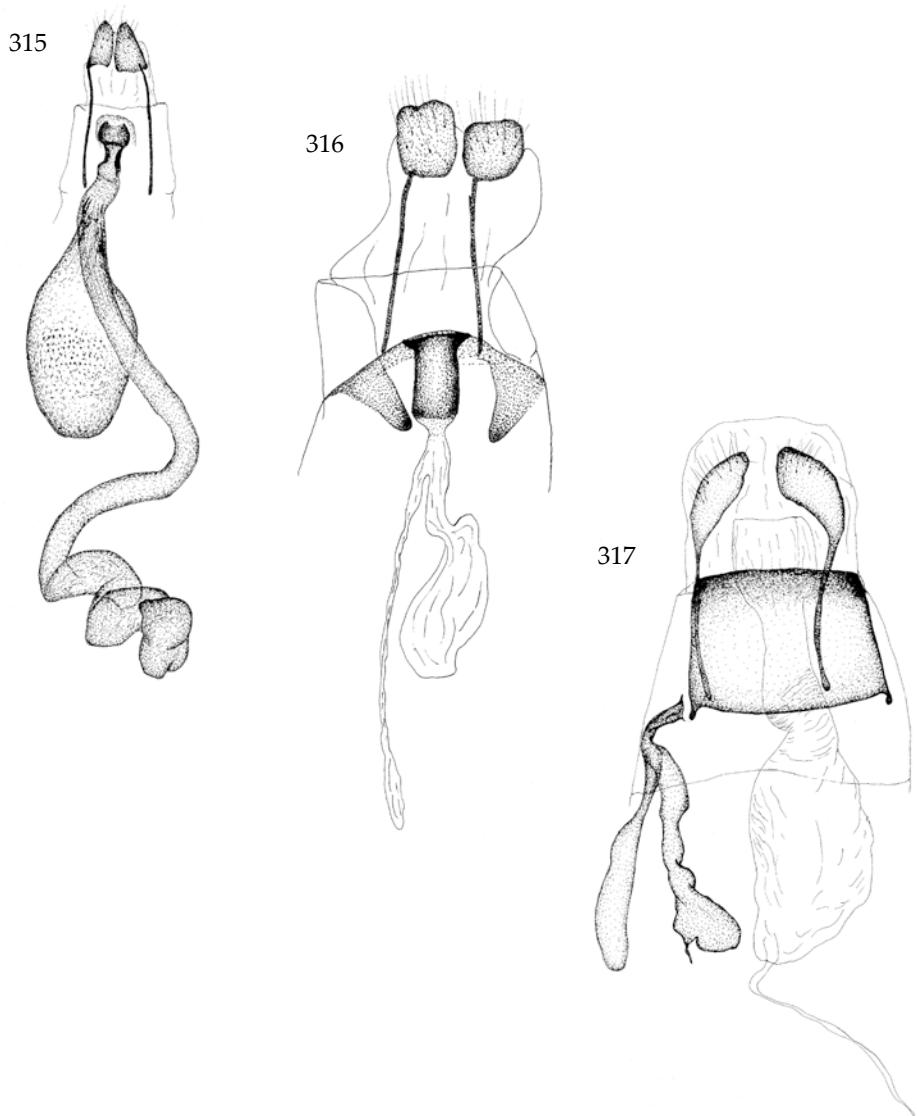
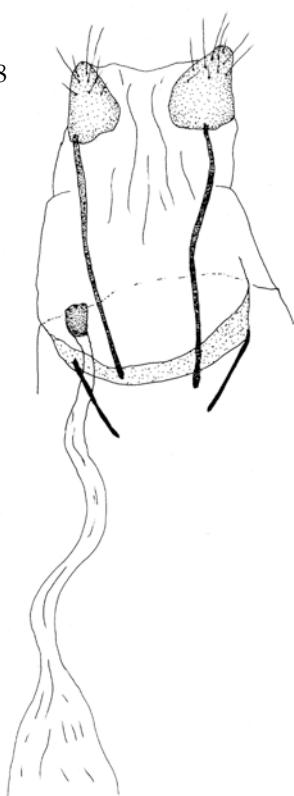


Fig. 315. *H. epileucus* (Walsingham, 1915). Paratype. Mexico, Tabasco, Teapa, iii (H.H. Smith), gent BM 18144 (BMNH).

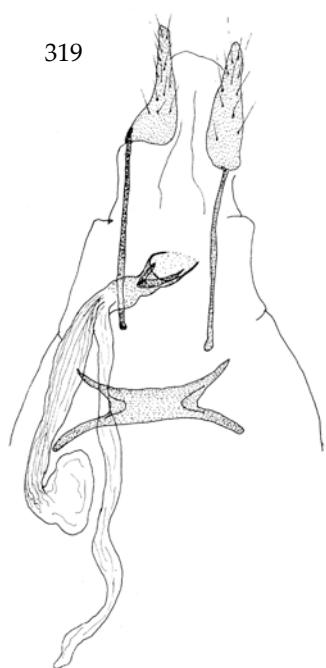
Fig. 316. *H. mauleicus* (Gielis, 1991). Paratype. Chile, El Portezuela, 7 km N Santiago, 500 m, 22-25.x.1981 (D. & M. Davis), gent CG 6090 (USNM).

Fig. 317. *H. siskaellus* (Gielis, 1991). Paratype. Argentina, Rio Negro, San Carlos de Bariloche, Colonia Suiza, 810 m, 6.i.1979 (Mis Sci Dan), gent CG 4127 (ZMUC).

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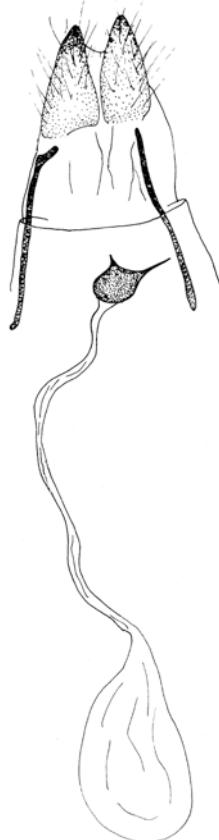


Fig. 318. *H. solanoi* Gielis, 1999. Costa Rica, Limón, PN Tortuguero, Est Cuarto Esquinzo, 0 m, x.1990 (J. Solano), gent CG 5588 (Inbio).

Fig. 319. *H. cuculla* spec. nov. Paratype. Ecuador, Loja, Rd Loja - Piñas km 58, 2030 m, 21.iv.1982 (N. Venedictoff), gent. CG 5950 (CG).

Fig. 320. *H. tetraonipennis* (Walsingham, 1915). Paratype. Guatemala, Cerro Zunil, 1220-1525 m, 1880 (Chapman), gent CG 5087 (BMNH).

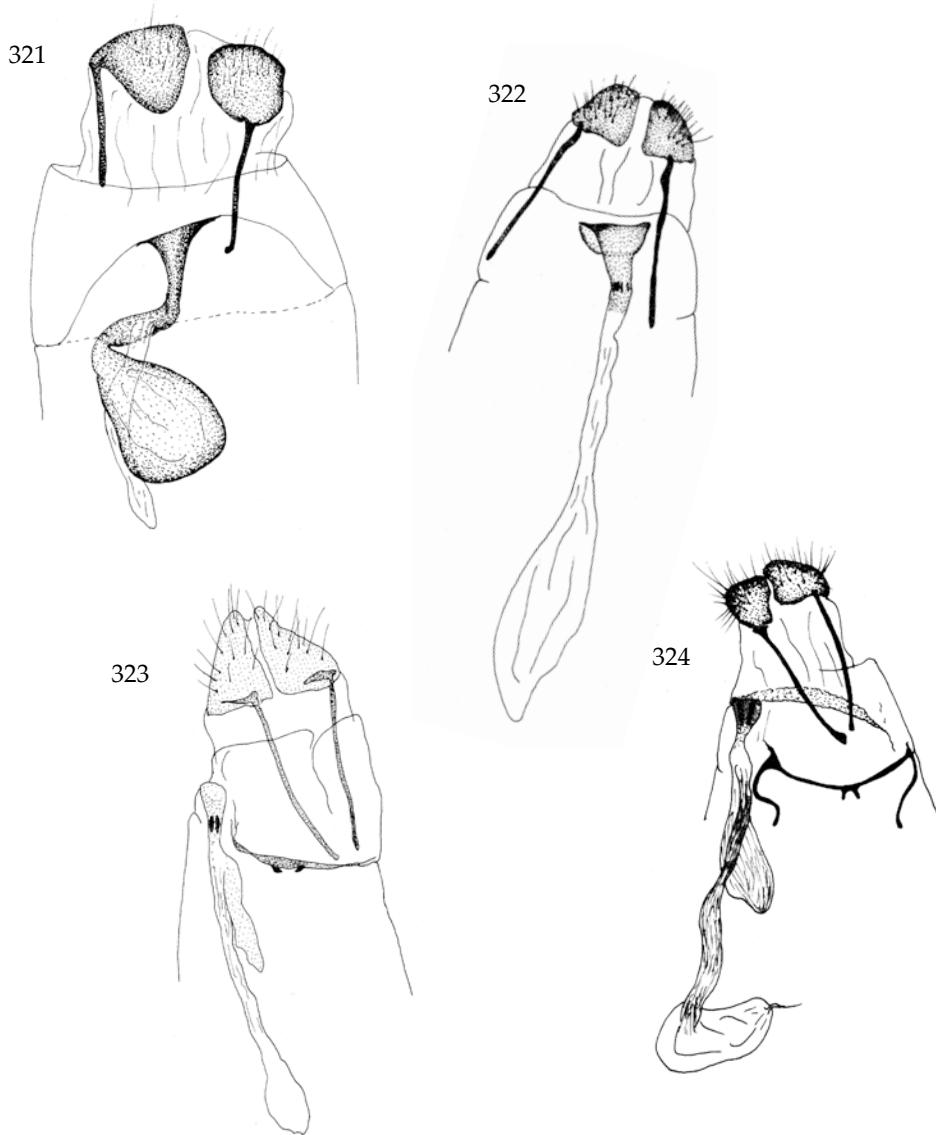


Fig. 321. *H. betsiae* (Gielis, 1991). Paratype. Chile, Santiago, Guayacan, 1100 m, x.1952 (Peña), gent CG 6046 (CNC).

Fig. 322. *H. caras* spec. nov. Paratype. Peru, Puno, 5 km E Limbani, 3000 m, 28.iii.1987 (O. Karsholt), gent CG 4285 (ZMUC).

Fig. 323. *H. crescens* (Meyrick, 1926). Ecuador, Carchi, El Angel +12,5 km, 3500 m, 11.i.1985 (N. Venedictoff), gent CG 5935 (AME/MGCL).

Fig. 324. *H. falsus* (Barnes & Lindsey, 1921). Paratype. Holotype. U.S.A., Arizona, Gila Co, xii, gent CNC MIC 652 (CNC).

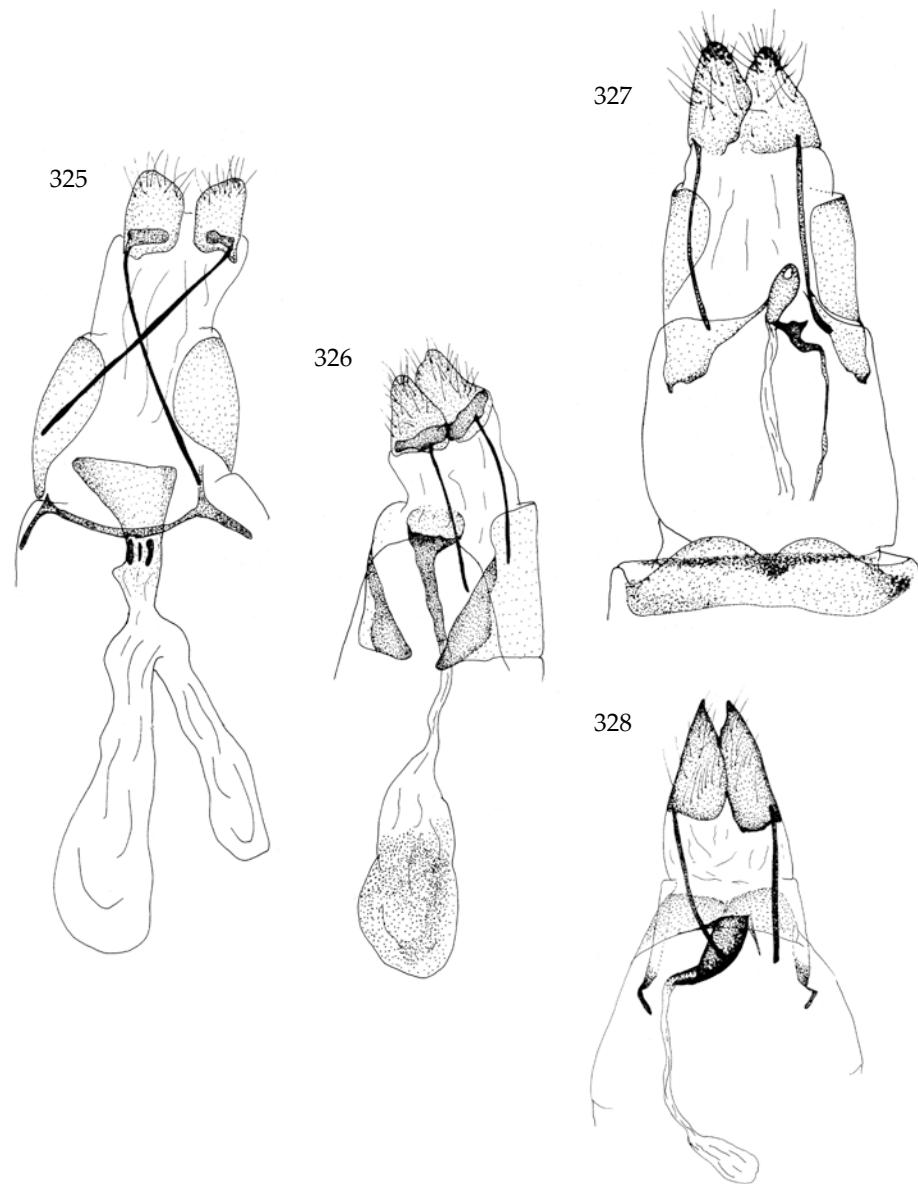


Fig. 325. *H. fishii* (Fernald, 1893). Mexico, DN Baja California, O de las Cruces, 17.vii.1934 (D. Meadows), gent CG 3341 (USNM).

