

A New *Delias* Subspecies, a New *Sabera*, and a New *Parantica* from Papua New Guinea (Lepidoptera: Pieridae, Hesperiiidae, Nymphalidae)

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ABSTRACT

Three new butterfly taxa are described from Papua New Guinea: *Delias messalina vigasa* from New Britain, *Sabera iloda* from the mainland, and *Parantica fusccla* from New Britain.

INTRODUCTION

The following new taxa will be included in the forthcoming monograph entitled *Butterflies of Papua New Guinea* (Parsons, in prep.). Papers in this series include Parsons (1984a, b; 1986a, b; 1989). General information on the taxonomy of Papua New Guinea (PNG) butterflies can be found in the introductions to these papers.

PIERIDAE (PIERINAE)

Delias messalina vigasa Parsons, new subspecies

Figs. 6-9

Description. Holotype ♂. Antennae broken (see ♀); head and frons with long silvery-gray hair scales; palpi yellow, apical segment black, a ventral fringe of black hair scales; thorax with long silvery-white hair scales dorsally, ventrally mainly dark brown, laterally with yellow hair scales; abdomen creamy-white; legs dark brown finely longitudinally striped with white. Forewing length (FWL)/wingspan (WS) 29.5/50.75 mm; costa and termen convex; dorsally dark brown, a silvery-white patch within area bounded by base to subterminal line of inner margin, and curving upwards back in an arc through lower half of cell; ventrally inner margin from base to subterminal line broadly pure white, suffusing to yellow diagonally to cell apex; costa and remainder of wing dark brown except for 3 large yellow subapical spots divided by dark brown veins. Hindwing costa and termen convex; dorsally, including costa, silvery-white with a dark brown termen 6.0 mm broad, narrowing greatly along inner margin; ventrally dark brown with a large pure white dorso-median cell patch, spreading outside cell between veins R_s and M_1 , and very slightly so on other side of M_1 ; a series of 4 red postmedian spots between veins $Sc + R_1$ and M_3 , a yellow patch at costa base, and 3 diffuse white subterminal spots between veins R_s and M_1 , decreasing in size towards tornus. Cilia of both wings short and dark brown.

Paratype ♀. Antennal length 15.0 mm, shaft and club dark brown, ventrally suffused with pure white, decreasing towards shaft base. FWL/WS 26.0/46.0 mm. Similar to male, but for the following characters: abdomen dorsally pale yellow, suffusing to creamy-white ventrally; pale areas of wings dorsally much more reduced, producing a corresponding increase in dark brown areas, silvery-white region also more diffuse and with a large creamy-white hindwing

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patch in same position as pure white cell patch ventrally; forewing ventrally with a band-like row of 5 (not 3) yellow subapical spots; red and white hindwing ventral markings bolder, broader, forming bands, and extending farther tornally, white cell patch larger.

Type data. Holotype ♂, PAPUA NEW GUINEA: NEW BRITAIN: Upper Warrongoi Riv, 1,000 m, 4. XII.1962, J. Sedlacek (genitalia vial no. BBMH MJP 038); paratype ♀, PAPUA NEW GUINEA: NEW BRITAIN: Upper Warrongoi Riv, 1,300 m, 5. XII.1966, J. Sedlacek (genitalia vial no. BBMH MJP 039); in Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.

Remarks. Male keys to *Delias messalina orientalis* Arora, 1983, and the female to *D. m. messalina* Arora, 1983, in Arora (1983). *D. m. vigasa* is similar to *orientalis*, but easily distinguished by the following characters: ♂ *vigasa* with much broader dark brown wing margins dorsally, and more reduced red and white markings ventrally; ♀ with silvery-white forewing inner marginal patch dorsally (absent in *orientalis*), pale basal half of hindwing dorsally silvery-white (not greenish-yellow), and lacking subterminal rows of several diffuse white spots (present on both wings dorsally in *orientalis*). Both *orientalis* and *vigasa* differ from *m. messalina* in a number of ways, but are most readily distinguished by the hindwing ventral cell spot being much larger and yellow (not white).

HESPERIIDAE (HESPERIINAE)

