

# A review of the New World *Atteva* Walker moths (Yponomeutidae, Attevininae)

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**ABSTRACT.** A review of the New World *Atteva* Walker moths (Yponomeutidae, Attevininae). The New World species of *Atteva* Walker are reviewed and illustrated in colour. One name: *A. pustulella* (Fabricius), **nom. rev.** and three species: *A. aurea* (Fitch), **sp. rev.**, *A. floridana* (Neumoegen), **sp. rev.** and *A. gemmata* (Grote), **sp. rev.** are reinstated; five names are synonymised under *A. aurea*: *Poeciloptera compta* Clemens, **syn. n.**, *A. edithella* Busck, **syn. n.**, *A. exquisita* Busck, **syn. n.**, *A. ergatica* Walsingham, **syn. n.** and *A. microsticta* Walsingham, **syn. n.**; four new species are described: *A. rawlinsi* **sp. n.**, from the Dominican Republic, *A. sidereoides* **sp. n.**, from Jamaica, *A. entermedia* **sp. n.**, from Antigua, and *A. zebrina* **sp. n.**, from Brazil; lectotypes for *A. floridana* and *A. glaucopidella* (Guenée) (= *fulviguttata*) are also designated.

**KEYWORDS.** Microlepidoptera; New World; nomenclature; taxonomy.

**RESUMO.** Resenha das mariposas do gênero *Atteva* Walker do Novo Mundo (Yponomeutidae, Attevininae). As espécies de *Atteva* Walker são revistas e ilustradas em cores. Um nome: *A. pustulella* (Fabricius), **nom. rev.** e três espécies: *A. aurea* (Fitch), **sp. rev.**, *A. floridana* (Neumoegen), **sp. rev.** and *A. gemmata* (Grote), **sp. rev.** são restabelecidos; cinco nomes são considerados sinônimos recentes de *A. aurea*: *Poeciloptera compta* Clemens, **syn. n.**, *A. edithella* Busck, **syn. n.**, *A. exquisita* Busck, **syn. n.**, *A. ergatica* Walsingham, **syn. n.** e *A. microsticta* Walsingham, **syn. n.**; quatro espécies novas são descritas: *A. rawlinsi* **sp. n.**, da República Dominicana, *A. sidereoides* **sp. n.**, da Jamaica, *A. entermedia* **sp. n.**, de Antigua, e *A. zebrina* **sp. n.**, do Brasil; são designados lectótipos para *A. floridana* e *A. glaucopidella* (Guenée) (= *fulviguttata*).

**PALAVRAS-CHAVE.** Microlepidoptera; nomenclatura; Novo Mundo; taxonomia.

The pantropical genus *Atteva* Walker, 1854 comprises over 50 species of mostly brightly-coloured, medium-sized moths (Dugdale *et al.* 1999: 122) some of which are common. A total of 15 species are present in the New World, including the four new ones described here.

The New World members of the genus have never been reviewed and most of them never illustrated. The few which were are in scattered and mostly old literature not easily available. An illustrated treatment is presented here to allow identification of the species occurring in the New World.

Nearly 3,000 specimens, including type-material, deposited in the National Museum of Natural History in Washington (USNM), the Carnegie Museum in Pittsburgh (CMNH), the Natural History Museum in London (BMNH), and in the author's collection in Camacan, Bahia, Brazil (VOB), were examined. Other type material studied here is deposited in the following institutions: Naturhistorisches Museum in Vienna (NM), the Museum für Naturkunde der Humboldt-Universität in Berlin (MNHU) and the Academy of Natural Sciences in Philadelphia (ANS). More than 90% of the specimens examined belong to the widespread *pustulella-aurea* complex. Abbreviations for States of Brazil, México and the United States follow Hepner (1984: xvii-xviii).

The combination of colour pattern with geographical distribution enables easy recognition of the species, whereas characters of the genitalia are very similar throughout the genus

so are unreliable for determination. For this reasons illustrations of the latter are omitted.

## *Atteva* Walker

*Atteva* Walker, 1854: 526. Type species: *Atteva niveigutta* Walker, 1854: 526, by monotypy.

*Poeciloptera* Clemens, 1861: 546. Type species: *Poeciloptera compta* Clemens, 1854: 527, by monotypy. A junior homonym of *Poeciloptera* Loew, 1846 [Diptera]. Synonymized by Berg (1880: 99).

*Amblothridia* Wallengren, 1861: 385. Type species: *Phalaena fabriciella* Swederus, 1787: 277, by subsequent designation by Fletcher, 1929: 11. Synonymized by Moore (1867: 669).