Fig. 326. *H. inquinatus* (Zeller, 1873). USA, West Virginia, Kanahwa Co, Charleston, Kanahwa City, 20.viii.1994 (V. Albu), gent CG 3640 (CG).

Fig. 327. *H. phloeochroa* (Walsingham, 1915). Paratype. Panama, Chirique, Volcan de Chirique, 610-915 m, 1881-1882 (G.C. Champion), gent BM 17931 (BMNH).

Fig. 328. *H. surinamensis* (Sepp, 1855). Argentina, Buenos Aires, 1.iii.1906 (Wilkinson), gent BM 18463 (BMNH).

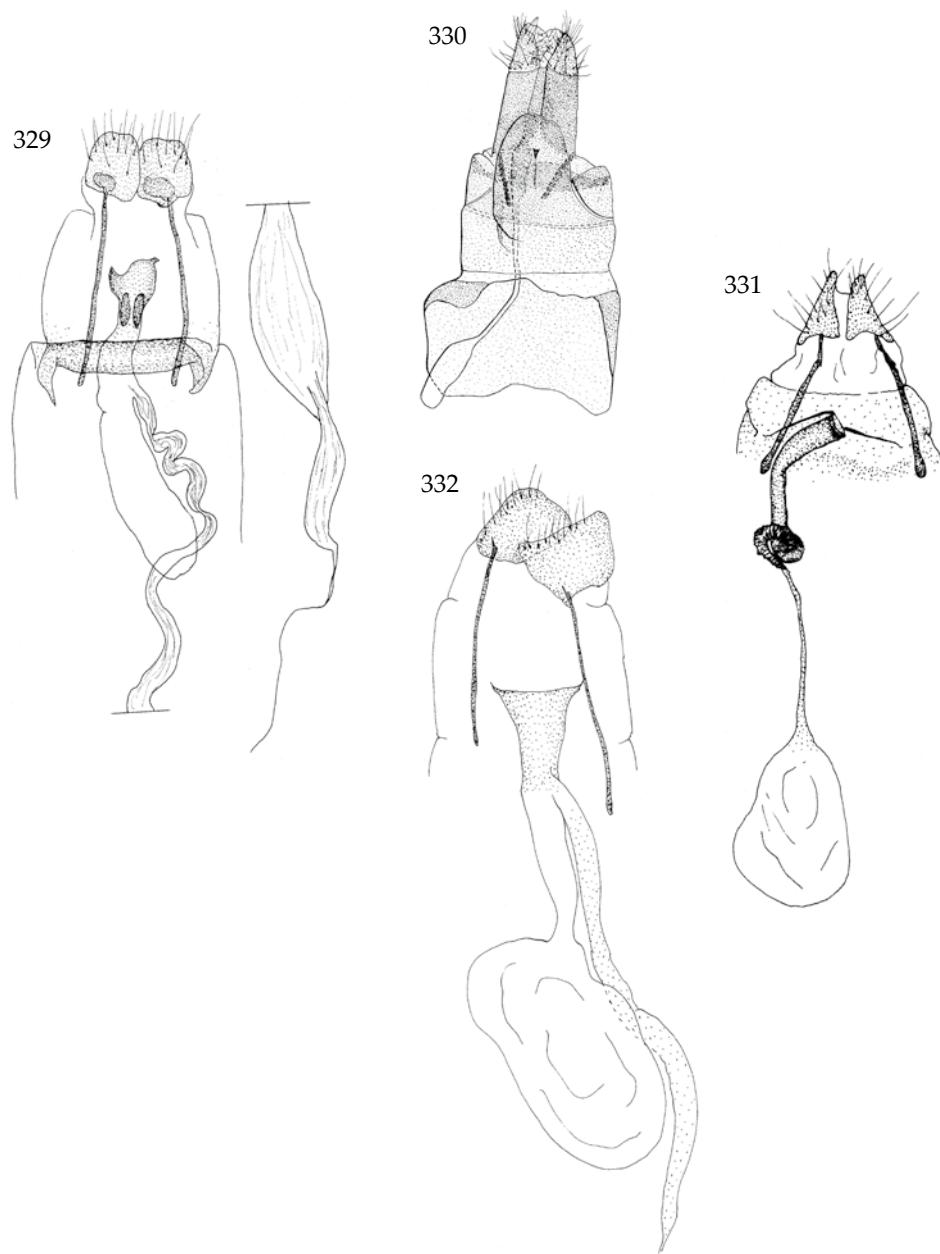


Fig. 329. *H. magnus* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20. xi.1984 (N. Venedictoff), gent CG 5928 (AME/MGCL).

Fig. 330. *H. devriesi* (B. Landry & Gielis, 1992). After B. Landry & Gielis (1992).

Fig. 331. *H. glochinias* (Meyrick, 1908). Paratype. Brazil, Petropolis, 07 (R.), gent CG 5082 (BMNH).

Fig. 332. *H. argutus* (Meyrick, 1926). Ecuador, Loja, 10 km S Loja, P.N. Podocarpus, 2850 m, 8.x.2002 (C. & F.K. Gielis), gent CG 5247 (CG).

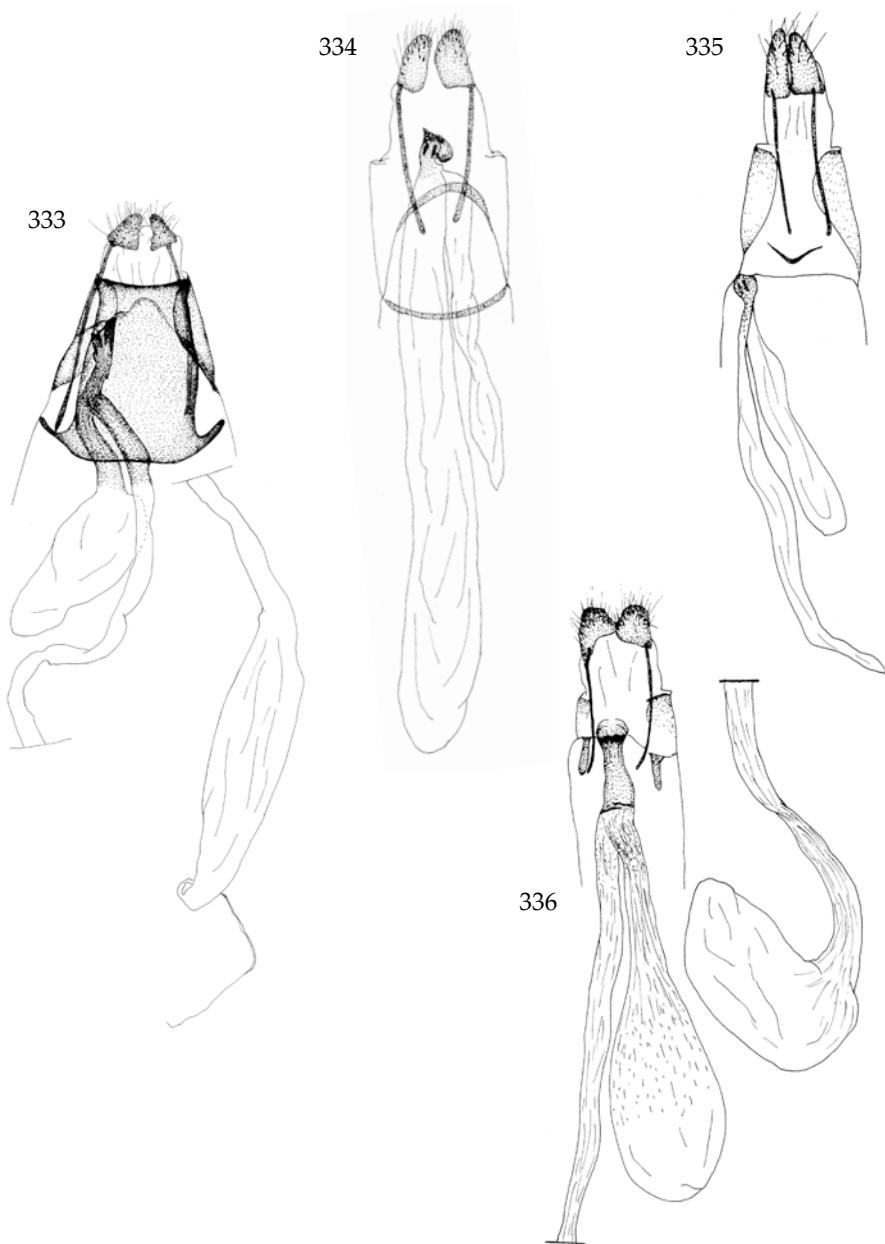


Fig. 333. *H. balanotes* (Meyrick, 1908). USA, Texas, Harlingen, 30.i.1981 (R.S. Peigler), gent CG 4074 (ZMUC).

Fig. 334. *H. fusciciliatus* (Zeller, 1877). Holotype. Colombia, Bogota, ii-iii, gent BM 18705 (BMNH).

Fig. 335. *H. quitus* spec. nov. Paratype. Ecuador, Morona-Santiago Prov, Macas, 1000 m, 2-8.i.1998 (V. Pelz), gent CG 4520 (CG).

Fig. 336. *H. sublatus* (Walsingham, 1915). Holotype. Mexico, Guerrero, Amula, 1830 m, viii (H.H. Smith), gent BM 18146 (BMNH).

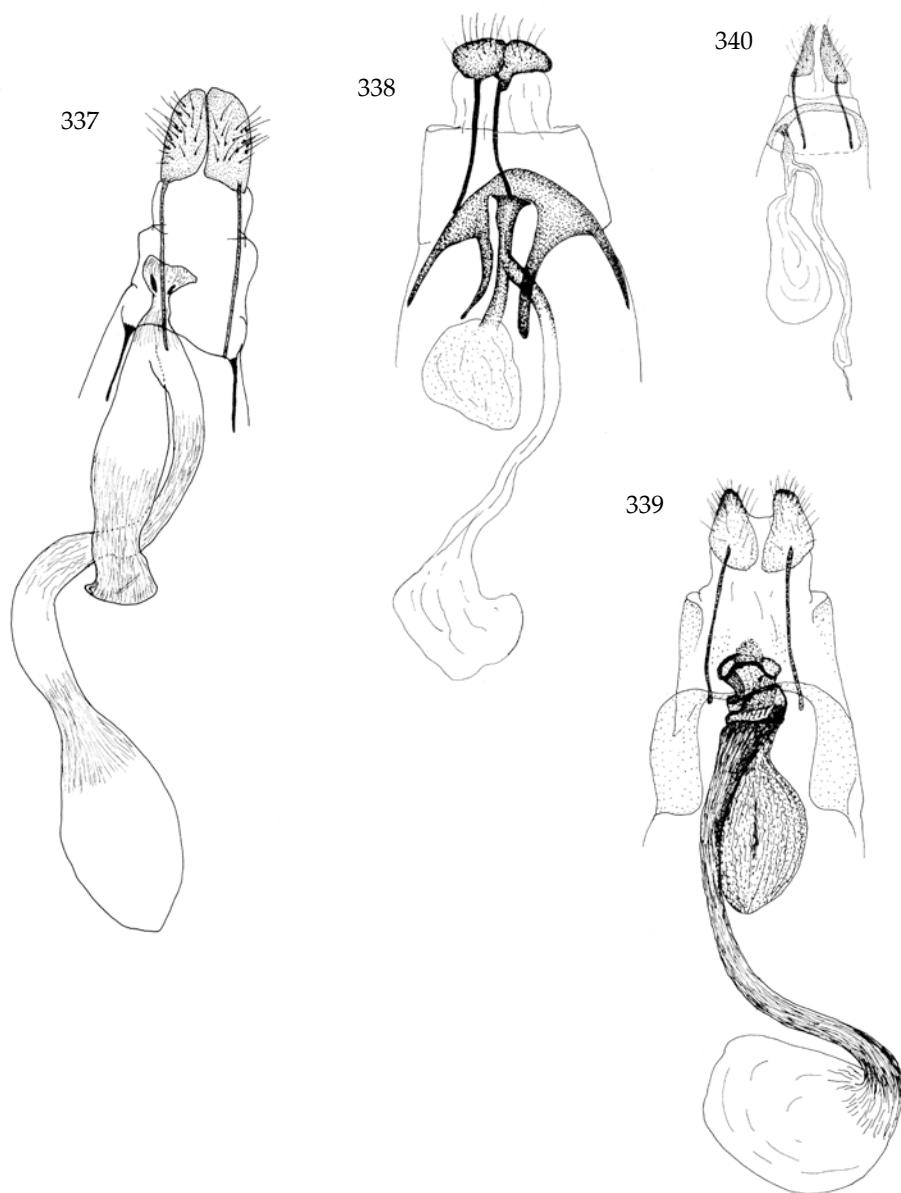


Fig. 337. *H. tinctus* (Walsingham, 1915). Holotype ♀: Mexico, Guerrero, Amula, 1830 meter, viii-ix (H.H. Smith), gent BM 18149 (BMNH).