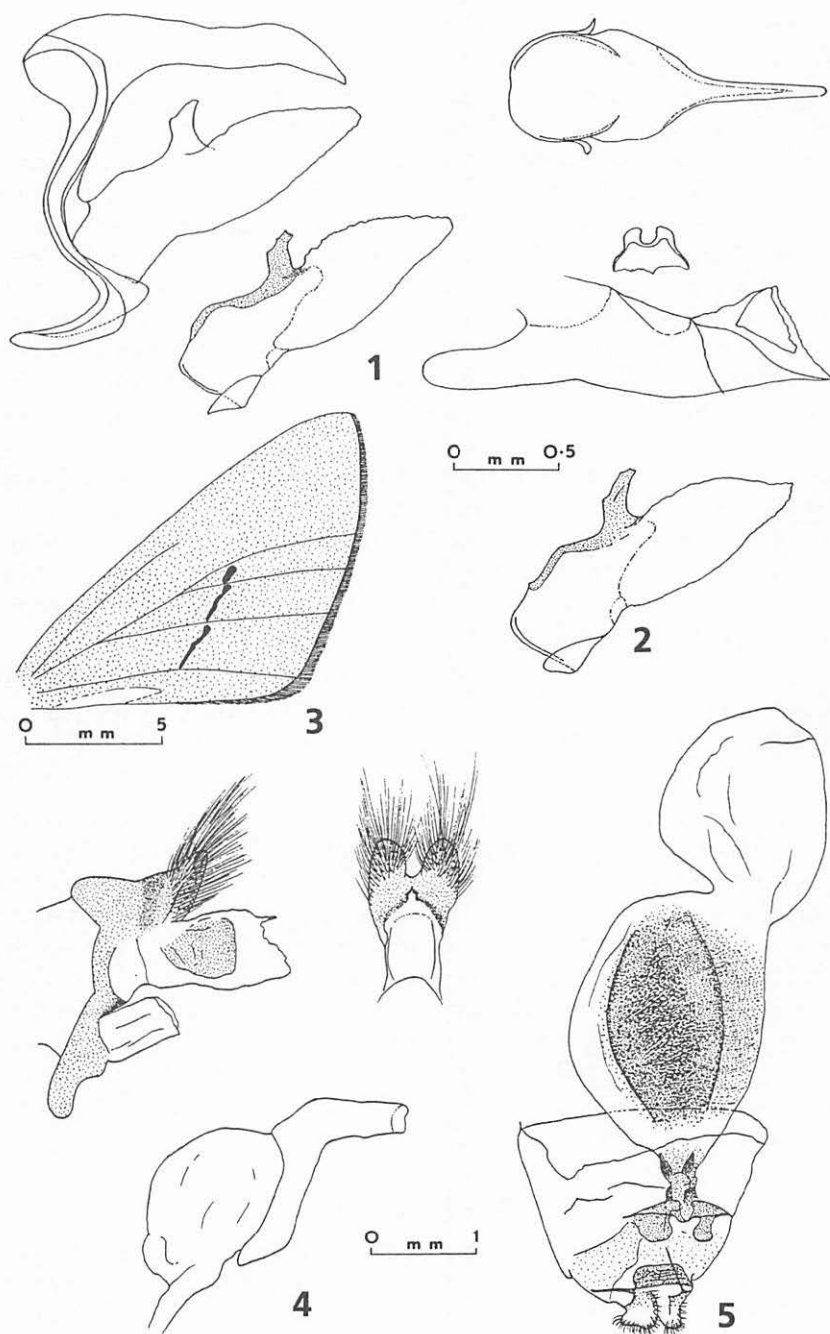
Sabera iloda Parsons, new species

Figs. 1–3, 10, 11

Description. Holotype ♂. Antennal length 10.0 mm, shaft, club and apiculus dark brown, almost black, club ventrally pale yellow; head dark brown, frons with scales that reflect mainly pale orange and pale turquoise; palpi pale creamy-yellow, second segment brown laterally, apical segment dark brown; thorax dark brown, slightly paler brown ventrally, dorsolateral prothoracic tegulae dark brown, fringed with pale yellow; abdomen dark brown, ventrally with some creamy-white scales at margins of segments distally; legs dark brown. FWL/WS 15.75/31.5 mm, costa and termen slightly convex; dorsally dark brown with an obscure pale yellow inner marginal streak from base to median line; narrow dark brown sex-brand as in Fig. 3; ventrally dark brown, but costa, apex, and subapex with a reddish-mauve sheen. Hindwing costa and termen convex and well rounded, tornus slightly produced; dorsally dark brown with an extremely obscure paler brown median patch beyond cell apex; ventrally with a reddish-mauve sheen, except for a contrasting matte dark brown sector from base to termen; between vein 3A and a line bisecting space between veins CuA_2 and $1A + 2A$, an obscure, short, pale, median band, sullied by mauve and margined by diffuse dark purple, especially towards inner margin. Cilia of forewing dark brown, but with some creamy-white at tornus; of hindwing longer and creamy-white between tornus and vein M_3 , otherwise dark brown.

Type data. Holotype ♂, Kga/11/9 [i.e., requiring the following label data: NEW GUINEA, Kiunga, Fly River, 11 September 1957 W.W. Brandt], (genitalia vial no. ANIC MJP 108); paratype ♂ [rather worn and damaged] Kiunga [i.e., requiring above label data], (genitalia vial no. ANIC MJP 109); in Australian National Insect Collection (CSIRO), Canberra, Australia.

Remarks. Keys to *Sabera bicolor misola* Evans, 1949, in Evans (1949), but distinct from it. Although extremely like all four similar species of the *S. fuliginosa* (Miskin 1890) group, it differs from them by the very obscure median pale patch of the hindwing dorsally and much longer thumb-like process of the dorsal margin of the much narrower valva (Figs. 1 and 2). The male forewing sex-brand (Fig. 3) is also very similar to the brands found in the *fuliginosa* group, but is distinct in shape.



Figs. 1-5. 1, *Sabera iloda* HT ♂ genitalia clockwise from upper left, whole genitalia (minus aedeagus) lateral profile, uncus dorsal profile, juxta ventral profile, aedeagus lateral profile, detail of right valva inner lamina. 2, *S. iloda* PT ♂ detail of right valva inner lamina. 3, *S. iloda* HT ♂ detail of forewing sex-brand. 4, *Parantica fusccla* HT ♂ genitalia: clockwise from upper left, whole genitalia (minus aedeagus) lateral profile (note valvae are aberrant and vestigial), uncus dorsal profile, aedeagus lateral profile. 5, *P. fusccla* PT ♀ genitalia. (HT = holotype, PT = paratype.)

NYMPHALIDAE (DANAINAE)

***Parantica fusccla* Parsons, new species**

Figs. 4, 5, 12–15

Description. Holotype ♂. Antennae broken (see ♀); head, frons, and palpi damaged (see ♀); thorax dark brown (almost black), sparsely spotted with pure white; abdomen dorsally dark brown, a very diffuse white spot either side of segment 1, ventrally slightly paler creamy-brown, a white suffusion between segments 2 and 3, and 3 and 4; coxae of mid- and hind-legs pure white, otherwise legs dark brown. FWL/WS 36.5/61.0 mm, costa and termen slightly convex; dorsally reddish-brown, patterned as illustrated with creamy-white spots, discocellulars with a small but notable dark brown median spot; ventrally similar, but slightly paler reddish-brown, and more yellowish-brown between costa and cell, veins dark brown, markings suffused with reddish-brown, except row of subterminal spots, which are pure white. Hindwing costa almost straight, termen very convex and well-rounded; dorsally and ventrally patterned as illustrated, and with colors like forewing; subtornal hindwing sex-brand ovate, 5.0 mm long by 2.75 mm wide, divided medially by vein 1A + 2A, gray-brown dorsally, dark brown ventrally. Cilia of both wings very short and dark brown.