*Corinea* Walker, 1863: 542. Type species: *Corinea niviguttella* Walker, 1863: 542, by subsequent designation by Fletcher, 1929: 11. Synonymized by Moore (1867: 669).

*Oeta* Grote, 1865: 231. Type species: *Poeciloptera compta* Clemens, 1861: 546, by monotypy (of *Poeciloptera* Clemens), an objective replacement name for *Poeciloptera* Clemens. Synonymized by Berg (1880: 99).

*Carthara* Walker, 1866: 1871. Type species: *Carthara flavivitta* Walker, 1866: 1872, by monotypy. A junior homonym of *Carthara* Walker, 1865: 914 [Pyralidae]. Synonymized by Walsingham (1914: 327).

*Synadia* Walker, 1866: 1984. Type species: *Carthara flavivitta* Walker, 1866: 1871, by monotypy (of *Carthara* Walker), an objective replacement name for *Carthara* Walker, 1866. Synonymized by Walsingham (1914: 327).

*Scintilla* Guenée, 1879: 287. Type species: *Tinea pustulella* Fabricius, 1787: 241, by monotypy. A junior homonym of *Scintilla* Deshayes, 1856 [Mollusca]. Synonymized by Berg (1880: 99).

*Syblis* Guenée, 1879: 288. Type species: *Syblis glaucopidella* Guenée, 1879: 289, by monotypy. Synonymized by Berg (1880: 99).

Most of the species belonging to this genus are brightly coloured and easily distinguished by their wing pattern. Their gregarious larvae feed on several plants belonging to the Araliaceae, Fabaceae, Lauraceae and Simaroubaceae (Dugdale *et al.* 1999: 122), however, in the New World, all known host plant records are members of the two latter families.

The type species, *A. niveigutta* [= *fabriciella* Swederus, 1787] is an Indo-Australian species. Therefore, if the New World species prove not to be congeneric with the species of that region, the name *Oeta* Grote is the oldest, valid and available name to incorporate them.

***Atteva pustulella* (Fabricius) nom. rev.**

(Fig. 1)

*Phalaena Tinea punctella* Stoll, 1781: 164. Type(s), Surinam [No further data], not examined [lost?]. A junior homonym of *Phalaena punctella* Linnaeus, 1761.

*Tinea pastulella* Fabricius, 1787: 241. [A printing error of *pustulella*, ["pustula" = blister] see next]. Objective replacement name for *Phalaena Tinea punctella* Stoll, 1781.

*Tinea pustulella* Fabricius, 1794: 292. Correction of *T. pastulella* Fabricius, 1787.

*Lithosia pustulata* Fabricius, 1798: 462.

*Crameria subtilis* Hübner, 1822: 168. Objective replacement name for *Phalaena Tinea punctella* Stoll, 1781.

This species ranges from Uruguay and Argentina northwards to Costa Rica where it meets *aurea*. It is also present in the Antilles. There are several specimens from Dominica, Jamaica, Haiti and Martinique in the USNM. This species has the black outlining the markings more developed than other species, the orange areas reduced, with the antemedial and medial orange fasciae each divided into two large blotches.

The larvae have been reared by the author and by D. Janzen (pers. comm.) on the leaves of "azeituno", *Simarouba amara* (Simaroubaceae) in Costa Rica. The same host is recorded by Sefer (1963: 10–12) [as "marupá", the Amazonian popular name]. *Ailanthus altissima* is recorded by Berg (1880: 101), Biezanko *et al.* (1957: 18), Biezanko (1961: 7), Ruffinelli (1967: 22) and Hayward (1969: 72). *Laurus nobilis* (Lauraceae) is recorded by Biezanko *et al.* (1957: 18), Biezanko (1961: 7) and by Ruffinelli (1967: 22). Hayward (1969: 72) lists *Phoebe porphyria* (Lauraceae). Köhler, cited by Hayward (1969: 72) listed *Melia azedarach* (Meliaceae) as a food plant in Argentina. However, this might be a misidentification as seedlings of this species and those of *Ailanthus* could be easily confused in the field or either he mixed up the local popular names of the two: "paraíso" and "árbol del cielo", respectively. The same information was repeated by Biezanko *et al.* (1957: 18), Biezanko (1961: 7), Ruffinelli (1967: 22) and by Hayward (1969: 72), presumably from the same source.