Fig. 338. *H. hololeucus* (Zeller, 1874). Chile, Valle del Mer, El Salto, 2.ii.1983, gent CG 1982 (MNHC).

Fig. 339. *H. phlegmaticus* (Walsingham, 1915). Holotype. Mexico, Vera Cruz, Jalapa, no date (M. Trujillo), gent BM 18153 (BMNH).

Fig. 340. *H. palmatus* (Meyrick, 1908). Paralectotype. Brazil, Sao Paulo, (19)07, (R.), gent CG 5089 (BMNH).

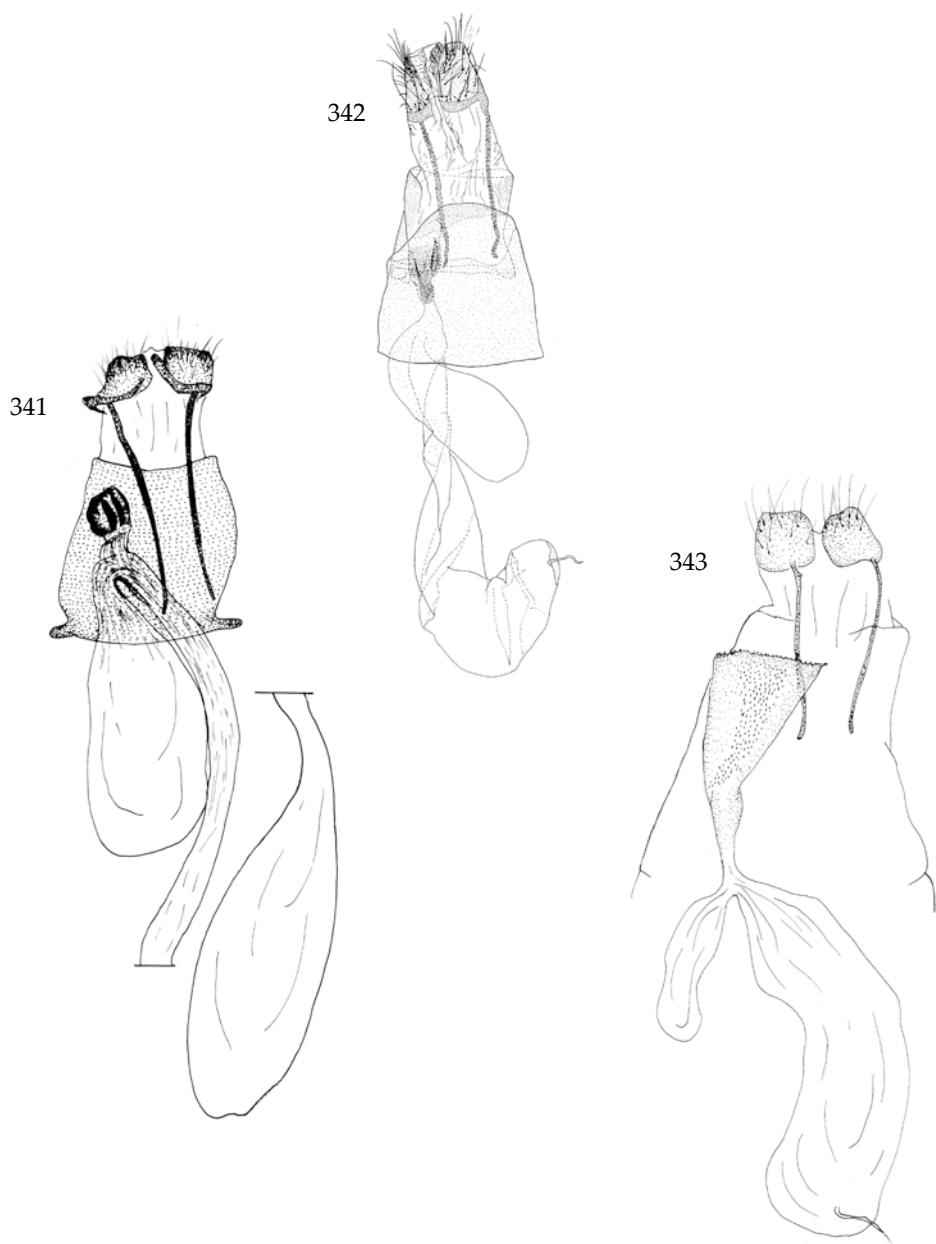


Fig. 341. *H. grandis* (Fish, 1881). USA, California, San Diego, San Felipe Valley, 5.ix.1932 (Meadows), gent USNM EDC-186 (USNM).

Fig. 342. *H. nephogenes* (Meyrick, 1926). After B. Landry & Gielis (1992).

Fig. 343. *H. calais* (Meyrick, 1930). COSTA RICA, S Jose, est. Zurqui, 500 m ante de Tunel, 1600 m, x.1990 (J. Corrales), gent CG 3858 (Inbio).

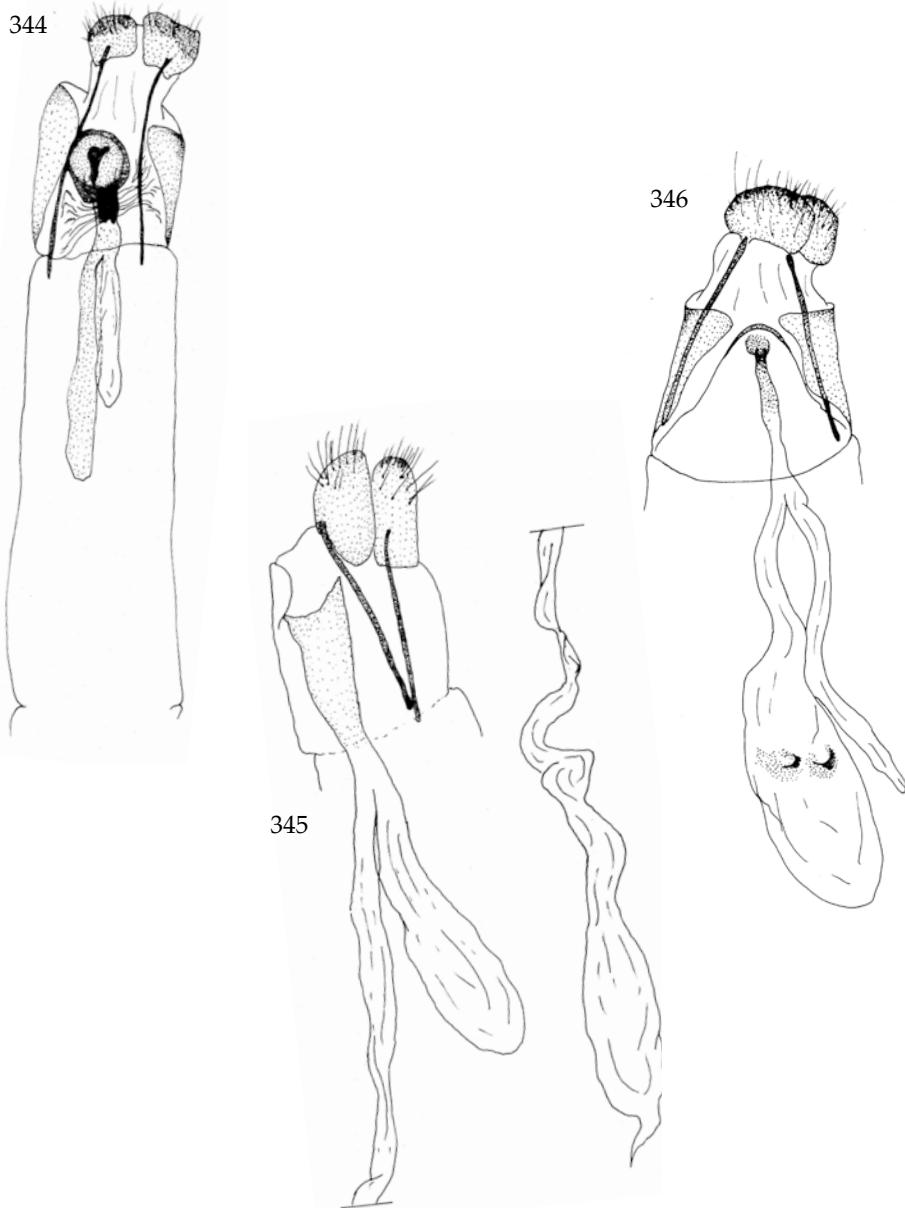


Fig. 344. *H. longifrons* (Walsingham, 1915). USA, Arizona, Cochise, Palmerlee, n.d., gent CG 3306 (USNM).

Fig. 345. *H. barbatus* Gielis, 1996. COSTA RICA, Volcan Irazu, NW slope, 2200 m, no date (Tattenbach), gent CG 5587 (ZMB).

Fig. 346. *H. nivalis* (Meyrick, 1908). Paralectotypes. Jamaica, New Castle, (19)07 (R.), Gent CG 5051 (BMNH).

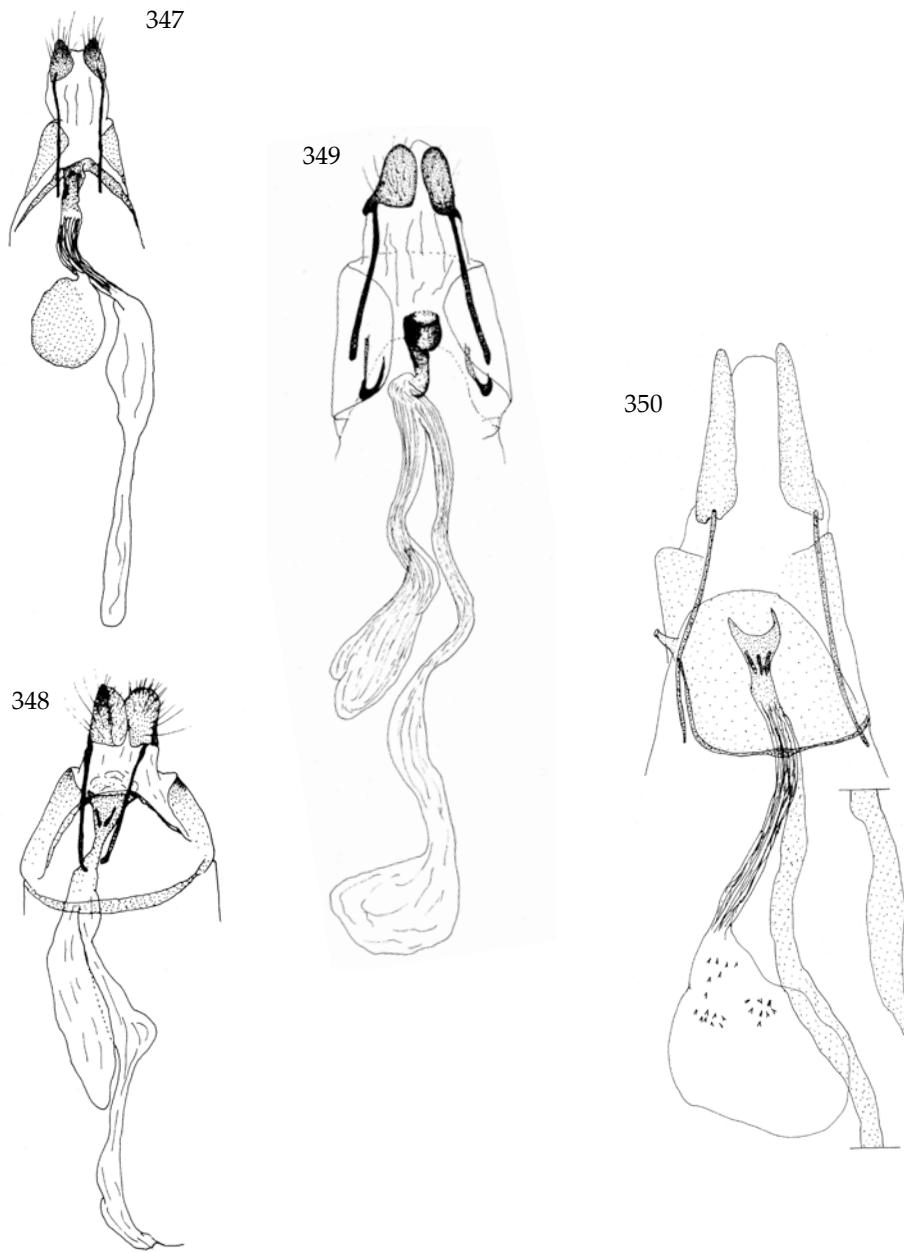


Fig. 347. *H. delospilus* (Meyrick, 1921). Ecuador, Morona-Santiago, Macas, Gral Proaño, Rio Jurumbá 14-15.iv.1998 (V. Pelz), gent CG 6423 (CG).