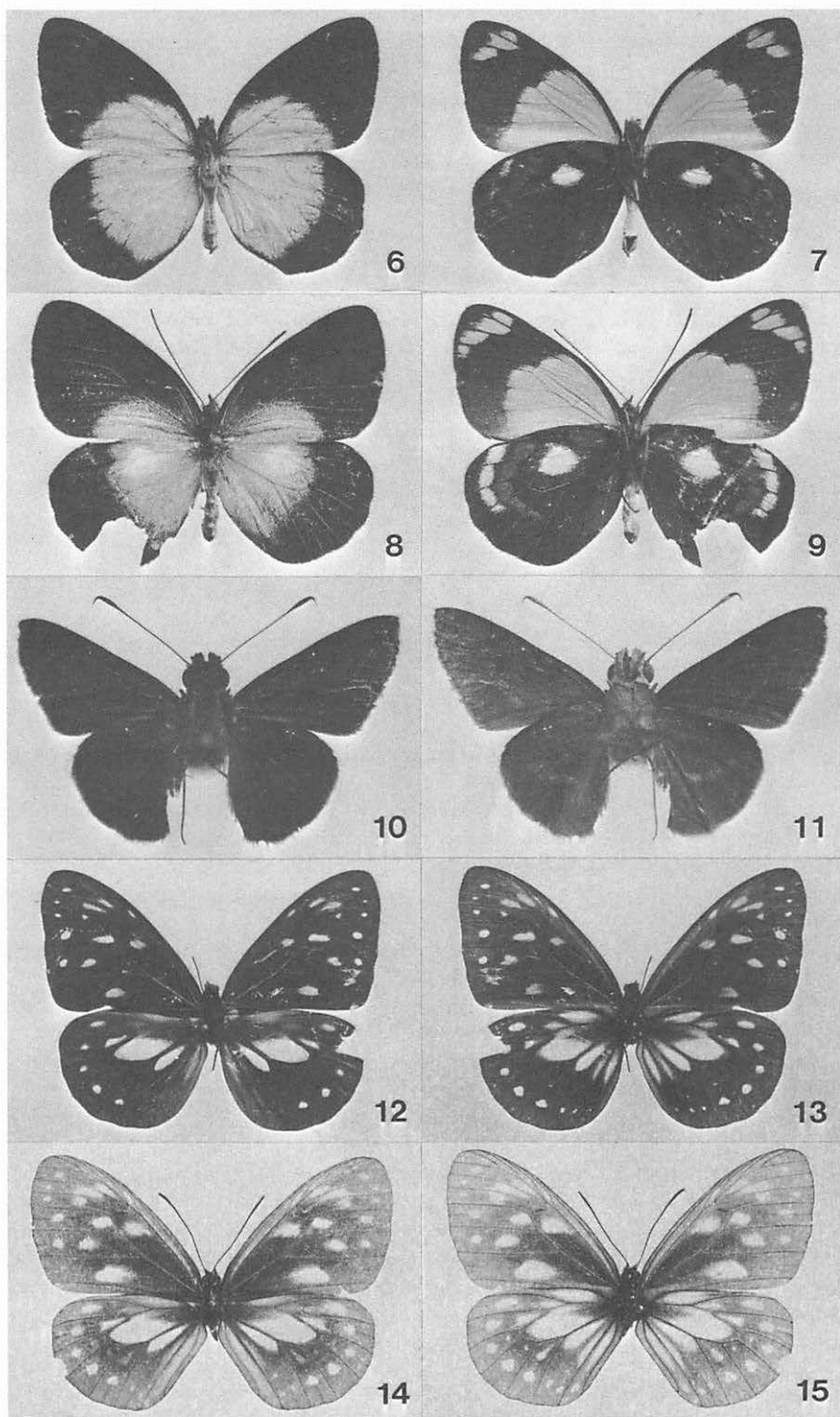
Paratype ♀. Antennal length 18.0 mm, shaft and club black; head and frons dark brown with white adjacent to eye, including 3 white spots; palpi with white basal segment and other 2 segments longitudinally striped with white and dark brown. FWL/WS 39.5/67.0 mm. Similar to male, but thorax with a white middorsal longitudinal stripe, wings with much paler reddish-brown ground color and larger pale markings, dark brown forewing discocellular spot more obvious on both surfaces, abdomen creamy-white ventrally.

Type data. Holotype ♂, PAPUA NEW GUINEA: NEW BRITAIN: Upper Warrongoi Riv, 1,000 m, 5. XII.1962, J. Sedlacek (genitalia vial no. BBMH MJP 038); paratype ♀, PAPUA NEW GUINEA: NEW BRITAIN: Upper Warrongoi Riv, 1,300 m, 4. XII.1966, J. Sedlacek (genitalia vial no. BBMH MJP 039); in Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.

Remarks. In Ackery & Vane-Wright (1984) keys to the Biak Island (Irian Jaya) endemic, *Parantica marcia* (Joicey & Talbot, 1916), but distinct from it. *P. fusccla* is most similar to *P. marcia* and *P. rotundata* (Grose-Smith 1890), but differs from both in its much redder-brown ground color; more restricted pattern of pale markings; more apically acute forewing; broader hindwing; and its possession, in the male, of a discrete hindwing subtornal sex-brand. The new species is thus distinct from all other *Parantica* within the New Guinea Region (most of which were illustrated with color photographic plates by D' Abrera 1971, 1978). The uncus and aedeagus (Fig. 4) are typical for the genus, but the remainder of the genitalia are obviously aberrant (malformed), especially in the lack of valvae. The aedeagus is without any large cornuti in the vesica, but the latter is clothed in minute cornuti near the distal orifice. The genitalia of the paratype female (Fig. 5) are also typical of *Parantica*.

DISCUSSION

Kiunga is a locality in the Western Province of mainland PNG where William Brandt collected some remarkable butterflies (now mostly housed in the Australian National Insect Collection). The Warrongoi, or Warangoi, River flows northwards (approximately in line with Rabaul) from its headwaters on Mount Birinia in the East New Britain Province of the island of New Britain. The locality visited by J. Sedlacek on the upper reaches of the river apparently represents a very poorly collected area that may reward entomologists with further new endemic insect species. The presence of *D. messalina* and *P. fusccla* in New Britain is unexpected; the former was previously known only from the Solomon Islands. Only *P. rotundata* was thought to represent *Parantica* in New Britain, and *P. fusccla* is a distinctive species. Furthermore, *D. messalina vigasa* is interesting in that it is phenotypically closer to the Santa Ysabel and



Figs. 6-15. 6-7, *Delias messalina vigasa* HT ♂ upp, und. 8-9, *D. m. vigasa* PT ♀ upp, und. 10-11, *Sabera iloda* HT ♂ upp, und. 12-13, *Parantica fuscata* HT ♂ upp, und. 14-15, *P. fuscata* PT ♀ upp, und. (HT = holotype, PT = paratype, upp = upperside, und = underside.)

Guadalcanal (Solomon Islands) subspecies than to the nominotypical Bougainville Island (North Solomons Province, PNG) subspecies (see discussion on "discontinuous subspecies" in the nymphalid genus *Tellervo* by Ackery 1987: 223). Thus the distinctive subspecies *m. messalina* is geographically positioned between two equally distinctive but mutually similar subspecies. The discovery of *P. fuscata* parallels the case of *Tiradelphe schneideri*, a monobasic genus described by Ackery & Vane-Wright (1984) from just two females collected on Mount Popomatseu, Guadalcanal Island. These island endemics would appear to be very rare, or highly localized.

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Changes in Classification and Names of Hawaiian Pyraloidea since the Publication of *Insects Of Hawaii*, Volume 8, by E.C. Zimmerman (1958) (Lepidoptera)

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ABSTRACT

Changes in taxonomy and new records of Hawaiian Pyralidae (s.l.) published since 1958 are collated, some errors are corrected, and new changes are introduced. Genera affected are *Hellula* Guenée, *Uresiphita* Hübner, *Pseudopyrausta* Amsel (ex *Blepharomastix* Lederer), *Hyperectis* Meyrick, *Terastia* Guenée, *Nomophila* Hübner, *Ategumia* Amsel (ex *Bocchoris* Moore and *Blepharomastix*), *Herpetogramma* Lederer, *Salbia* Guenée (ex *Syngamia* Guenée), *Spoladea* Guenée (ex *Hymenia* Hübner), *Glyphodes* Guenée and *Stemorrhages* Lederer (ex *Margaronia* Hübner), *Omiodes* Guenée (for *Hedylepta* Lederer), *Udea* Guenée (for *Oeobia* Hübner), *Conogethes* Meyrick (ex *Dichorocis* Lederer), *Eudonia* Billberg (ex *Scoparia* Haworth), *Cryptoblates* Zeller, *Paramyelois* Heinrich, and *Assara* Walker. The Pyralidae as understood by Zimmerman are divided, following Minet, into two families Pyralidae and Crambidae; a key is given to these higher taxa as found in Hawai'i. One new synonym is noted, the status of 5 taxa is revised, and 123 new combinations are made. No new taxa are described, and no unpublished species records are added to the Hawaiian list. The origin, geographical distribution, and affinities of some taxa are discussed.