Surprisingly the name *punctella*, recognized as a junior homonym not long after its description (Fabricius, 1787: 241; Hübner, 1822: 168) and recognized as such by Walsingham (1914: 330), has been remained in use until now in several

major works (Heppner & Duckworth 1983: 26; Heppner, 1984: 56; Covell 1984: 431; Dugdale *et al.* 1999: 123).

***Atteva aurea* (Fitch) sp. rev.**

(Figs. 2–5)

*Deiopeia aurea* Fitch, 1856: 486. Type(s), USA: Georgia, Savannah (Dickson) [not traced].

*Poeciloptera compta* Clemens, 1861: 527. Types(s) [USA]: Texas (Capt. Pope) ["From the Smithsonian Institution"] [not traced]. **Syn. n. rev.**

*Oeta aurera* Stretch, 1873: 240. Misspelling.

*Atteva edithella* Busck, 1908: 85. Holotype ♀, USA: Texas, Maverick Co. (USNM) [examined]. **Syn. n.**

*Atteva exquisita* Busck, 1912: 86. Holotype ♂, Mexico: Coa, Mobano, viii (Müller) (USNM) [examined]. **Syn. n.**

*Atteva ergatica* Walsingham, 1914: 328. Holotype ♀, Belize: Rio Sarstoon (Blancaneaux) (BMNH) [examined]. **Syn. n.**

*Atteva microsticta* Walsingham, 1914: 330. Holotype ♀, Mexico: Pue, Tehuacan, iii.1907 (Müller) (USNM) [examined]. **Syn. n.**

This species, popularly known as the 'ailanthus webworm moth' in the United States and Canada, is a highly variable species, which explains why it has been described several times. It is very similar to *pustulella* and for a long time the two have been considered to represent a single species. Their genitalia, included those of all other forms listed above as synonyms, show no difference and no other character, including host-plant and habitat, provides clear evidence to separate the two. The decision to consider the population ranging from Costa Rica south to Uruguay and Argentina as one species –*pustulella*– and the other, ranging from Northern Costa Rica northwards, along the Gulf of México and Eastern United States, into Canada, including a series of specimens from Jamaica in the USNM, –*aurea*– as distinct, is based on the results of DNA ("bar-coding"), information provided by D. Janzen (pers. com.). This information was extracted from material belonging to both forms reared by him, side-by-side, on *S. amara*, in Guanacaste, Costa Rica and from North American specimens. Therefore, distribution is the only safe indication to identify them. Fortunately, the populations of both forms found together in northern Costa Rica, are distinct, making it possible to segregate both, based on the phenotypes. As illustrated in Holland (1903: pl. 48, fig. 36), and Covell (1984: pl. 61, fig. 13), its forewings bear the orange more extended and the marks more reduced than in *pustulella*. The form *microsticta* (Fig. 2), described from Puebla, México represented by a long series collected by the author in Zapotitlán, a semi-desert area, also in Puebla State, is more similar to *pustulella*, with yellow areas divided into multiple dots, as indicated by its name. It is synonymized because specimens with a pattern between this and typical *aurea* (Fig. 3) can be found among material collected in other parts of México. Form *exquisita* (Fig. 4), described from the semi arid region of northern México, ranges northwest into Southern California and south into Baja California (Powell *et al.* 1973). This is a paler form, with the blotches on antemedial and medial areas divided vertically into two single areas, however the pattern is also variable as shown by the illustrations given by the above-mentioned

authors who studied its biology in detail. In the USNM there is a long series from the Big Bend National Park and three specimens from Galeana, Nuevo León, Mexico which include this form, as well as specimens looking like typical *aurea*. *A. edithella* (Fig. 5) is no more than another form, similar to *exquisita*, but paler, with the markings on fore wings even more reduced, as shown in Fig. 9 in the above work.

The presence of *aurea* in the eastern United States and Canada and its association with *Ailanthus altissima* (Mill.) (Simaroubaceae) is an interesting subject to be investigated. This plant is an ornamental introduced from Asia and now considered one of the most serious weeds in the United States. It was first planted near the University of Pennsylvania, Philadelphia, in 1784 (*W. Thomas*, pers. comm.) and from there it spread over the entire country. Once it reached southern Texas, where presumably *aurea* was already present, the moth started to move north. By 1856 it had reached Georgia, as indicated by the material described by Fitch (1856: 486). Riley (1869: 151) found it common in Missouri, feeding on ailanthus. These records indicate that this showy and common moth was absent in the region before the introduction of ailanthus, and the approximately 70-year gap between the introduction of the host, to the first record of the moth by Fitch, is the time it took the plant to move south and the moth to move north.