Fig. 348. *H. ignifugax* (Walsingham, 1915). Holotype. Guatemala, Totanicapam, 2600-3050 m, viii.1880 (G.C. Champion), gent BM 18151 (BMNH).

Fig. 349. *H. glaphyrotes* (Meyrick, 1908). Brazil, MG, Sete Lagoas, 720 m, 13.iii.1969 (V.O. Becker), gent CG 6093 (Becker).

Fig. 350. *H. stadias* (Meyrick, 1908). Paralectotype. Brazil, Petropolis, (19)07 (R.), gent CG 5074 (BMNH).

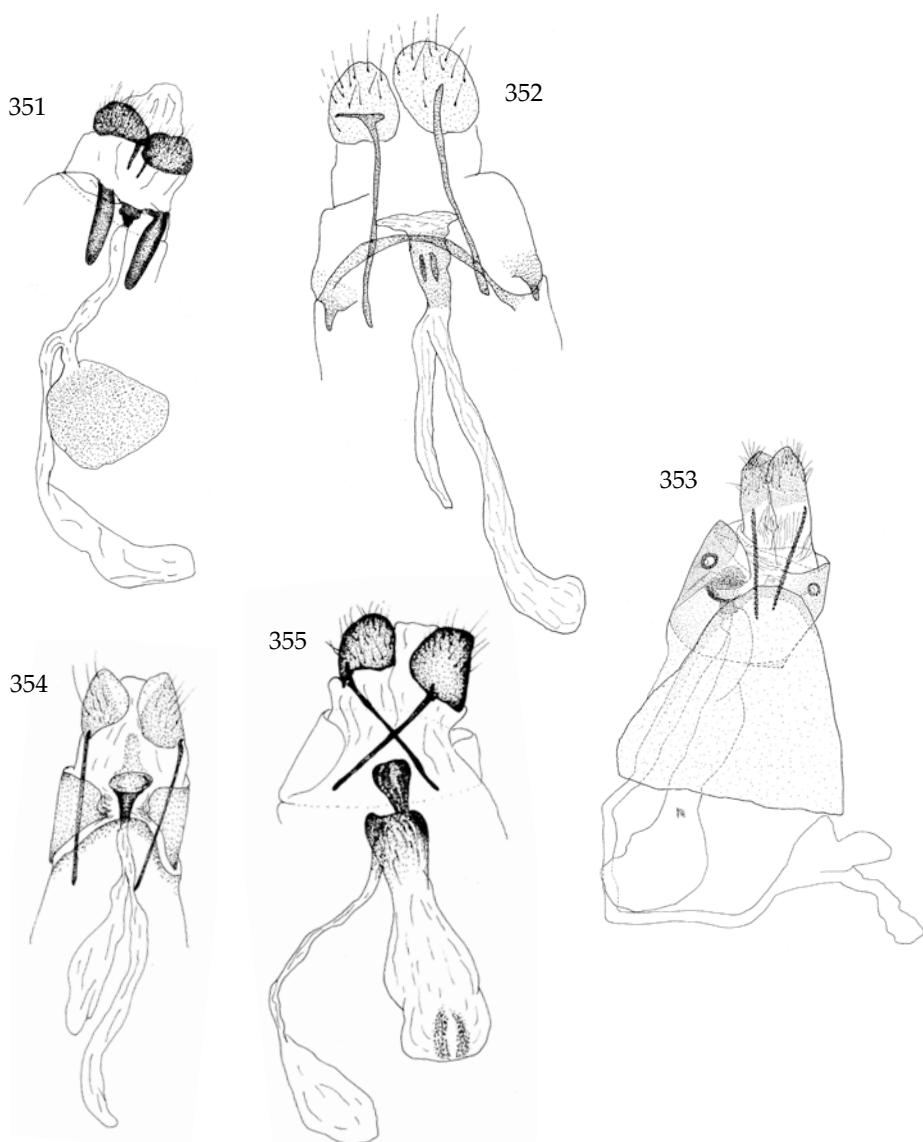


Fig. 351. *H. mallecoicus* (Gielis, 1991). Paratype. Chile, Malleco, Angol, Los Alpes, 650 m, 17.iii.1979 (Mis. Cient. Danesa, Sta 60), gent CG 4167 (ZMUC).

Fig. 352. *H. paraglochinias* Gielis, 1996. Ecuador, Pichincha, Rd Quito - Chiriboga 33 km, 2650 m, 20. xii.1984 (N. Venedictoff), gent CG 5945 (AME/MGCL).

Fig. 353. *H. cristobalis* (B. Landry & Gielis, 1992). After B. Landry & Gielis (1992).

Fig. 354. *H. fissuripuncta* Gielis, 1999. Paratype. Costa Rica, Cartagena, PN Tapanti, Quebrada Segunda, 1250 m, i-1993 (G. Mora), gent CG 3871 (Inbio).

Fig. 355. *H. grandaeus* (Meyrick, 1931). Argentina, Terra del Fuego, Estancia Haberton, 25.i.1979 (Mis Sci Danese), gent CG 4166 (ZMUC).

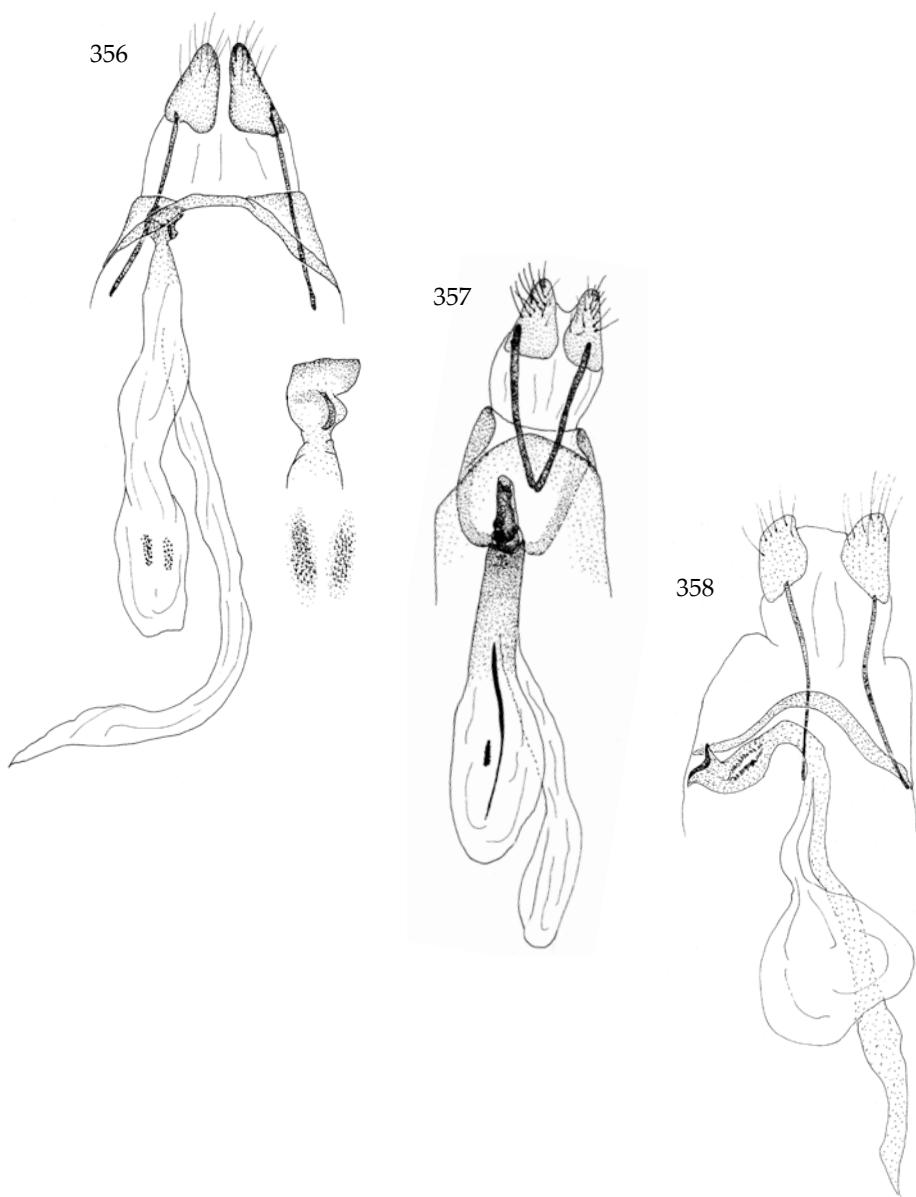


Fig. 356. *H. praenigratus* (Meyrick, 1921). Ecuador, Morona-Santiago, Macas, 11-23.xii.1997 (V. Pelz), gent CG 4521 (CG).

Fig. 357. *H. fumiventris* (Zeller, 1877). Peru, Ancash, 15 km N Carash, Rio Salta Valley, 2000 m, 19-21. ii.1987 (O. Karsholt), gent CG 4288 (ZMUC).

Fig. 358. *H. malesanus* (Meyrick, 1921). Paralectotype. Peru, Lima, viii.1914 (Parish), gent CG 5075 (BMNH).

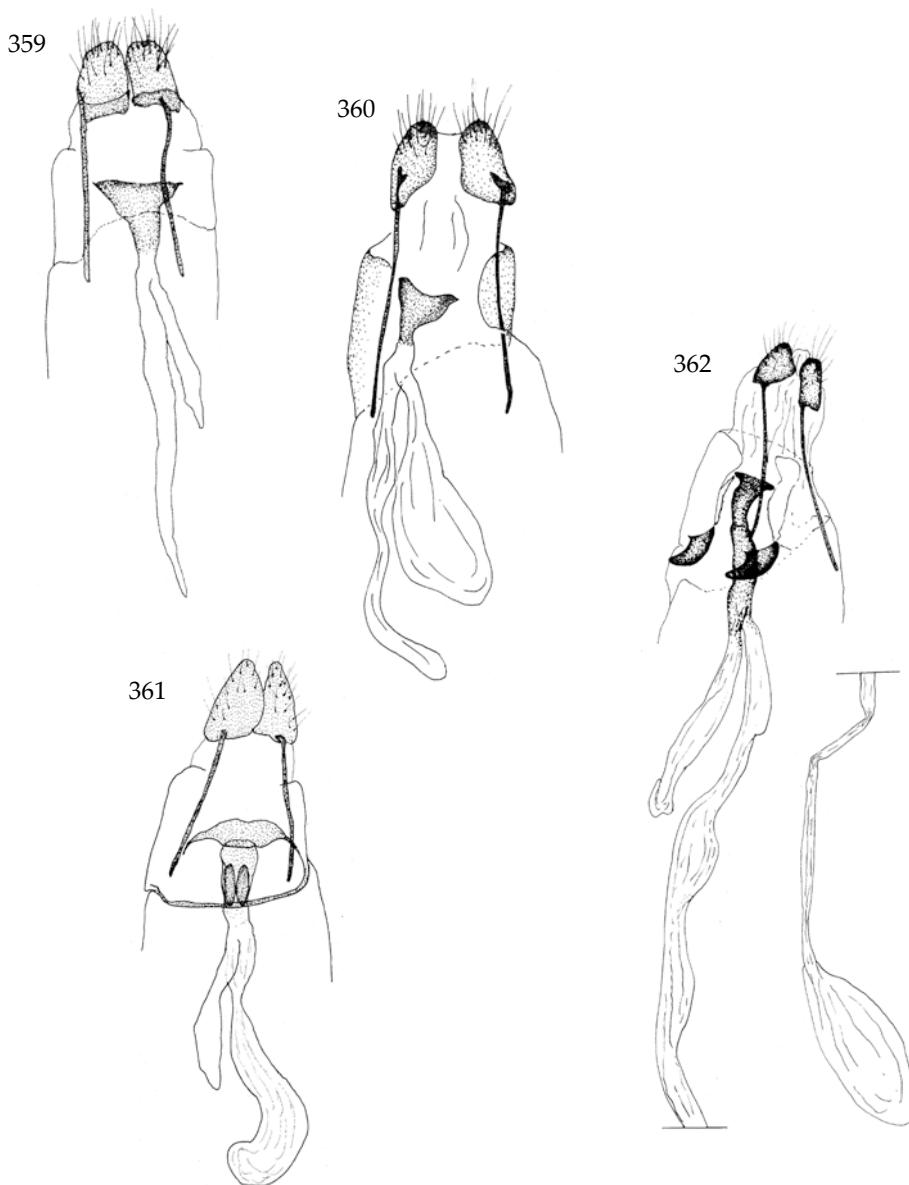


Fig. 359. *H. aguilerae* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 33, 2650 m, 20.xii.1984 (N. Venedictoff), gent CG 5920 (AME/MGCL).