INTRODUCTION

A number of changes in names and placement of Hawaiian Pyralidae have been made since the appearance of Volume 8 of *Insects of Hawaii* (Zimmerman 1958). Some of these have been published explicitly, though not always in very obvious places; others are implicit in published work on genera or on other faunas. Also, a few additional species have been reported. The object of this paper is to collate the changes and additions as a basis for the checklist of Hawaiian insects in preparation by the Bishop Museum. I have taken the opportunity to add some unpublished changes, but new taxa and unreported species are reserved for other publications. Substantial work of revision will have to be done on most of the large genera and some of the small ones; except for some changes in synonymy, I have not attempted to anticipate this in the present paper.

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SUPERFAMILY PYRALOIDEA

The superfamily Pyraloidea has been restricted by Minet (1982, 1983, 1985, 1986). The Pterophoridae and Alucitidae, included in Pyraloidea by Zimmerman, are now referred to separate superfamilies, which are not considered in detail in the present paper. I follow Minet's division of the Pyralidae in the broad sense, as understood by Zimmerman, into two families, the Crambidae—represented in Hawai'i by the subfamilies Scopariinae, Crambinae, Nymphulinae, Glaphyriinae, and Pyraustinae—and the Pyralidae in the sense of Minet, comprising in Hawaii the subfamilies Pyralinae, Galleriinae, and Phycitinae. The Pterophoridae, the Alucitidae, and the two families of Pyraloidea can be separated in the Hawaiian fauna by the following key:

Key to Pyraloidea, Alucitidae, and Pterophoridae in Hawaii

1. Wings in Hawaiian species partly divided by deep sinuses into plumelike lobes; proboscis naked; maxillary palpus, ocellus, and chaetosema absent; abdomen without tympanic structures at base 2
 Wings not divided by sinuses into plumelike lobes: proboscis if present scaled at base; in Hawaiian species maxillary palpus always, ocellus usually, and chaetosema often, present; abdomen with well-developed tympanic organ ventrally at base superfamily **Pyraloidea**, 3
2. Wings narrow, tip of abdomen far exceeding anal angle of extended hindwing; in Hawaiian species forewing divided by 1 sinus into 2 lobes, and hindwing by 2 sinuses into 3 lobes. superfamily **Pterophoroidea**, family **Pterophoridae**
 Wings wide, tip of abdomen reaching to about anal angle of extended hindwing; in Hawaiian species fore- and hindwings each divided by 5 deep sinuses into 6 lobes superfamily **Alucitoidea**, family **Alucitidae**
3. Tympanic apparatus without praecinctorium (a median, sagittal, simple or bilobed flap extending ventrad into space between thorax and abdomen); transparent tympanum and translucent conjunctiva coplanar; tympanic cases anteriorly almost closed family **Pyralidae**
 Tympanic apparatus with distinct praecinctorium; transparent tympanum and translucent conjunctiva in distinct, intersecting planes, meeting at a strong angle along their boundary; tympanic cases anteriorly widely open family **Crambidae**

For convenience, I discuss taxa of Pyraloidea in the sequence given by Zimmerman, but the following order is taxonomically better:

- Superfamily Pyraloidea
 - Family Pyralidae
 - Subfamily Pyralinae
 - Subfamily Galleriinae
 - Subfamily Phycitinae
 - Family Crambidae
 - Subfamily Scopariinae
 - Subfamily Crambinae
 - Subfamily Nymphulinae
 - Subfamily Glaphyriinae
 - Subfamily Pyraustinae

FAMILY CRAMBIDAE

SUBFAMILY GLAPHYRIINAE

Genus *Hellula* Guenée, 1854. Zimmerman placed this genus in the Pyraustinae, but I subsequently transferred it to the Glaphyriinae (Munroe 1964). Although the subfamily is

predominantly American, this genus is widely distributed in the warmer parts of both hemispheres. As I pointed out in the review of Zimmerman's Volume 8 (Munroe 1960), Zimmerman correctly identified the Hawaiian species as *H. undalis* (Fabricius 1794), described from Europe, and figured the moth and the male and female genitalia. However, he overlooked the separation of the American population as *H. rogatalis* (Hulst 1886) by Capps (1953). Consequently, he referred to *H. undalis* as "a widespread species," which it is, but only in the Old World. He cited illustrations by Peterson (1948) of larval structures actually referable to *H. rogatalis*.

H. rogatalis has been recorded from Hawai'i by Mau (1977) on the basis of collections from Chinese cabbage on Lāna'i. However, on investigation it turns out that (a) the Lāna'i material has not been preserved, and (b) all *Hellula* material in the Hawaii State Department of Agriculture collection had been placed under the name *H. rogatalis* on the basis of an identification by the late E.L. Todd, unsupported by genitalia dissection. I have dissected specimens from Hawai'i, O'ahu, Kaua'i, and Midway, all of which proved to be *H. undalis*, including specimens from the State Agriculture Dept. collection identified as *H. rogatalis*. Although there is as yet no hard evidence of the occurrence of *H. rogatalis* in the state, it is indistinguishable externally from *H. undalis*, so its presence, now or in the future, could be detected only by examination of genitalia. It is recommended, therefore, that samples of *Hellula* be dissected from time to time and compared with Capp's excellent figures.

A second American species, *H. phidilealis* (Walker 1859) has been recorded from Kure Island by Butler and Usinger (1963). This record was supported by examination of genitalia. *H. phidilealis* is distinguished by external characters and easily by genitalia (see Munroe in Dominick *et al.* 1972, 1973).