Apart from the hosp-plant records mentioned above, the larvae have been reared on the following Simaroubaceae: *Castela peninsularis*, *C. polyandra* and *C. emory* in the United States (Powell *et al.* 1973: 177), *Simarouba amara* in Costa Rica (Janzen, pers. com.) and *S. glauca* in México (by the present author).

***Atteva floridana* (Neumoegen) sp. rev.**  
(Fig. 6)

*Oeta compta* var. *floridana* Neumoegen, 1891: 123. Lectotype ♀, USA: Florida, Upper Indian River (USNM), here designated [examined].

This species has been wrongly synonymized under *A. gemmata* (Holland 1903: 424, pl. 48, fig. 37; Dyar 1903: 490), then recognized as a valid species (Walsingham 1914: 328; Kimball 1965: 291), and finally synonymized under *punctella* [= *pustulella*] (Heppner & Duckworth 1983: 26; Heppner 1984: 56). It is restricted to southern Florida, including the Keys, (except for one ♀ from Mississippi, St. Louis Bay, Hancock Co., in USNM). It might be an extreme form of *aurea*, showing marks much reduced, with predominance of orange, as also illustrated in Holland (1903: pl. 48, fig. 37 [as *gemmata*], and by Covell (1984: 431, pl. 62, fig. 5) [as *punctella*]. The genitalia are almost identical to those of *aurea* and *pustulella*. However, despite *aurea*, widespread along Eastern North America, and ranges side by side with *floridana* in Southern Florida, no intermediate forms between the two have been found. Dyar (1897: 48), who studied the early stages, also stated that the larvae of *floridana*, found feeding on *Simarouba glauca*, are distinct from those of *aurea*. For these reasons both forms are

retained as distinct, waiting for more detailed studies of their biology. In case it is proved that it is a good species, it might be considered as endangered. *O. floridana* was described from an unspecified number of specimens. Only the female mentioned above was traced in the USNM.

***Atteva gemmata* (Grote) sp. rev.**  
(Fig. 7)

*Oeta gemmata* Grote, 1873: 93. Holotype [?], CUBA. [No further data] (Poey) (ANS) [not traced].

*Oeta fastuosa* Zeller, 1877. Holotype ♀, CUBA. [No further data] (MNHU) [colour image examined]. Synonymized by Walsingham, (1914: 328).

This species, endemic to Cuba, is very similar to the next species (*rawlinsi*) from Hispaniola but half its size. In *gemmata* the dots are reduced in number and connected to each other forming small, vertical, white lines.

Both available names have been wrongly synonymized under *punctella* [= *pustulella*] (Walsingham 1897: 112) and reinstated as a valid species (Meyrick 1914: 21; Walsingham 1914: 328). However, it seems that both works were overlooked by Heppner & Duckworth (1983: 26) and by Heppner (1984: 56) who continued to follow Walsingham's (1897) synonymy.

***Atteva rawlinsi* sp. n.**  
(Fig. 8)

This species, endemic to the Dominican Republic, is similar to the former, but is considerably larger, with the blackish areas occupied by numerous small, white dots, not forming vertical lines. Male genitalia are almost identical to those of the former, but with vesica devoid of cornuti in *gemmata*, whereas in *rawlinsi* the vesica is armed with multiple long, thin, loose cornuti, the longest ones almost half the size of aedeagus.

Etymology: Named in honour of John E. Rawlins, CMNH, who collected the series of specimens studied here.