Fig. 360. *H. alfaroi* spec. nov. Holotype. Ecuador, Morona-Santiago Prov, Macas, Gral. Proaño, Rio Juruimbaino, 1100 m, 14-15.iv.1998 (V. Pelz), gent CG 4513 (CG).

Fig. 361. *H. angela* spec. nov. Holotype. Ecuador, Carchi, El Angel +12,5 km, 3500 m, 12.i.1985 (N. Venedictoff), gent CG 5937 (AME/MGCL).

Fig. 362. *H. coquimboicus* (Gielis, 1991). Holotype. Chile, Coquimbo, Nague, 11 km N Las Vilos, 20 m, 4-5.xi.1981 (D. & M. Davis), gent CG 6065 (USNM).

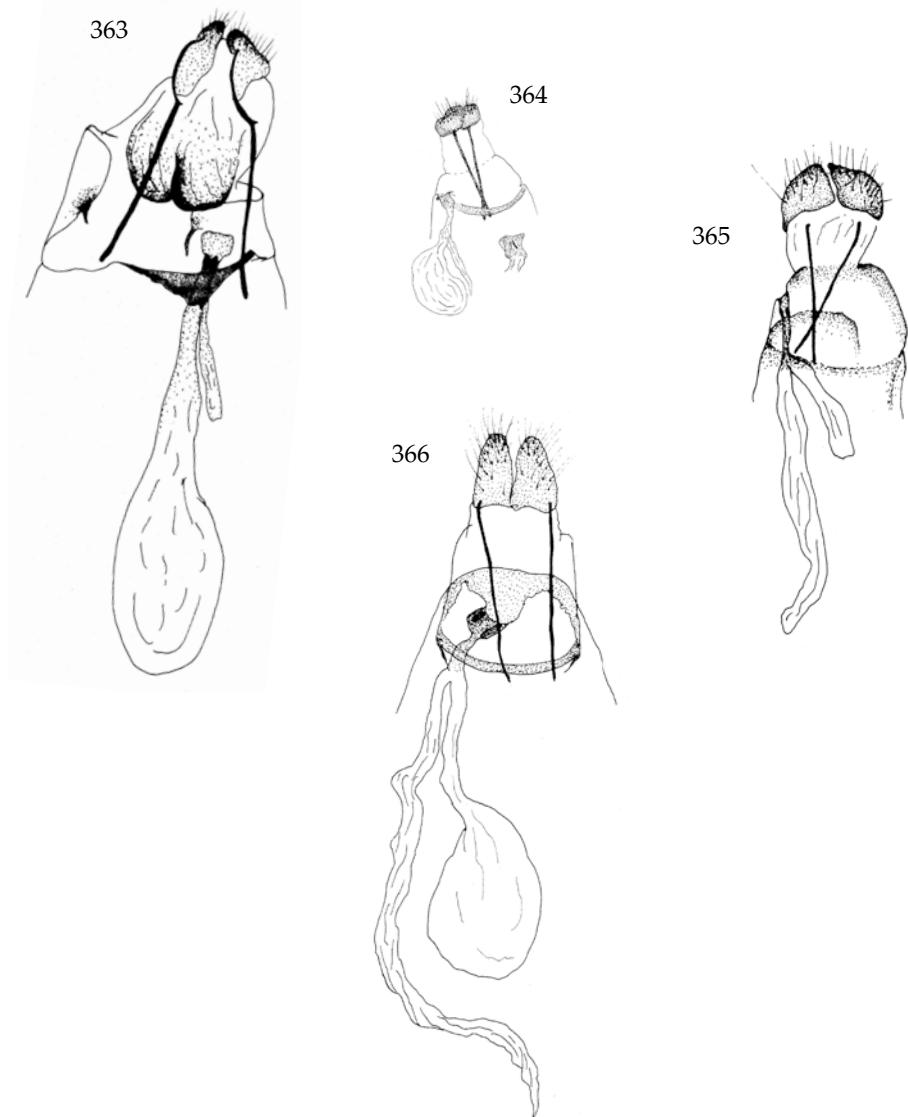


Fig. 363. *H. fuscotransversa* Gielis, 1996. Holotype. Peru, Carabaya, Oconeque, 2135 m, dry season, vii. (19)04 (G. Ockenden), gent CG 5042 (BMNH).

Fig. 364. *H. hebrus* (Meyrick, 1932). Holotype. Costa Rica, Orosi, 1525 m, no date, gent CG 6323 (NMW).

Fig. 365. *H. investis* Gielis, 1999. Holotype. Costa Rica, Cartago, Ref Nac Fauna Silv Tapanti, 1150 m, iv.1992 (G. Mora), gent CG 3893 (Inbio).

Fig. 366. *H. lumbaquia* spec. nov. Holotype, Ecuador, Napo, Lumbaqui - Texaco, 850 m, 8.iii.1975 (N. Venedictoff), gent CG 4367 (AME/MGCL).

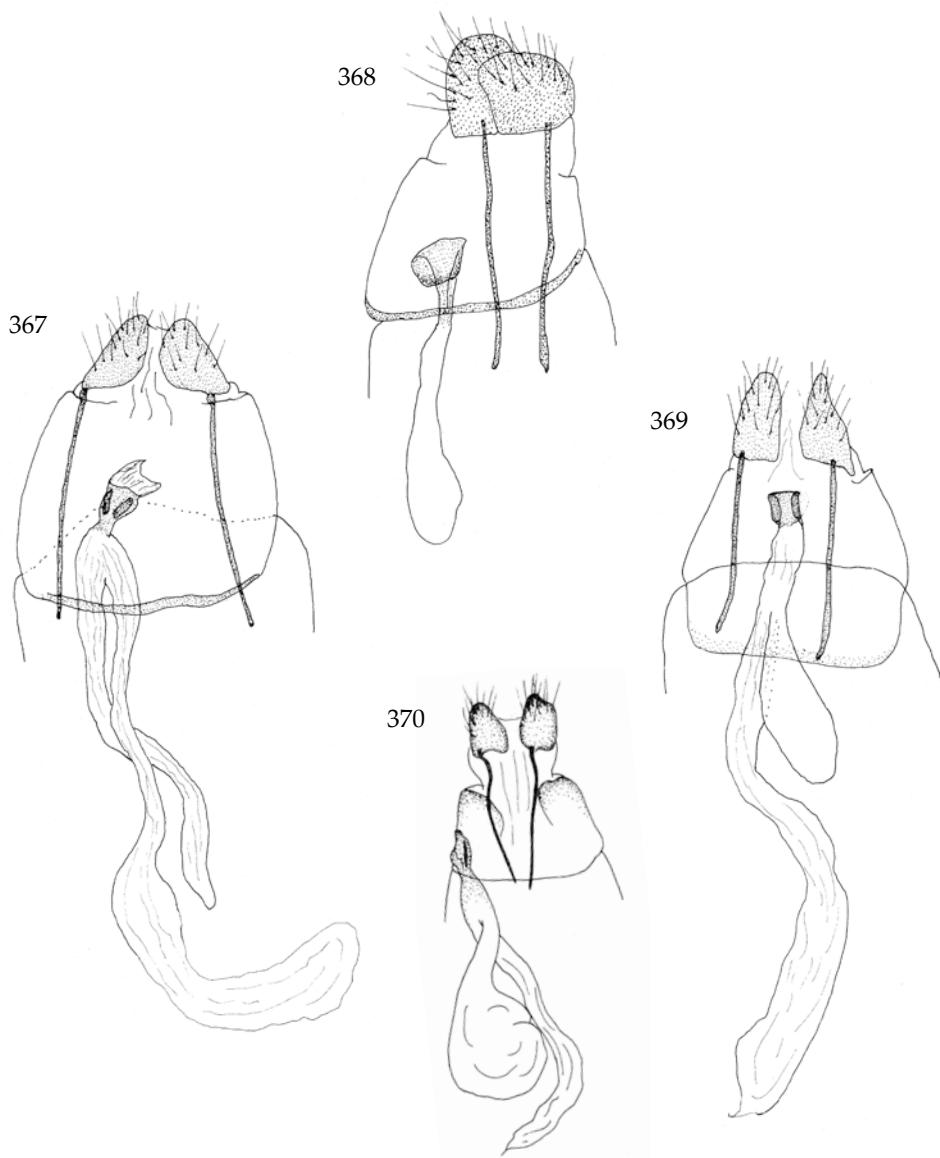


Fig. 367. *H. maldonadoica* spec. nov. Holotype. Ecuador, Carchi, Rd Maldonado -63,5 Km, 2850 m, 16.i.1985 (N. Venedictoff), gent CG 5941 (AME/MGCL).

Fig. 368. *H. milleri* spec. nov. Holotype. Ecuador, Pichincha, Rd. Quito - Chiriboga km 27, 3180 m, 20. iii.19982 (N. Venedictoff), gent CG 5953 (AME/MGCL).

Fig. 369. *H. montufari* spec. nov. Holotype. Ecuador, Carchi, des. El Carmelo km 15, 3250 m, 7.i.1983 (N. Venedictoff), gent CG 5947 (AME/MGCL).

Fig. 370. *H. morenoi* spec. nov. Holotype. Ecuador, Morona-Santiago, Macas, 1000 m, 11-23.xii.1997 (V. Pelz), gent CG 4515 (CG).

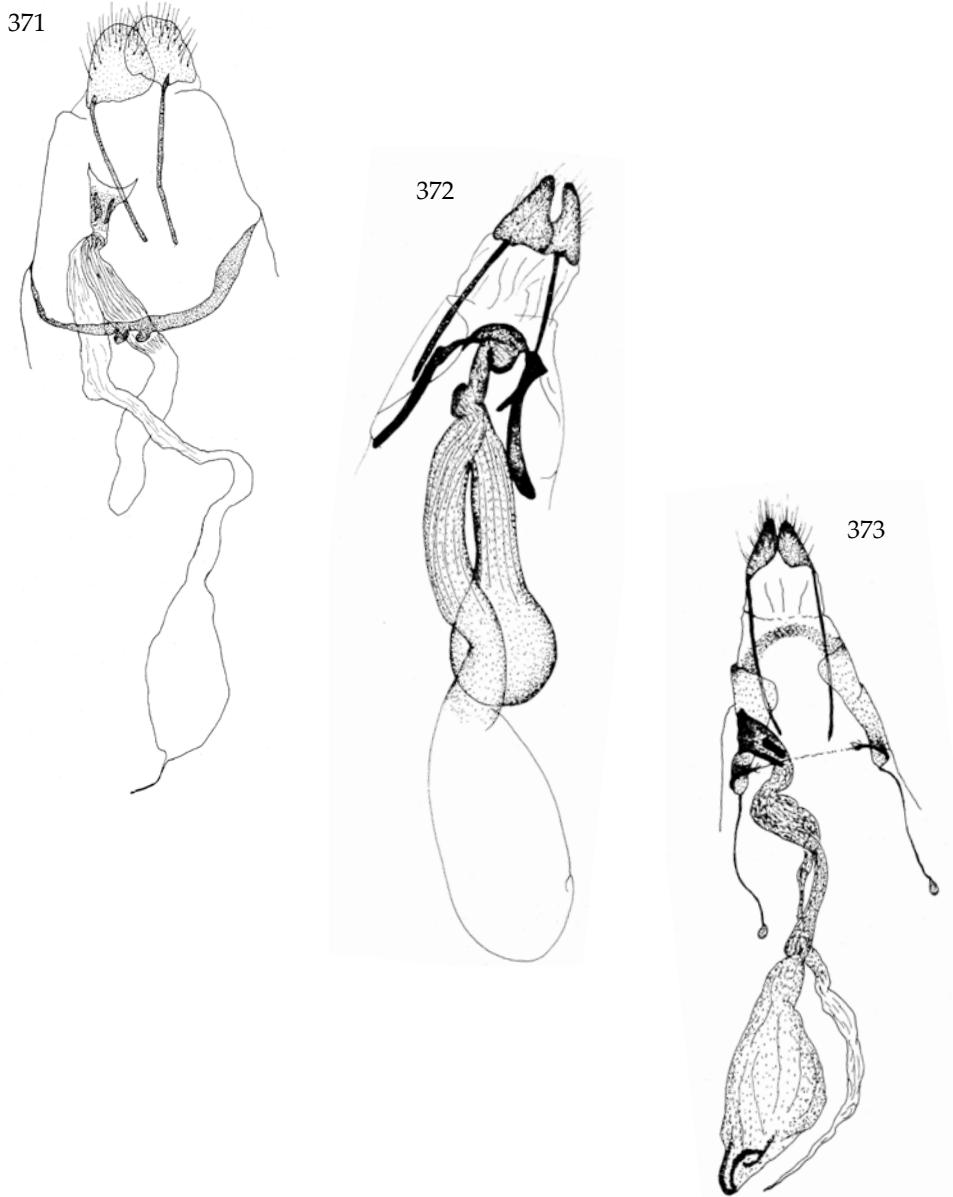


Fig. 371. *H. pichincha* spec. nov. Holotype. Ecuador, Pichincha, Quito - Chiriboga km 33, 2650 m, 20. xi.1985 (N. Venedictoff), gent CG 5933 (AME/MGCL).