SUBFAMILY PYRAUSTINAE

Genus *Uresiphita* Hübner, [1825] 1816. Zimmerman correctly referred *Mecyna virescens* Butler, 1881, to this genus. He synonymized it with the European *U. polygonalis* ([Denis & Schiffermüller] 1775). Clarke (1971: 73) raised it to the status of a subspecies, pointing out that the Hawaiian *U. polygonalis virescens* differs substantially from European, New Zealand, and Rapa populations in coloration. I provisionally follow Clarke's arrangement. Though the whole question of variation in this complex needs further study, the Hawaiian specimens I have seen certainly fall outside the range of variants found elsewhere, and they are at least subspecifically distinct. Zimmerman thought that the species was introduced to Hawai'i from Europe, but the distinctive maculation argues against this. From material I have examined, it seems possible that there are distinct local populations on different Hawaiian islands, but this remains to be verified. Zimmerman did note the comment by Perkins (1914: clx) that biologically and distributionally *virescens* has all the appearance of an endemic insect. Assuming that the Hawaiian populations are endemic, their origin presents an interesting and not easily solved problem. If their ancestors were introduced by humans, why is the genus found only in Hawai'i and Rapa in the eastern Pacific, and not again until New Zealand, Australia, and Japan on the western Pacific rim? If, on the other hand, they arrived naturally by oversea dispersal, why do the Hawaiian and Rapa populations not look more like the species from North America, the closest potential source area? Habits tell us little, one way or the other. On the one hand, the early stages are readily dispersed on woody legumes and might have been carried by early Polynesians or modern nurserymen; on the other hand, the adults are active fliers and well-known migrants and might well have made long transoceanic jumps.

Although placed by Zimmerman next to *Udea* ("*Oeobia*," see below), *Uresiphita* belongs to the separate tribe Pyraustini, along with the introduced genus *Pseudopyrausta*; however, the two genera are not very closely related within the tribe. It may be noted that *Mecyna*, in which Butler described *virescens*, was originally a manuscript name of Guenée's, intended to apply to

polygonalis and its relatives. In addition to being antedated by *Uresiphita*, *Mecyna* was actually first-published by Doubleday ([1849] 1850) for a species not congeneric with *polygonalis*. For many years, however, while *Uresiphita* and other generic names from Hübner's *Verzeichniss* were considered *nomina nuda*, and while Doubleday's obscure publication and its consequences had not yet become widely known, this generic name was used for *polygonalis* and species associated with it.

Genus *Pseudopyrausta* Amsel, 1956. (Not in Zimmerman.) *Pseudopyrausta acutangulalis* (Snellen 1875) was released for control of *Lantana* in O'ahu in 1953 (Weber 1954), in Kaua'i and Moloka'i in 1954 (Weber 1955), again in O'ahu and in Maui and Hawai'i in 1965 (Davis & Krauss 1966). Establishment has not been reported. The Hawaiian reports give the genus as *Blepharomastix*, but *acutangulalis* belongs to a different tribe and is the type species of *Pseudopyrausta*. There are additional neotropical and southern nearctic species related to *acutangulalis*, and the group requires revision. For a brief discussion see Munroe in Dominick *et al.* (1976: 16).

Genus *Hyperectis* Meyrick, 1904. The synonymy given by Zimmerman for the species is correct. As I noted (Munroe 1960), Zimmerman was correct in his surmise that *Hyperectis* is not closely related to *Erecta* Walker, 1859, but *Hyperectis* is very close to *Hydriris* Meyrick, 1885 = *Spanista* Lederer, 1863, not Foerster, 1862 = *Antierecta* Amsel, 1956, formerly considered a synonym of *Erecta*. *Hydriris* has several species and is widely distributed in tropical and warm temperate countries. The nearctic and Central Asian *Choristostigma* Warren, 1892 = *Namangania* Amsel, 1952, and the Floridian *Geshna* Dyar, 1906, are also structurally similar to *Hyperectis*. *Tatobotys vibrata* Meyrick, from the Marquesas, was compared by Zimmerman to *Hyperectis*, but the figures published by Clarke (1986) show that it is a true *Tatobotys* and that its similarity to *Hyperectis* is superficial.

Genus *Terastia* Guenée, 1854. As mentioned in Munroe (1960), the Old World forms previously referred to *T. meticulosalis* Guenée, 1854, belong to the distinct species *T. subjectalis* Lederer, 1863, which lacks the dark triangular costal patch that precedes the orbicular spot of the forewings in *T. meticulosalis*, and which is distinct also in male and female genitalia. Larvae of both species bore in pods and shoots of *Erythrina*. Unfortunately, Zimmerman figured the moth and the male and female genitalia from Mexican specimens of *T. meticulosalis*. *T. subjectalis* seems not to have been taken in Hawai'i since the 1920s.

Genus *Nomophila* Hübner, [1825] 1816. The Hawaiian species is correctly given by Zimmerman as *N. noctuella* ([Denis & Schiffermüller] 1775), but, as I pointed out (Munroe 1960, 1973), this species is not cosmopolitan, as was long supposed, but is restricted to Europe, Africa, and Asia. The nearctic species is distinct, as are several tropical and south temperate ones. I have given a number of Hawaiian records (Munroe 1973: 188).

Genus *Ategumia* Amsel, 1956, type species *matutinalis* (Guenée 1854), described in *Samea* Guenée, 1854. The species resembles *Samea* and related genera in external appearance, but the male genitalia of *Ategumia* are strikingly different, lacking the uncus and much of the tegumen. The species are found in the tropics and subtropics of both the Old and New Worlds, and the larvae so far as is known feed on Melastomaceae. Since Zimmerman's publication, three species have been introduced to the state of Hawai'i as biological control agents against melastome pests. These were reported as follows:

a. "*Bocchoris fatualis* Munro" by Davis (1960: 246). *Botys fatualis* Lederer was described in 1863. It was omitted by Hampson (1899) from his revision of the Pyraustinae, but I designated a lectotype from Java (Munroe 1958a: 511). The species was placed in the collection of the British Museum (Natural History), London, under *Bocchoris*. The genitalia are closely similar to those of the neotropical *Ategumia matutinalis* (Guenée 1854), and the species is hereby transferred to *Ategumia* as *Ategumia fatualis* (Lederer 1863), new combination. Stock of this species from Paeta, Laguna Province, Philippine Islands, was introduced in 1957 to combat

Melastoma malabathricum Linnaeus, and was found to be established at Knudson Gap, Kaua'i, in 1959. The reference in the published report to "Munro" as author of the species is a mistake.

b. "*Bocchoris adipalis* Zeller" by Davis & Krauss (1966: 202, 205). *Botys adipalis* Lederer, 1863, was transferred by Hampson (1896: 286) to *Bocchoris*, but it is misplaced there. It is closely related to *Botys fatualis* and like it must be transferred to *Ategumia* Amsel, where it becomes *A. adipalis* (Lederer 1863), new combination. Davis and Krauss wrongly gave "Zeller" as the author of the species. I designated a lectotype for *Botys adipalis* (Munroe 1958a: 511). The stock introduced to the island of Hawai'i in 1964 was from Kuala Lumpur, Malaysia, and from Singapore, but no recoveries had been reported by 1966. The taxonomy of the Old World species of *Ategumia* has not been critically studied, and the identities of the various introductions require confirmation. Specimens have been collected in Kaua'i and O'ahu that look somewhat different from the material introduced as *B. fatualis*; their identity, too, is doubtful.

c. "*Blepharomastix*" *ebulealis* (Guenée 1854) by Davis (1971: 61; 1972: 189; 1974: 357), by Nakao and Funasaki (1976: 329), and by Fujii (1977: 394, 398, 406, 409). Both larvae and adults were liberated in O'ahu to combat Koster's curse, *Clidemia hirta* (L.), in 1969–72, and the species was reported established by 1974. I transferred *Botys ebulealis* Guenée from *Blepharomastix* Lederer, 1863, to *Ategumia* in the North American checklist (Munroe, in Hodges *et al.* 1983) because it has closely similar genitalia and external structure and basically similar maculation to *A. matutinalis* and other American and paleotropical species. It is immediately recognizable, however, by its small size, the erect termen of the forewing, and the bright yellow ground with narrow, evenly dark terminal band.