Material studied. Holotype ♂, DOMINICAN REPUBLIC: Barahona. 9.2 km NW Paraiso, confluence of Rio Nizao/and Rio Coltico. 18-03N, 71-12W, 230 m, 9-10 Aug 1990 (J. Rawlins, S. Thomson/CMNH-383,805) (CMNH). Paratypes: DOMINICAN REPUBLIC: 2 ♂, 3 ♀, [same data as holotype] (CMNH, VOB); 23 ♂, 19 ♀, Azua, east side of crest, Sierra Martin Garcia, 7 km WNW Barrero, 18-21N, 70-58W, 860 m, 25-26 July 1992 (C. Young, R. Davidson, S. Thompson, J. Rawlins), cloud forest adjacent to disturbed forest (CMNH); 1 ♂, Dajabon, 9 km S Loma de Cabrera, 19-21N, 71-37W, 620 m, 12 July 1992 (J. Rawlins, S. Thompson, C. Young, R. Davidson), disturbed pastures in mesic woodland (CMNH); 1 ♀, Elias Pina, north slope Sierra de Neiba, 2 km SW Canada, 7 km WSW Hondo Valle, 18-42N, 71-45W, 980 m, 29 August 1995 (J. Rawlins, G. Onore, R. Davidson), eroded fields on hillside (CMNH); 2 ♀, Elias Pina, Sierra de Neiba, 9.2 km WSW Hondo Valle, 18-41-37N, 71-46-59W, 1874 m, 25 June 2003 (J. Rawlins, C. Young, R. Davidson, C. Nunez, P. Acevedo, R. de la Cruz), wet mountain forest, pine (CMNH); 4 ♂, 3 ♀, Independencia, 4 km S Los Pinos, Loma de Vientos, 18-35N, 71-46W, 455 m, 23 July 1992 (R. Davidson, J. Rawlins, S. Thompson, C. Young), semiarid deciduous forest with pastures (CMNH, VOB); 8 ♂, 8 ♀, La Vega, 15 km N Jarabacoa, 21 July 1987 (J. Rawlins, R. Davidson) (CMNH, VOB); 2 ♂, 1 ♀, La Vega, Bayacanes, 120 m, 24 July 1987 (J. Rawlins, R. Davidson) (CMNH); 1

♂, Monsenor Nouel, 1 km E Paso Alto de Casabito, 7 km NW La Ceiba, 19-02N, 70-29W, 1130 m, 28 July 1992 (J.R. Davidson, J. Rawlins, S. Thompson, C. Young), cloud forest (CMNH); 1 ♀, Pedernales, 26 km N Cabo Rojo, 18-06N, 71-38W, 730 m, 20 July 1990 (C.W. Young, J.E. Rawlins, S. Thompson)(CMNH); 2 ♀, Pedernales, 26 km N Cabo Rojo, 18-06N, 71-38W, 730 m, 13 July 1990 (J. Rawlins, C. Young, S. Thompson)(CMNH); 1 ♂, 1 ♀, Pedernales, 26 km N Cabo Rojo, 760 m, 17 July 1987 (J. Rawlins, R. Davidson)(CMNH); 5 ♂, 4 ♀, Pedernales, 30 km N Cabo Rojo, 18-07N, 71-39W, 1070 m, 23-24 July 1990 (C.W. Young, J.E. Rawlins, S. Thompson)(CMNH); 2 ♂, 1 ♀, Pedernales, 30 km N Cabo Rojo, 18-07N, 71-39W, 1070 m, 27 September 1991 (R. Davidson, J. Rawlins, S. Thompson, C. Young), reservoir, pine woods (CMNH); 1 ♂, Pedernales, 9.5 km N. Cabo Rojo, 18-02N, 71-39W, 35 m, 19 July 1990 (J. Rawlins, C.W. Young, S.A. Thompson)(CMNH); 2 ♂, 1 ♀, Samana, Samana Peninsula, 8 km S Las Galeras, Punta Balandra, 19-11N, 69-14W, 35 m, 10 October 1991 (C. Young, S. Thompson, R. Davidson, J. Rawlins), semiarid scrub-forest on limestone bluffs (CMNH); 1 ♂, Santiago, 1 km NE San Jose de Las Matas, 19-21N, 70-56W, 540 m, 11 July 1992 (J. Rawlins, S. Thompson, C. Young, R. Davidson), disturbed woodland (CMNH).

***Atteva siderea* (Walsingham)**

(Fig. 9)

*Oeta siderea* Walsingham, 1892: 533. Holotype ♀, DOMINICAN REPUBLIC ["San Domingo"]. No further data (BMNH) [colour image examined].

This species is similar to *gemmata*, but smaller. It is easily distinguished by the white head and by the pair of white dots on each tergum. Known only from the Dominican Republic and from two specimens labeled only as "Jamaica" in CMNH.

Material studied. DOMINICAN REPUBLIC: 2 ♂, Barahona, 6 km NW Paraiso, Rio Nizao, 18-02N, 71-12W, 170 m, 25-26 July 1990 (C. Young, J. Rawlins, S.A. Thompson)(CMNH); ♂, Dajabon, Rio Massacre, 40 m, Balneario Don Miguel, 7 km SW Dajabon, 26.v.1973 (D. & M. Davis) (USNM); ♂, ♀, Dajabon, 13 km S Loma de Cabrera, ca. 400 m, 20-22.v.1973 (D. & M. Davis) (USNM); 2 ♂, Duarte, Reserva Loma Quita Espuela, El Cadillar, 6.7 km NE San Francisco de Macoris, 19-20-12N, 70-08-59W, 280 m, 5 April 2004 (R. Davidson, J. Rawlins, C. Young), weedy regrowth with coffee, cacao, UV light (CMNH); 1 ♂, La Vega, 15 km N Jarabacoa, 240 m, 21 July 1987 (J. Rawlins, R. Davidson)(CMNH); 1 ♂, 1 female, Monte Cristi, 5 km NNE Botoncillo, 19-46N, 71-24W, 50 m, 290-30 November 1992 (R. Davidson, M. Klingler, S. Thompson, J. Rawlins), arid thornscrub (CMNH). JAMAICA: 2 ♂, [civil subdivision and precise locality unknown], Exchange A.N.S.P., CM Acc. 20359 (CMNH).