Fig. 372. *H. socorroica* (Gielis, 1991). Holotype. Mexico, Socorro Is., Revillagigedo Arch., 405 m, 6.vi.1977 (Hogue & Evans, sta. 2), gent CG 6104 (LACM).

Fig. 373. *H. urbanus* (Walsingham, 1915). Holotype. Guatemala, Baja Vera Paz, San Gerónimo, 900 m, 1880 (G.C. Champion), gent BM 18150 (BMNH).

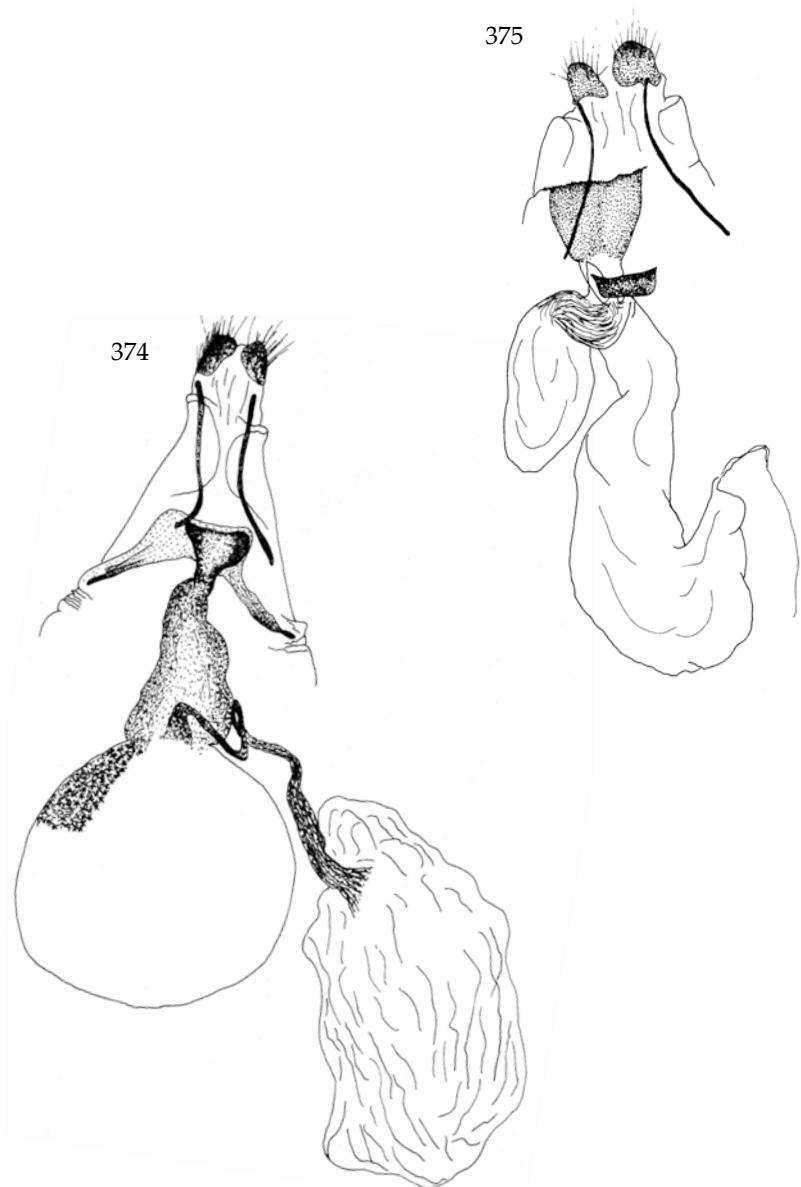


Fig. 374. *H. zetes* (Meyrick, 1930). Holotype. Brazil, Bahia, Cachinbo, 1890, gent BM 18695 (BMNH).

Fig. 375. *Oidaematophorus eupatorii* (Fernald, 1891). Canada, Quebec, Clement, 9.vii.1939 (Urquhart), gent CG 4806 (CG).



Fig. 376. *O. grisescens* (Walsingham, 1880). Canada, British Columbia, Lillooet, Seton Lake, 24.vi.1926 (J. McDunnough), gent CG 6421 (CG).

Fig. 377. *O. phaceliae* McDunnough, 1938. Paratype. Canada, Alberta, Waterton Lake, 20.vii.1923 (J. McDunnough), gent CNC MIC 651 (CNC).

Fig. 378. *O. pseudotrachyphloeus* spec. nov. Paratype. Ecuador, Gauchayacu, ix-x.1926 (Vorbeck), gent CG 4291 (ZMUC).

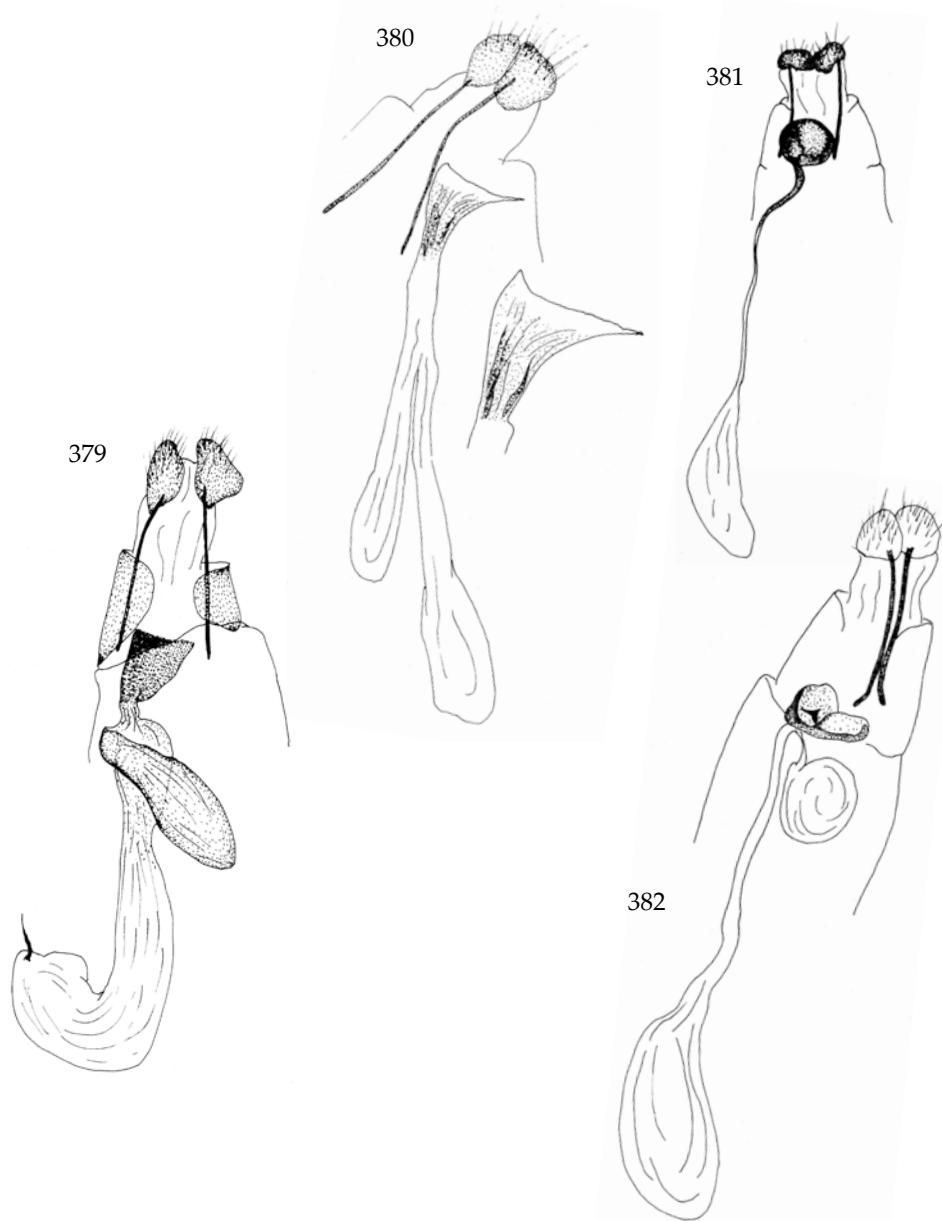


Fig. 379. *O. trachyphloeus* (Meyrick, 1926). Costa Rica, S Jose, Est Zurqui, 500 m before tunnel, 1600 m, x.1990 (L. Corrales), gent CG 3875 (Inbio).

Fig. 380. *Emmelina aethes* (Walsingham, 1915). Paratype. Mexico, Guerrero, Amula, 185 m, ix (H.H. Smith), gent CG 5079 (BMNH).

Fig. 381. *E. buscki* (Barnes & Lindsey, 1921). Jamaica, Runaway Bay, 16.ii.1905, gent CG 3404 (BMNH).

Fig. 382. *E. monodactyla* (Linnaeus, 1758). Holotype of *Pterophorus impersonalis* Walker, 1864. Venezuela, ix.1847, gent BM 18460 (BMNH).

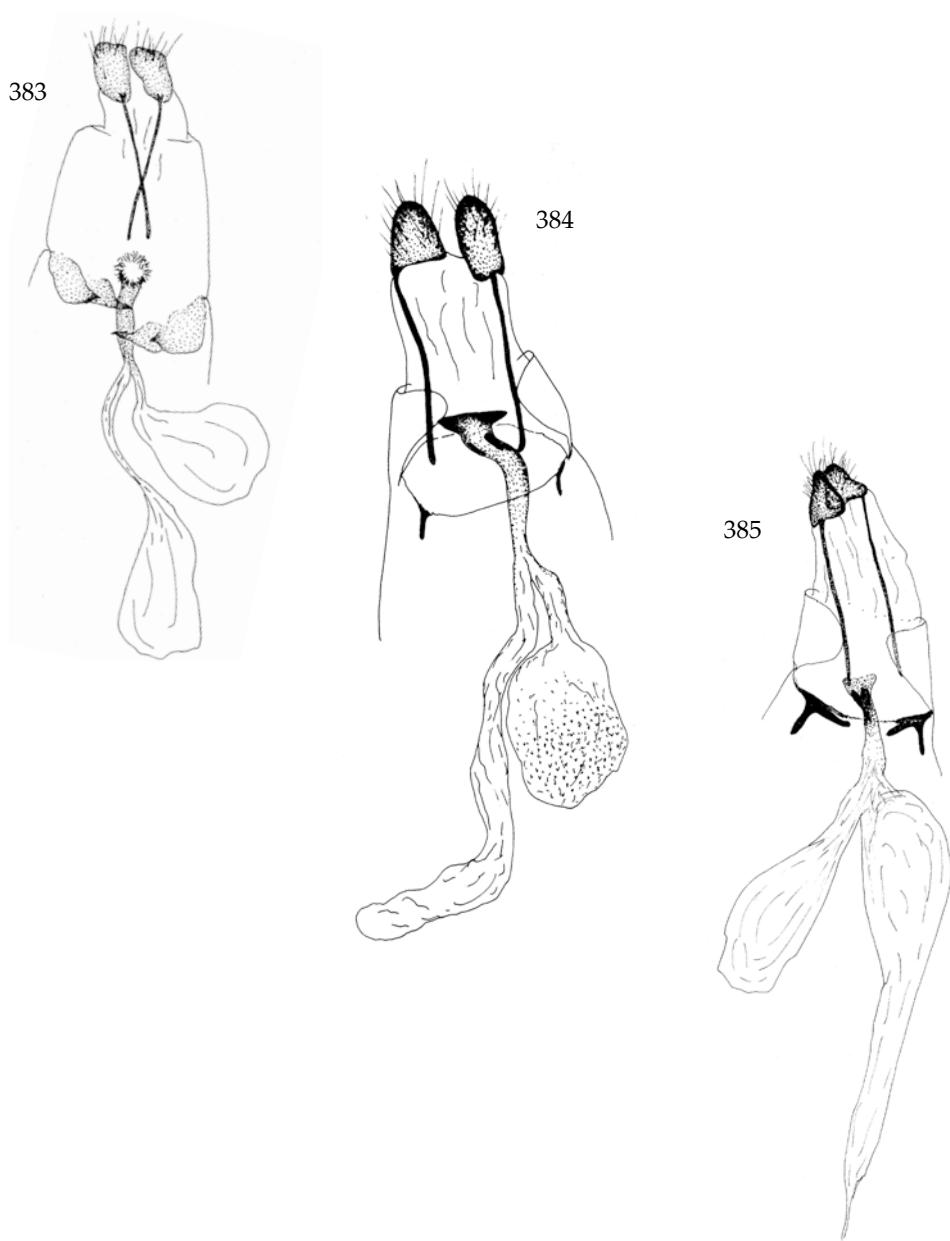


Fig. 383. *E. suspiciosus* (Meyrick, 1921). Ecuador, Azuay, Cuenca, 2500 m, 23-28.i.1996 (V. Pelz), gent CG 3851 (CG).

Fig. 384. *Adaina costarica* Gielis, 1992. Paratype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker, gent CG 6159 (Becker)).

Fig. 385. *A. simplicius* (Grossbeck, 1917). Paralectotype of *A. naiadopa* Meyrick. Paraguay, Makthlawaiga, v.1927 (C. S. C.), gent BM 18434 (BMNH).