Genus *Herpetogramma* Lederer, 1863. (Not in Zimmerman.) *H. licarsisalis* (Walker 1859), a species originally described from Sarawak but widespread in tropical and subtropical Asia and in the islands of the western Pacific, was recorded by Davis for LaPlante (1968) as "Pyralidae sp." and by Au (1968) as *Pachyzancla licarsisalis* (Walker). The current generic assignment was reported by LaPlante and Au (1968). Native species of *Herpetogramma* occur in the Marquesas, though not in Hawaii, and the genus is widespread in the Old and New Worlds.

Genus *Salbia* Guenée, 1854. (Not in Zimmerman.) *S. haemorrhoidalis* Guenée, 1854, was released for control of lantana in O'ahu, Moloka'i, Maui, and Hawai'i in 1956 (Chong 1957, Weber 1957) and rapidly became established (Davis 1958). It has been reported as *Syngamia haemorrhoidalis* in the Hawaiian literature, but it is not congeneric with *S. florella* (Stoll 1781), the typespecies of *Syngamia* Guenée, 1854. In the North American checklist I placed it in *Salbia* Guenée, 1854 (Munroe in Hodges *et al.* 1983).

Genus *Spoladea* Guenée, 1854, replacing *Hymenia* Hübner, [1825] 1816. Moths of these two genera are very similar in external structure and appearance, but their genitalia are different. In *Spoladea* the uncus is short and rounded, without a constricted stem, whereas in *Hymenia* the uncus has a slender stem and its expanded tip reaches the apex of the valve. *Spoladea* has several species in the Old World tropics and subtropics, including a mimetic species in New Guinea (Munroe 1974) and giant species in Micronesia and New Caledonia (unpublished data). These differ only slightly in genitalia, though their external appearance and/or secondary sexual characters are different. Apparently there is only one species, perhaps introduced, in the New World. Conversely, *Hymenia* appears to have a single species of very uniform appearance in the Old World, whereas New World populations are more diverse, though their status as species or otherwise has not been critically assessed. The Hawaiian representative, *S. recurvalis* (Fabricius 1775) (wrongly dated as 1787 by Zimmerman) is the type species of *Spoladea*. The combination has been used by several authors, and I adopted it (Munroe in Hodges *et al.* 1983).

Genera *Glyphodes* Guenée, 1854, and *Stemorrhages* Lederer, 1863, replacing *Margaronia* Hübner, [1825] 1816. Zimmerman (1958: 59) wrote of *Margaronia*, "As the genus is now constituted, however, I believe that it is composite. It appears to me that the two Hawaiian species may belong to two genera." I suggested (Munroe 1960) that the above genera should

be used for *cyanomichla* (Meyrick 1899) and *exaula* (Meyrick 1888), respectively. *Margaronia* in fact is a junior objective synonym of *Palpita* Hübner, [1808] 1806, which differs in both male and female genitalia from *Glyphodes* and *Stemorrhages*. *Glyphodes cyanomichla* has a complex pattern of bands on the wings closely similar to that of *G. stolalis* Guenée, 1854, the type species of the genus. The translucent green *Stemorrhages exaula* resembles *Stemorrhages sericea* (Drury 1773) from Africa and Madagascar in appearance and genital structure, but lacks the expansion of the male antennal shaft found in that species. Several additional related species occur in the Old World tropics, including: (a) *Stemorrhages marthesiusalis* (Walker 1859), n. comb., from "Hindustan" [India], described in *Margaronia* = *S. nereis* (Meyrick 1887), n. comb., from "Ceylon" [Sri Lanka], described in *Margarodes* Guenée, 1854, but not the same as *Margarodes lustralis* Guenée, 1854, with which it has wrongly been synonymized, but which belongs to a different genus, so far unnamed; (b) *Stemorrhages amphitritalis* (Guenée 1854), n. comb., from "Silhet" [India], described in *Margarodes*; (c) *Stemorrhages titanicalis* (Hampson 1918), n. comb., from the Solomon Islands, described in *Margaronia*; (d) *Stemorrhages oceanitis* (Meyrick 1886), n. comb., from "New Hebrides" [Vanuatu] and Fiji, described in *Margarodes*; (e) *Stemorrhages thetydalis* (Guenée 1854), n. comb., described in *Margarodes*, from Tahiti; and *Stemorrhages euthalassa* (Meyrick 1934a), from the Marquesas, described in *Margaronia*, but transferred to *Stemorrhages* by Clarke (1986). All the nominal species referred to in this paragraph were listed by Klima (1939) in *Diaphania* Hübner, 1818, which Klima used inclusively to replace *Glyphodes* and *Margaronia* in the broad sense in which these names were successively employed by Hampson.

Genus *Omiodes* Guenée, 1854, replacing *Hedylepta* Lederer, 1863. Zimmerman (1958) correctly pointed out that the Hawaiian species related to *Botys accepta* Butler are not congeneric with the type species of *Lamprosema* Hübner, 1823, *Nacoleia* Walker, 1859, *Semioceros* Meyrick, 1884, or *Phostria* Hübner, [1819] 1816, though they have their own nominal genus, *Loxocreon* Warren, 1892, which is a subjective synonym of *Hedylepta* Lederer, 1863. However, Zimmerman was wrong in saying that these species are not related to the type species of *Omiodes*. Actually they are as close to it as to the type species of *Hedylepta*. *Omiodes* has priority and should be reinstated for the Hawaiian species. Fortunately, every nominal species from Hawai'i has already been cited in *Omiodes*, and in fact many were described in it. Consequently, no new combinations are involved.

Genus *Udea* Guenée, 1854, replacing *Oeobia* Hübner, [1825] 1816. *Oeobia* was suppressed for the purposes of the Law of Priority, but not those of the Law of Homonymy, by the International Commission on Zoological Nomenclature in its Opinion 536. Consequently the Hawaiian species placed here by Zimmerman must be moved to *Udea*. I noted this (Munroe 1960), but I did not explicitly transfer any species. All the nominal species listed by Zimmerman, 49 in all, some cited as subspecies or synonyms, are hereby transferred to *Udea* as new combinations (see Table 1).