***Atteva sidereoides* sp. n.**

(Fig. 12)

Similar to *siderea* but with orange and white marks much reduced; easily distinguished from the former by the white thorax and by lacking both the distal orange band parallel to termen and the white dots on terga. Male genitalia almost identical to those of the former, except for the saccus, thickened in the middle, whereas thin, gradually tapering towards the tip in *siderea*.

Etymology: Named in reference to its similarity to *A. siderea*.

Material studied. Holotype ♂, JAMAICA: St. Ann, near Runaway Bay Cave, 50 ft, 1-2.v. 1973 (D. & M. Davis) (USNM).

***Atteva fulviguttata* (Zeller)**

(Fig. 11)

*Oeta fulviguttata* Zeller, 1873: 231. Holotype ♀, [ANTILLES] ["Australia?"] (MNHU) [colour image examined].

*Syblis glaucopidella* Guenée, 1879: 289. Lectotype ♂, JAMAICA. [No further data]. (BMNH), here designated [colour image examined]. Synonymized by Walsingham (1892: 17).

*Oeta fulviguttella* Walsingham, 1892: 17. Misspelling.

This species resembles *gemmata* and *intermedia*; differing from both by lacking the white dots on forewings and terga. 'Australia?', as mentioned in the original description is a mislabelling as the species is known only from Jamaica and Hispaniola. *P. glaucopidella* was described from an unspecified number of specimens. According to K. Sattler (pers. comm.), there are two males syntypes in BMNH collections. One of them bears the original Guenée label and is here selected as lectotype, the other will be labelled as paralectotype.

Material studied. DOMINICAN REPUBLIC: 1 ♂, 2 ♀, Hato Mayor, Parque Los Haitises, 3 km W Cueva de Arena, 19-04N, 69-29W, 20 m, 7-9 July 1992 (R. Davidson, J. Rawlins, S. Thompson, C. Young), mesic lowland forest (CMNH).

***Atteva intermedia* sp. n.**

(Fig. 10)

Intermediate between *fulviguttata* and *gemmata*, differing from the former by the presence of white dots on forewings and thorax and from the latter by the reduced number of these dots. Male genitalia almost identical to those of *pustulella* and *aurea*, except for the vesica, armed with a single, thin, short cornutus, whereas armed with a few [3-4], thin, long cornuti in the other two.

Etymology: Named in reference to its pattern, intermediate between *A. fulviguttata* and *A. gemmata*.

Material studied. Holotype ♂, ANTIGUA: Coolidge Airport, xi.1967 (N.L.H.Krauss) (USNM). Paratypes: 7 ♂♂, 1 ♀, same locality and data as holotype (USNM).

***Atteva flavivitta* (Walker)**

(Fig. 15)