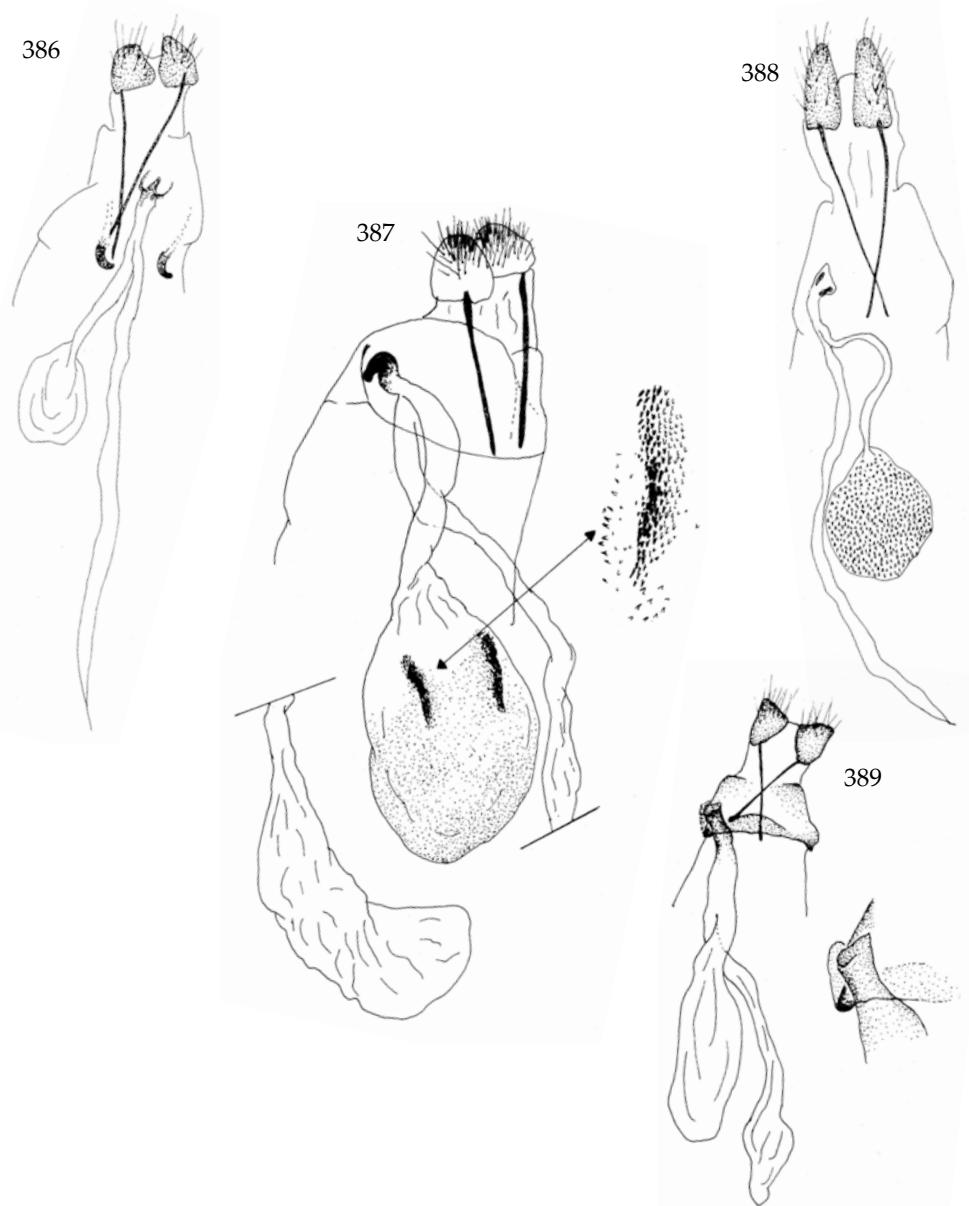


Fig. 386. *A. excreta* Meyrick, 1930. Ecuador, Azuay, PN Cajas, Laguna Llaviuco, 3225 m, 5.x.2002 (CG), gent 5257 (CG).

Fig. 387. *A. parainvida* Gielis, 1992. Paratype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6164 (Becker nr 45995).

Fig. 388. *A. atahualpa* spec. nov. Paratype. Ecuador, Napo, 15 km SE Cosanga, Cocodrilo, 0°38'56"S 77°47'34"W, 1850 m, 1.x.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5258 (CG).

Fig. 389. *A. beckeri* Gielis, 1992. Belize, Cayo, Mountain Pine Ridge, Hidden Valley, 15.i.1999 (H. Hendriksen), gent CG 4654 (CG).

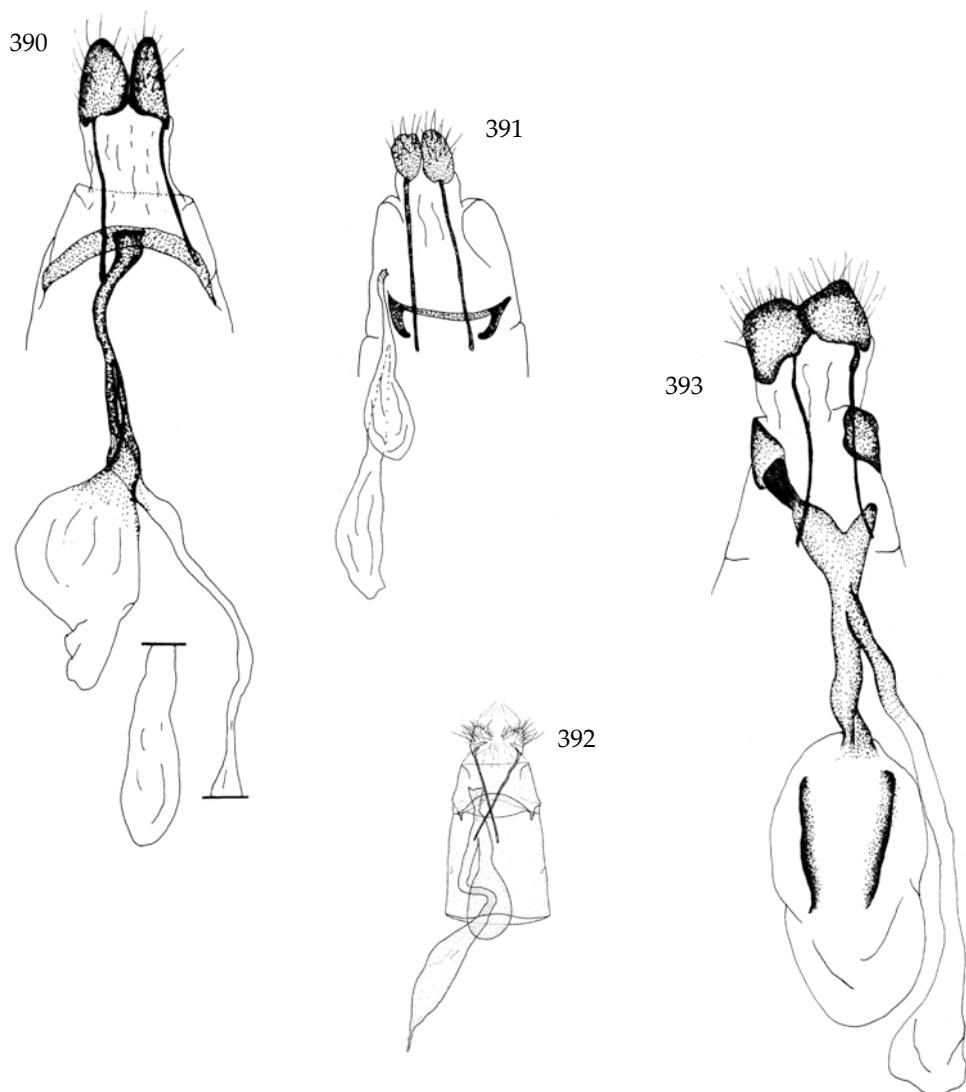


Fig. 390. *A. bernardi* Gielis, 1992. Paratype. Costa Rica, Turrialba, 600 m, vii.1981 (V.O. Becker), gent CG 6312 (Becker nr 43995).

Fig. 391. *A. invida* (Meyrick, 1908). Paraguay, Paraguani, Sapucay, 8.iii.1997 (U. Drechsel), gent CG 6424 (CG).

Fig. 392. *A. primulacea* Meyrick, 1929. After Matthews & Maharjh, 2009.

Fig. 393. *A. perplexus* (Grossbeck, 1917). Cuba occ., Matanzas, Veradero, 17.i.1983 (V. Felix), gent CG 3592 (V. Felix).

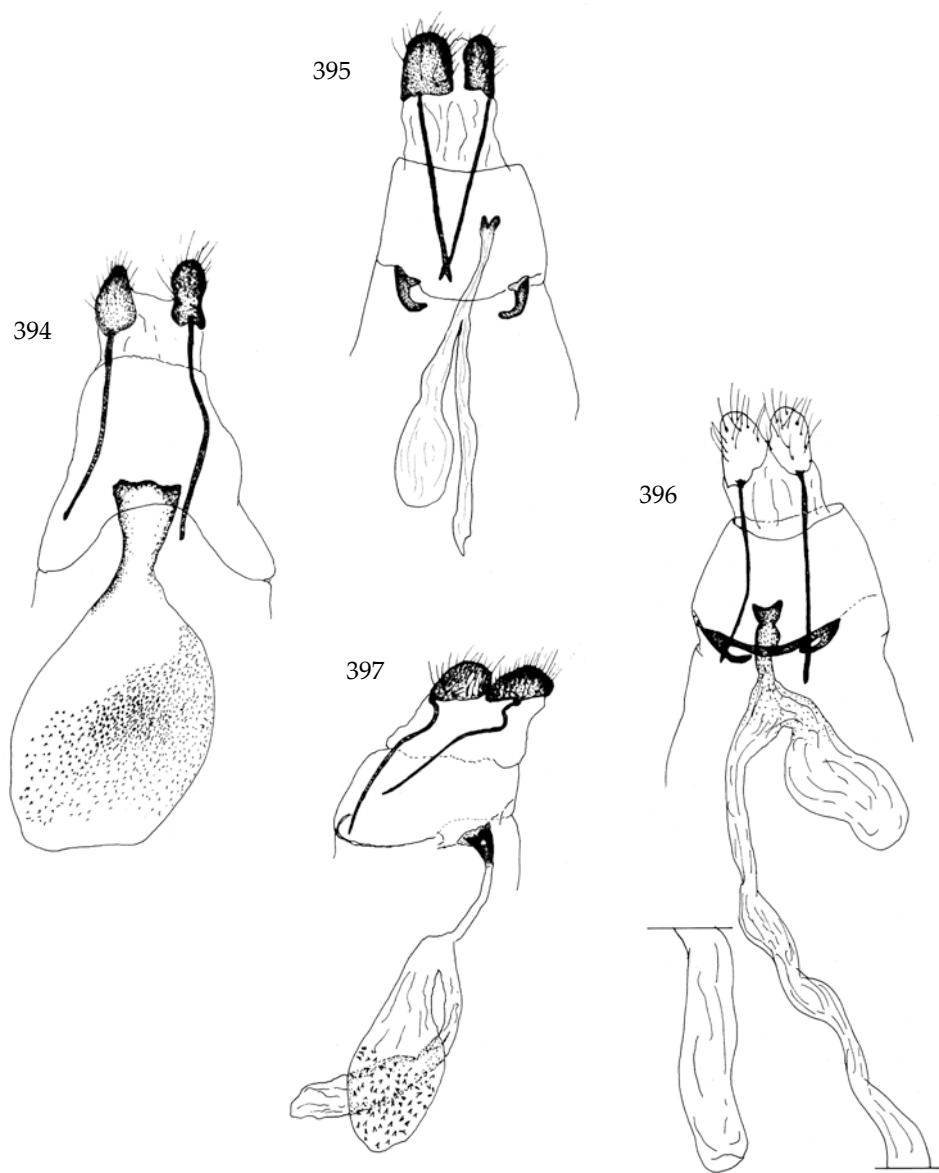


Fig. 394. *A. thomae* (Zeller, 1877). Virgin Islands, St Thomas, no date (V. Nolcken), gent CG 3130 (RMNH).
 Fig. 395. *A. zephyria* Barnes & Lindsey, 1921. Mexico, Oaxaca, 1.x.1923 (Osborn), gent CG 6137 (Bishop Mus).

Fig. 396. *A. bipunctatus* (Möschler, 1890). USA, Florida, Oneco, 28.v.1953 (P. Dilman), gent CG 2451 (CG).
 Fig. 397. *A. hodias* (Meyrick, 1908). Costa Rica, Sta Cruz, Turrialba, 1500 m, viii.1981 (V.O. Becker), gent CG 6158 (Becker nr 45328).