Genus *Conogethes* Meyrick, 1884. (Not in Zimmerman.) *Conogethes punctiferalis* (Guenée 1854), the type species of the genus, has been reported from Hawaii twice in the literature. Pupae were taken from a pine tree in the conservatory of a Japanese ship at Honolulu in 1921 (Ehrhorn 1922), and Fullaway (1928) exhibited a moth reared from fruit or seeds of the longan, *Nephelium longanum*, "gathered on the tree." The locality and circumstances of the latter collection were not given, but the difference in habits from the previously recorded collection was noted. The species referred to *C. punctiferalis* are known to be a complex, and the two records probably refer to different species. Both records were given under the generic name *Dichocrocis* Lederer, 1863, following Hampson's classification, but the type species of that genus is very different in structure, and *Conogethes* must be separated.

Table 1. New combinations in Hawaiian *Udea*, genera in which originally described and specific synonymy according to Zimmerman (1958).

New combination	Author, date	Described in	Synonym or subspecies of
<i>Udea argoscelis</i>	Meyrick, 1888	<i>Saopula</i>	
<i>U. aurora</i>	Butler, 1881	<i>Anemosa</i>	
<i>U. brontias</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. bryochloris</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. calliastra</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. caminopis</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. campylotheca</i>	Swezey, 1946	<i>Phlyctaenia</i>	<i>U. despecta</i> [syn.]
<i>U. cataphaea</i>	Meyrick, 1899	<i>Protaulacisticis</i>	
<i>U. chalcophanes</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. chloropis</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. chytropa</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. conisalias</i>	Meyrick, 1899	<i>Loxostege</i>	
<i>U. constricta</i>	Butler, 1882	<i>Scopula</i>	
<i>U. despecta</i>	Butler, 1877	<i>Rhodaria</i>	
<i>U. draconias</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. dryadopa</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. endopyra</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. ennychioides</i>	Butler, 1881	<i>Mecyna</i>	
<i>U. ephippias</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. eucrena</i>	Meyrick, 1888	<i>Scopula</i>	
<i>U. exigua</i>	Butler, 1880	<i>Scopula</i>	<i>U. despecta</i> [syn.]
<i>U. helioxantha</i>	Meyrick, 1899	<i>Loxostege</i>	
<i>U. heterodoxa</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. hyacinthias</i>	Meyrick, 1899	<i>Phlyctaenia</i>	<i>U. calliastra</i> [subsp.]
<i>U. iocrossa</i>	Meyrick, 1899	<i>Phlyctaenia</i>	<i>U. micacea</i> [syn.]
<i>U. lampadias</i>	Meyrick, 1904	<i>Phlyctaenia</i>	
<i>U. leucozonea</i>	Hampson, 1913	<i>Pionea</i>	<i>U. eucrena</i> [syn.]
<i>U. liopis</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. litorea</i>	Butler, 1883	<i>Scopula</i>	
<i>U. melanopis</i>	Meyrick, 1899	<i>Loxostege</i>	
<i>U. metasema</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. micacea</i>	Butler, 1881	<i>Aporodes?</i>	
<i>U. monticolans</i>	Butler, 1882	<i>Locastra</i>	
<i>U. nigrescens</i>	Butler, 1881	<i>Mecyna</i>	
<i>U. ommatias</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. pachygramma</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. phaethontia</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. phyllostegia</i>	Swezey, 1946	<i>Phlyctaenia</i>	
<i>U. platyleuca</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. poliochroa</i>	Hampson, 1913	<i>Pionea</i>	<i>U. litorea</i> [syn.]
<i>U. psychropa</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. pyranthes</i>	Meyrick, 1899	<i>Phlyctaenia</i>	
<i>U. rhodias</i>	Meyrick, 1899	<i>Phlyctaenia</i>	<i>U. liopis</i> [subsp.]
<i>U. stellata</i>	Butler, 1883	<i>Melanomecyna</i>	
<i>U. swezeyi</i>	Zimmerman, 1951	<i>Protaulacisticis</i>	
<i>U. synastra</i>	Meyrick, 1899	<i>Phlyctaenia</i>	<i>U. calliastra</i> [subsp.]
<i>U. thermantis</i>	Meyrick, 1899	<i>Pyrausta</i>	
<i>U. thermantoidis</i>	Swezey, 1913	<i>Pyrausta</i>	
<i>U. violae</i>	Swezey, 1933	<i>Phlyctaenia</i>	

SUBFAMILY SCOPARIINAE

Genus *Eudonia* Billberg, 1820, replacing *Scoparia* Haworth, 1811. I noted (Munroe 1960) that the Hawaiian species belong to *Eudoria* Chapman, 1912, rather than to *Scoparia*. Subsequently Whalley (1966) showed that the correct name for the group to which I referred is *Eudonia*, proposed 90 years earlier. I mentioned this name in connection with the Hawaiian species in *The Moths of America North of Mexico* (Munroe in Dominick *et al.* 1972), but I did not transfer any species by name. I now transfer all the nominal species cited by Zimmerman, a total of 66, to *Eudonia* as new combinations (see Table 2). I know more than 100 Hawaiian species of *Eudonia*, many unnamed, forming about 20 species groups. Most of this work is not yet published, but the following changes affect already named species:

a. *Eudonia macrophanes* is a good species, not a subspecies of *bucolica* as given by Zimmerman. Zimmerman designated a neotype for this taxon, but the holotype was later rediscovered and figured (Munroe 1969), and the International Commission on Zoological Nomenclature in its Opinion 977 set aside the neotype (Melville 1972). The holotype is not conspecific with Zimmerman's neotype, and both are grey moths specifically distinct from the brown *E. bucolica*. *E. macrophanes sensu* Zimmerman is still unnamed.

b. *E. pyreseutis* Meyrick, also placed by Zimmerman as a subspecies of *bucolica*, is likewise specifically distinct, having more extensive light-colored scaling on the forewing and less distinct transverse lines, with the postmedial line more shallowly excurved opposite the cell.

c. *Eudonia nectarias* is not a synonym of *E. ianthes* Meyrick. *E. ianthes* is one of several orange-tinted species, mostly restricted to single islands, maintaining a distinct appearance from one another in series, despite their general resemblance. It is common on Kaua'i, where it coexists with an undescribed species with more rounded forewing apex and a larger and more conspicuous pale patch in the forewing cell. *E. nectarias*, from Lāna'i and Maui, has a more uniform and less orange ground, has the antemedial line more strongly oblique, has the pale cell spot of the forewing reduced, lacks the pale oblique streak on the costa basad of the postmedial line, and has only a weak indentation on the postmedial line at the cubital fold.

Table 2. New combinations in Hawaiian *Eudonia*, genera in which originally described and specific synonymy according to Zimmerman (1958) and current.