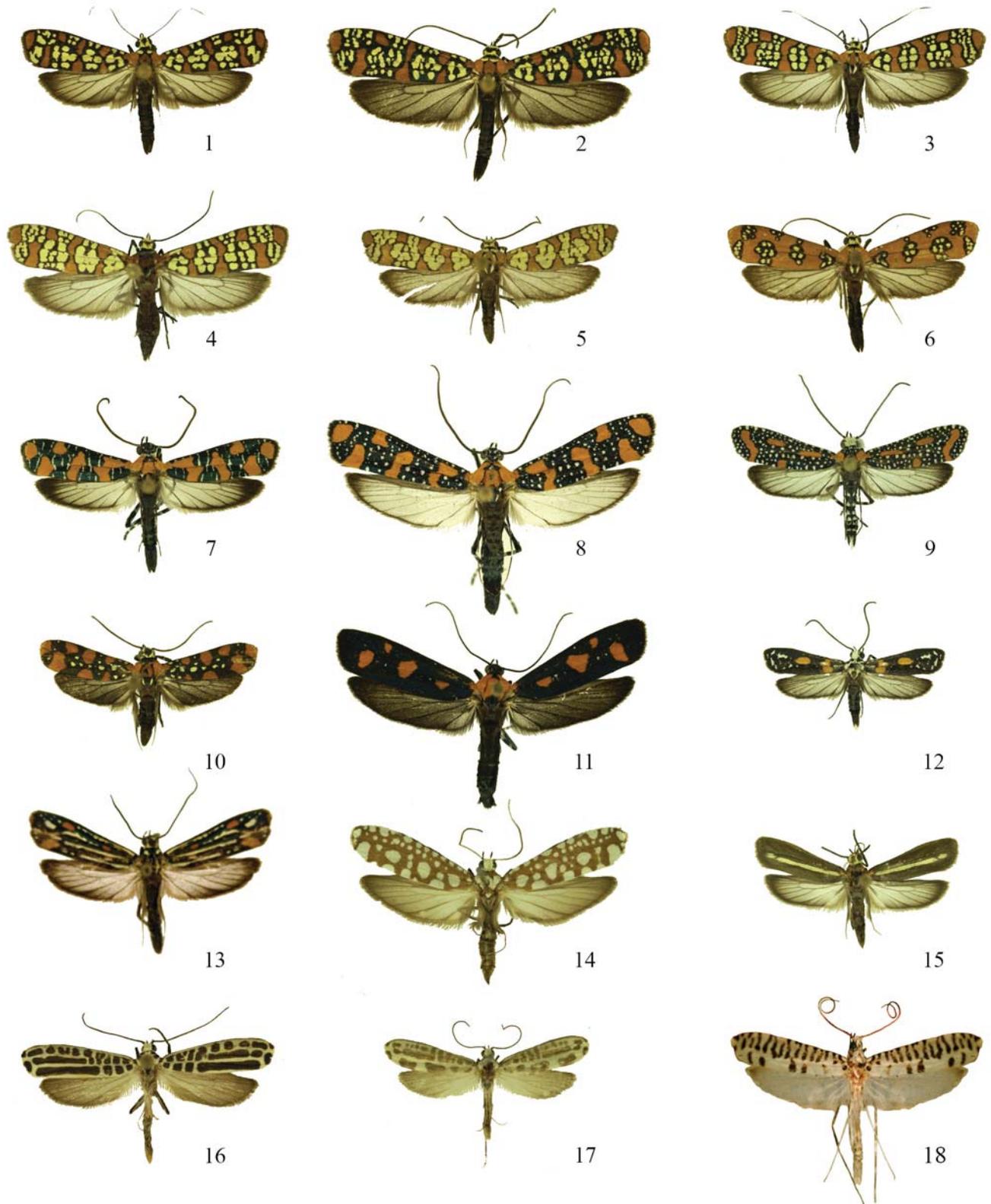
*Carthara flavivitta* Walker, 1866: 1872. Holotype ♀, [COLOMBIA]: Santa Marta (BMNH) [colour image examined].

The blackish forewings with the long, slender yellowish central band make this species readily distinguished from all others in the New World. Known only from the type locality and from 1 ♂ (illustrated), and 2 ♀♀ in the USNM, collected in the Island of Margarita, Venezuela, by J. F. G. Clarke.

***Atteva hysginiella* (Wallengren)**

(Fig. 13)

*Amblothridia hysginiella* Wallengren, 1861: 386. Holotype ♀, PANAMA. No further data (NHRS) [not examined].



Figs. 1–18. *Atteva* spp.: 1, *A. pustulella* (Brazil: BA); 2, *A. aurea* (f. *microsticta*) (México: Pue); 3, *A. aurea* (typical f.) (USA: Md); 4, *A. aurea* (f. *exquisita*) (México: Tam); 5, *A. aurea* (f. *edithella*) (México: NL); 6, *A. floridana* (USA: Fl); 7, *A. gemmata* (Cuba); 8, *A. rawlinsi* (Dominican Republic; paratype); 9, *A. siderea* (Dominican Republic); 10, *A. intermedia* (Antigua, holotype); 11, *A. fulviguttata* (Dominican Republic); 12, *A. sidereooides* (Jamaica, holotype); 13, *A. hyginiella* (Galápagos Ids.); 14, *A. cosmogona* (Brazil: DF); 15, *A. flavivitta* (Venezuela); 16, *A. zebra* (Costa Rica); 17, *A. zebrina* (Brazil: ES); 18, *A. numeratrix* (Brazil: PA, holotype).