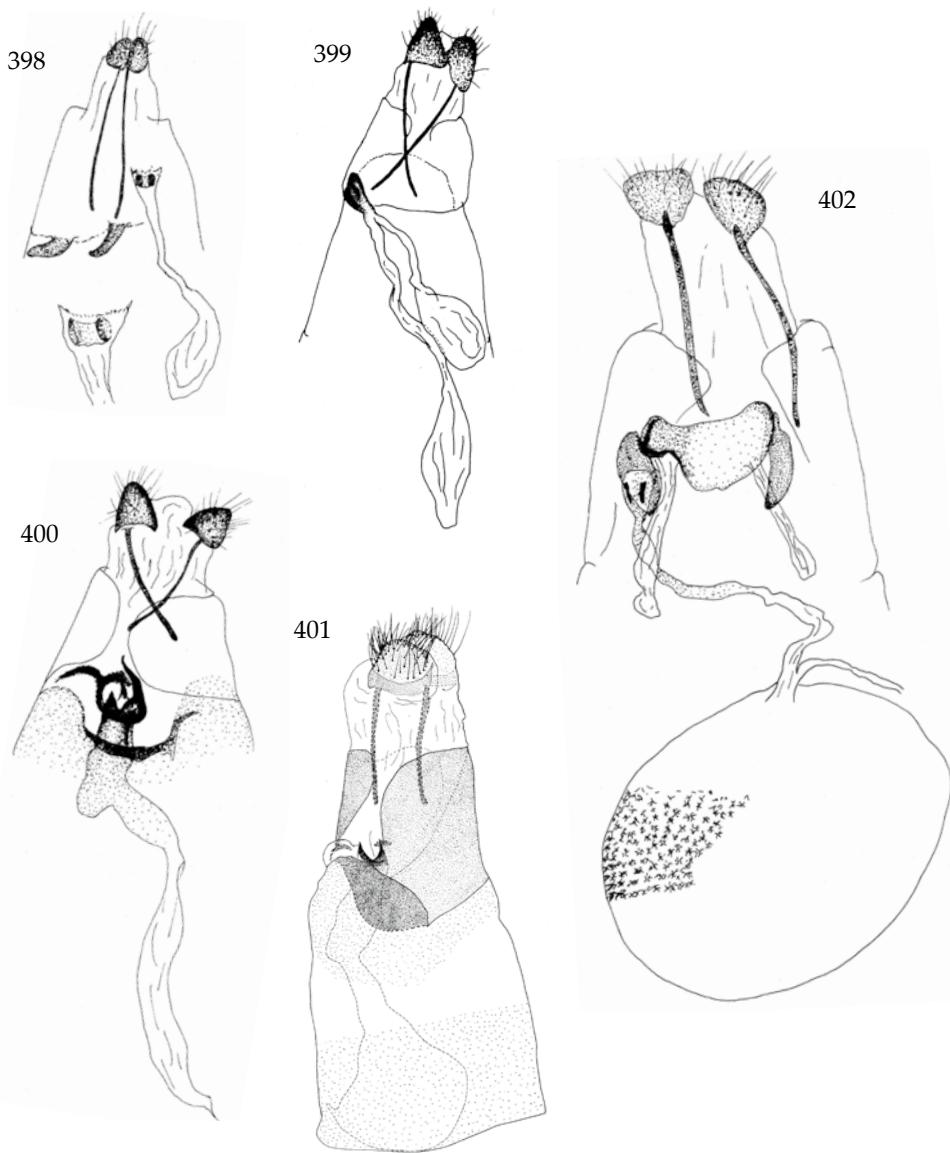


Fig. 398. *A. bolivari* Cápuse, 1987. Ecuador, Tungurahue, 20 km E Baños, San Francisco, 1°24'39"S 78°14'23"W, 1290 m, 26.ix.2002 (C. & F.K. Gielis & V. Pelz), gent CG 5256 (CG).

Fig. 399. *A. fuscahodias* Gielis, 1992. Paratype. Mexico, Vera Cruz, Huatasco, 1300 m, 19-23.viii.1981 (V.O. Becker), gent CG 6146 (Becker nr 44043).

Fig. 400. *A. ambrosiae* (Murtfeldt, 1880). British Virgin Islands, Guana Island, 0-80 m, 9-23.vii.1987 (S.E. Miller & V.O. Becker), gent CG 6132 (BPBM).

Fig. 401. *A. scalesiae* B. Landry, Roque & Matthews, 2004. After B. Landry & Gielis (1992), misidentified as *A. ambrosiae*.

Fig. 402. *A. ipomoeae* Bigot & Etienne, 2009. Cuba, Pinar Rio, Sierra Rosario, 400 m, 4-6.x.1989 (V.O. Becker), gent CG 3665 (Becker nr 70602).

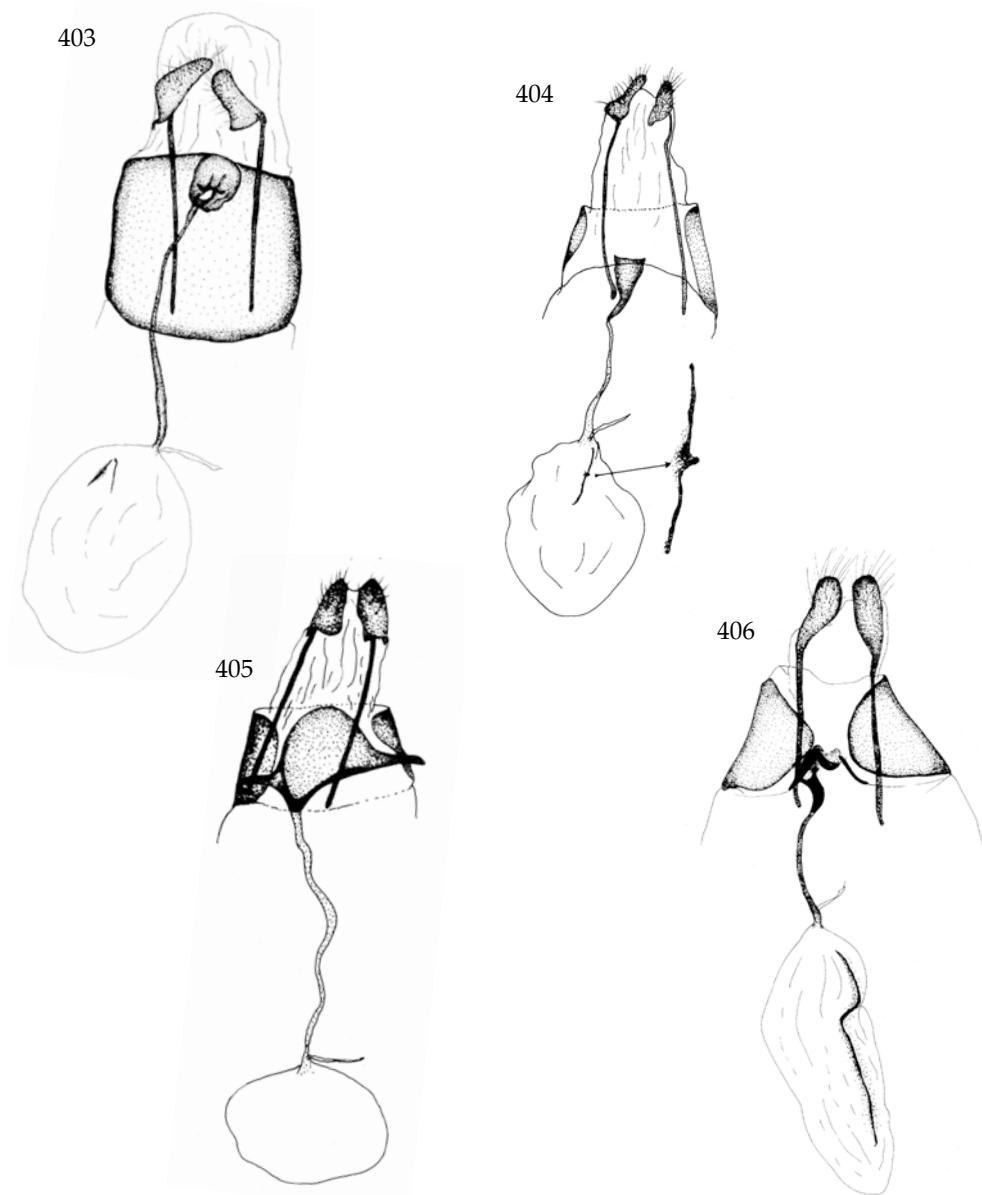


Fig. 403. *Patagonophorus murinus* Gielis, 1991. Paratype. Argentina, Neuquén, San Martín de los Andes, Quilquihue, 750 m, 15-26.xi.1981 (Gentili), gent CG 4117 (ZMUC).

Fig. 404. *Chocophorus alternaria* (Zeller, 1874). Argentina, Buenos Aires, Ramos Mejía, 5.xii.1961 (Topál), gent CG 4085 (ZMUC).

Fig. 405. *C. carabayus* (Arenberger, 1990). Ecuador, Pichincha, Road Quito - La Palma km 79, 1650 m, 25.iii.1982 (N. Venedictoff), gent CG 3357 (AME/MGCL).

Fig. 406. *C. leptochorda* (Meyrick, 1913). Holotype of *Alucita trichogramma* Meyrick. Costa Rica, Juan Viñas, 760-1060 m, v.1906 (Schaus), gent BM 17989 (BMNH).

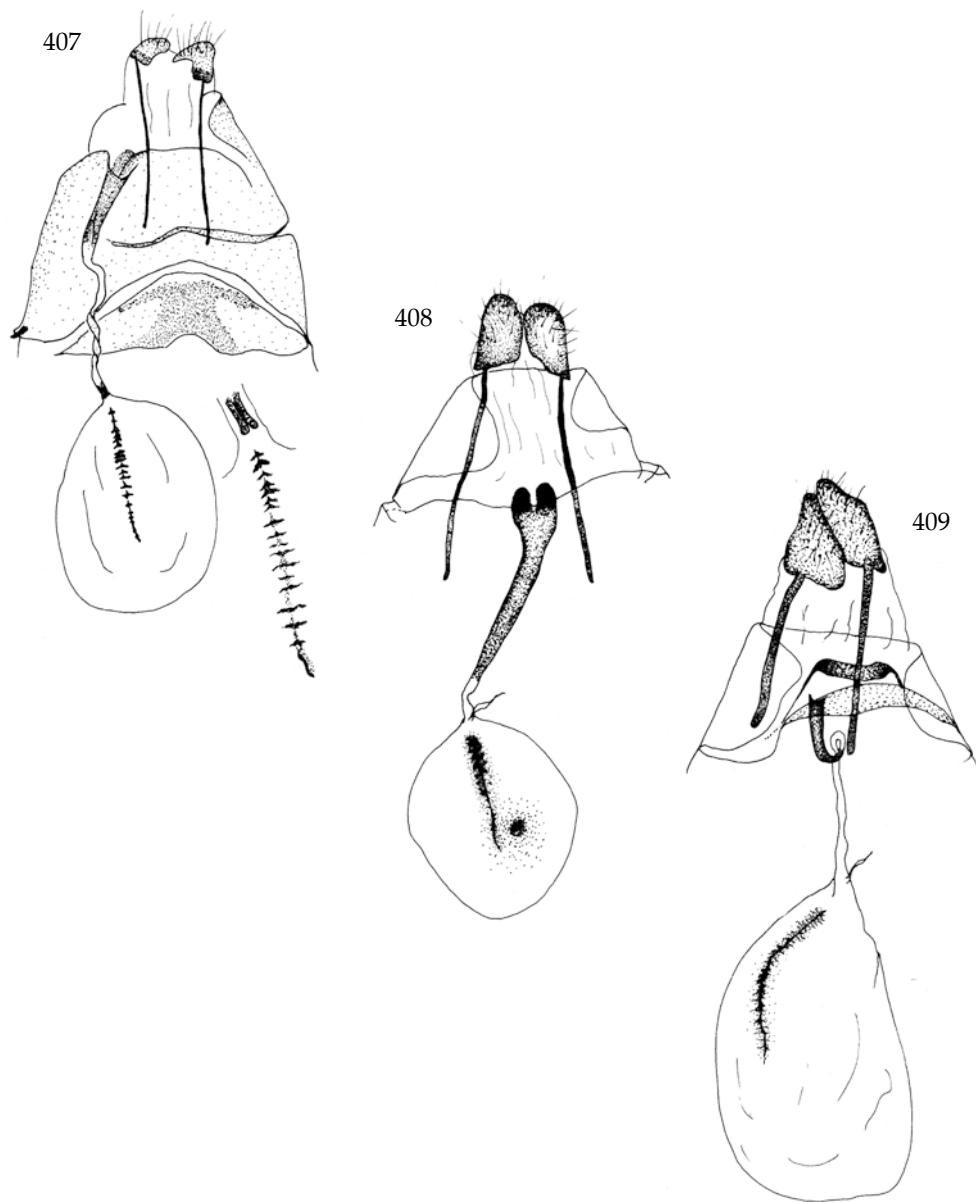


Fig. 407. *C. mayensis* spec. nov. Paratype. Costa Rica, Cartago, Tapanti, 1500 m, 30-31.viii.2000 (V.O. Becker), gent CG 4837 (Becker nr 6790).

Fig. 408. *C. solisi* Gielis & Matthews, 1994. Holotype. El Salvador, Cerro Verde, 6.viii.1967 (O.S. Flint Jr.), gent CG 3356 (USNM).

Fig. 409. *C. venedictoffi* Gielis & Matthews, 1994. Paratype. Ecuador, Pichincha, Rd Quito - La Palma km 79, 1650 m, 25.iii.1982 (N. Venedictoff), gent CG 3360 (AME/MGCL).