New combination	Author, date	Described in	Synonym or subspecies of:	
			Zimmerman (1958)	Current
<i>Eudonia actias</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. aeolias</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. amphicypella</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. antimacha</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. balanopsis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. bucolica</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. catactis</i>	Meyrick, 1904	<i>Scoparia</i>	<i>ombrodes</i> (syn.)	<i>ombrodes</i> (syn.)
<i>E. clonodes</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. crataea</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. cryerodes</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. dactyliopa</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. demodes</i>	Meyrick, 1888	<i>Xeroscopia</i>		
<i>E. empeda</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. epimystis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. erebochalca</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. formosa</i>	Butler, 1881	<i>Scoparia</i>		
<i>E. frigida</i>	Butler, 1881	<i>Scoparia</i>		

New combination	Author, date	Described in	Synonym or subspecies of:	
			Zimmerman (1958)	Current
<i>E. geraea</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. gonodecta</i>	Meyrick, 1904	<i>Scoparia</i>		
<i>E. gymnopsis</i>	Meyrick, 1904a	<i>Scoparia</i>	<i>oenopsis</i> (syn.)	<i>oenopsis</i> (syn.)
<i>E. halirrhoa</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. halmaea</i>	Meyrick, 1899	<i>Scoparia</i>	<i>meristis</i> (subsp.)	[good sp.]
<i>E. hawaiiensis</i>	Butler, 1881	<i>Scoparia</i>		
<i>E. ianthes</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. ischnias</i>	Meyrick, 1888	<i>Xeroscopa</i>		
<i>E. isophaea</i>	Meyrick, 1904a	<i>Scoparia</i>		
<i>E. jucunda</i>	Butler, 1881	<i>Scoparia</i>		
<i>E. loxocentra</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. lycopodiae</i>	Swezey, 1910	<i>Scoparia</i>		
<i>E. macrophanes</i>	Meyrick, 1888	<i>Scoparia</i>	<i>bucolica</i> (subsp.)	[good sp.]
<i>E. marmarias</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. melanocephala</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. melanopsis</i>	Meyrick, 1888	<i>Xeroscopa</i>	<i>montana</i> (syn.)	<i>montana</i> (syn.)
<i>E. melichlora</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. meristis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. mesoleuca</i>	Meyrick, 1888	<i>Xeroscopa</i>		
<i>E. miantis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. montana</i>	Butler, 1882	<i>Scoparia</i>		
<i>E. nectarias</i>	Meyrick, 1899	<i>Scoparia</i>	<i>ianthes</i> (syn.)	[good sp.]
<i>E. nectarioides</i>	Swezey, 1913	<i>Scoparia</i>		
<i>E. nyctombra</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. oenopsis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. ombrodes</i>	Meyrick, 1888	<i>Xeroscopa</i>		
<i>E. omichlopis</i>	Meyrick, 1899	<i>Scoparia</i>	<i>probolaea</i> (syn.)	[good sp.]
<i>E. orthoria</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. oxythyma</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. pachysema</i>	Meyrick, 1888	<i>Xeroscopa</i>		
<i>E. parachlora</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. passalota</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. pentaspila</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. perkinsi</i>	Zimmerman, 1958	<i>Scoparia</i>	<i>ombrodes</i> (subsp.)	<i>catactis</i> (syn.)
<i>E. peronetis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. platyscia</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. probolaea</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. pyrseutis</i>	Meyrick, 1899	<i>Scoparia</i>	<i>bucolica</i> (subsp.)	[good sp.]
<i>E. religiosa</i>	Meyrick, 1904	<i>Scoparia</i>		
<i>E. rhombias</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. siderina</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. struthias</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. tetranesa</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. thalamias</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. thyellopis</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. triacma</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. tyraula</i>	Meyrick, 1899	<i>Scoparia</i>		
<i>E. venosa</i>	Butler, 1881	<i>Scoparia</i>		
<i>E. zophochlora</i>	Meyrick, 1899	<i>Scoparia</i>		

d. *E. omichlopis* Meyrick is clearly distinct from *E. probolaea* Meyrick. Though both are narrow-winged species of relatively large size from Kaua'i, *E. omichlopis* has the costa of the forewing more rounded, especially near the apex, the termen more oblique, the ground more uniform and pinkish rather than bluish grey, the markings much less strongly dark-shaded, and the antemedial line acutely, not obtusely, angled at the middle of the wing. Good series of the two species are available, and they show no tendency to intergrade.

e. Zimmerman, like Meyrick (1904), noted that *E. ombrodes* splits rather evenly into lighter and darker forms. Meyrick applied the name *catactis* Meyrick to the darker form, but Zimmerman showed that the holotype of *catactis* actually belongs to the lighter form. Zimmerman therefore proposed the name *perkinsi*, intended to apply to the dark form, and treated it as a "subspecies," even though the dark form is widely sympatric with light-colored *ombrodes*. It turns out that this action involved two further errors. First, *ombrodes* is sexually dimorphic (the light individuals are males, the dark ones females), so that a new name is not required at all. Second, the holotype of *perkinsi*, from the island of Hawai'i, belongs not to *ombrodes* but to the related but slightly larger *E. crataea* Meyrick, endemic on the island of Hawai'i, so *perkinsi* must be sunk as a synonym of *crataea* (new synonymy).

FAMILY PYRALIDAE

SUBFAMILY PHYCITINAE

Genus *Crytoblabe* Zeller, 1848. Zimmerman (1972: 433) synonymized *C. aliena* Swezey, 1909, treated under that name by Zimmerman (1958), with *C. gnidiella* (Millière 1867). Heinrich (1956: 10) recorded *C. gnidiella* from Hawaii, but did not establish the synonymy of *C. aliena*. *C. gnidiella* should stand as the valid name, with *C. aliena* as a synonym.

Genus *Paramyelois* Heinrich, 1956. (Not in Zimmerman.) Swezey (1948: 204) reported as *Myelois venipars* Dyar, [1914], a specimen of *Paramyelois transitella* (Walker 1863) reared from an orange with black rot found in a Honolulu fruit store. The species was not mentioned by Zimmerman, and there is no evidence that it became established.

Genus *Elasmopalpus* Blanchard, 1852. (Not in Zimmerman.) *Elasmopalpus lignosellus* (Zeller 1848) was discovered on Kaua'i, O'ahu and Maui in 1986 (Heu 1988). This economic pest, whose official name is the lesser cornstalk borer, is widely polyphagous, especially on grasses and legumes. Larvae bore in the stems of hosts and may also feed on leaves. The species is of American origin, ranging from Canada, Massachusetts, and California through Bermuda, the West Indies, and Central and South America to Argentina and Chile. Heinrich (1956: 163) gave a full synonymy and listed a number of hosts.

Genus *Assara* Walker, 1863. (Not in Zimmerman.) *Assara albicostalis* Walker, 1863, was reported by Howarth (1982: 12) and Howarth and Sattler (1982: 14) as established on O'ahu. The species was described from Sarawak and is widespread in tropical Asia and the western Pacific region.

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