*Cydosia sylpharis* Butler, 1877: [87]. Holotype ♀, ECUADOR: Galapagos, Albemarle Id. (BMNH) [not examined]. Synonymized by Meyrick, (1914: 21).

*Atteva monerythra* Meyrick, 1926: 278. Holotype ♀, ECUADOR: Galapagos Id., 31.vii.1924 (C. L. Collenette) (BMNH) [not examined]. Synonymized by Landry & Landry, (1998: 33).

The three long, slender yellowish lines on a black background, along forewings readily distinguish this species from all others in the genus. Restricted to the Galapagos Id. and by seven specimens in CMNH from Colorado Id., Panama. Rawlins *in litt.* states that "The seven specimens in CMNH from Barro Colorado are part of Carnegie Museum Accession Number 12,283, consisting of many insect specimens collected by field ornithologist A. Twomey from several localities including Barro Colorado Island. Specimens from this accession were labelled in error as being from Barro Colorado Island, but include material from localities in Peru, Chile, Galapagos Island, Cocos Island, and Panama. Twomey's notes #209-240 are for specimens dated April 6, 1939 from Seymour Island, Galapagos, and corresponding specimens of *hysginiella* are numbered in pencil as 226, 228, 234, 235, 236, 237, and 239. There is no doubt that the Barro Colorado labels are erroneous and I will affix labels asserting their correct origin." Landry & Landry (1998: 33-39) give a detailed description of adults, immatures and life-history.

***Atteva cosmogona* Meyrick**  
(Fig. 14)

*Atteva cosmogona* Meyrick, 1931: 87. Holotype ♀, BRAZIL: 'N. Freiburg' [RJ, Nova Friburgo, 1100 m], ex Lederer col., 1870 (NM) [examined].

The coppery-purple forewings, bearing several large round white dots easily distinguish this species from the others. The larvae were found by the author feeding gregariously on the leaves of *Simarouba amara* (Simaroubaceae) in Planaltina, DF, Brazil. It is apparently an upland species, found to the Atlantic Forest of Brazil, as indicated by specimens collected previously and by the series in the author's collection: MG, Caraça, 1,300 m; Nova Lima, 850 m; RJ, BA, Camacan, Serra Bonita Reserve, 800 m. Also two females from SC, [Seara], Nova Teutonia (Plaumann), in the USNM.

***Atteva numeratrix* Meyrick**  
(Fig. 18)

*Atteva numeratrix* Meyrick, 1930: 262. Holotype ♂, BRAZIL: PA, [Santarém] Taperinha, 21-30.vi.1927 (*Zerny*) (NM) [examined].

This is a whitish species, presumably related to *zebra*, with forewings covered by numerous thin, transverse, coppery-purple lines on costal half and a few elongate dots along dorsum. Only the type specimen is known.

***Atteva zebra* Duckworth**  
(Fig. 16)

*Atteva zebra* Duckworth, 1967: 71. PANAMA: Canal Zone, Barro

Colorado Id., 1-9.v.[19]64 (W. D. & S. S. Duckworth) (USNM) [examined].

The 'zebra' pattern makes this species readily distinct from any other in the genus. Known only from Costa Rica and Panama.

The 3<sup>rd</sup> tergite of male of this and the related species (*numeratrix*, *zebra* and *zebrina*) is folded, forming a groove that accommodates the hind tibial hair pencil. The hind tibiae are bent inwards, joining together above the groove, to facilitate the attachment of the hair pencil inside it. This groove is presumably a pheromone gland whose release of scent is enhanced by the hair pencil. If proven to be true, this gland system refers to "Type 5" of Scoble (1995: 163). Duckworth (1967: 72) referred to this gland as "a pair of hair pencils enclosed in a pocket on the third abdominal tergite of male". This mistake is easily explained as when the abdomen is removed for dissection, the hair pencils detach from the tibiae and are retained inside the groove.

***Atteva zebrina* sp. n.**  
(Fig. 17)

Very similar to the former, but much smaller and paler, with reduced marks on the forewings. Male genitalia with valvae shorter and gnathos with lateral margins parallel, not constricted basally as in *zebra*.

Etymology: Named in reference to its similarity to *A. zebra*.

Material studied. Holotype ♂, BRAZIL: ES, Linhares, 40m, 16-18.ix.1991 (Becker, no. 80824). Paratypes: 1 ♂, same data as holotype; 1 ♀, BA, Camacan, 400-700m, 21-30.ix.1991 (Becker, no. 84337) (VOB).

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